

110TH CONGRESS }
2d Session }

HOUSE OF REPRESENTATIVES

{ REPT. 110-528
{ Part 2

DISMISSING THE ELECTION CONTEST RE-
LATING TO THE OFFICE OF REPRESENTA-
TIVE FROM THE THIRTEENTH CONGRES-
SIONAL DISTRICT OF FLORIDA

R E P O R T

OF THE

COMMITTEE ON HOUSE ADMINISTRATION

TO ACCOMPANY

H. Res. 989

Part 2 of 3



FEBRUARY 14, 2008.—Referred to the House Calendar and ordered to be
printed

**DISMISSING THE ELECTION CONTEST RELATING TO THE OFFICE OF REPRESENTATIVE FROM THE
THIRTEENTH CONGRESSIONAL DISTRICT OF FLORIDA—PART 2 OF 3**

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TASK FORCE FOR THE CONTESTED ELECTION IN THE 13TH CONGRESSIONAL
DISTRICT OF FLORIDA

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DISMISSING THE ELECTION CONTEST RELATING TO THE OFFICE OF REPRESENTATIVE FROM THE THIRTEENTH CONGRESSIONAL DISTRICT OF FLORIDA

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Mr. BRADY of Pennsylvania, from the Committee on House Administration, submitted the following

R E P O R T

[To accompany H. Res. 989]

The Committee on House Administration, having had under consideration an original resolution dismissing the election contest relating to the office of Representative from the Thirteenth Congressional District of Florida, report the same to the House with the recommendation that the resolution be agreed to.

COMMITTEE ACTION

On February 12, 2008, by unanimous voice vote, a quorum being present, the Committee agreed to a motion to report the resolution favorably to the House.

COMMITTEE OVERSIGHT FINDINGS

In compliance with clause 3(c)(1) of rule XIII of the Rules of the House of Representatives, the Committee states that the findings and recommendations of the Committee, based on oversight activities under clause 2(b)(1) of rule X of the Rules of the House of Representatives, are incorporated in the descriptive portions of this report.

STATEMENT ON BUDGET AUTHORITY AND RELATED ITEMS

The resolution does not provide new budget authority, new spending authority, new credit authority or an increase or decrease in revenues or tax expenditures. Thus, clause 3(c)(2) of rule XIII of the Rules of the House of Representatives and the provisions of section 308(a)(1) of the Congressional Budget Act of 1974 are not applicable.

TASK FORCE ON THE CONTESTED ELECTION

Pursuant to Rule 16(b) of the Rules of Procedure of the Committee on House Administration, the Honorable Juanita Millender-McDonald, Chairwoman of the Committee, established a Task Force on March 22, 2007 to oversee matters related to the election of a Representative from the 13th Congressional District of Florida to the House of Representatives and to recommend to the Committee the final disposition of the election contest filed by Christine Jennings (“Contestant”) against Vern Buchanan (“Contestee”) pursuant to the Federal Contested Elections Act (FCEA), 2 U.S.C. §§ 381–396.

STATEMENT OF FACTS

Introduction

This report relates to the election contest concerning the 2006 general election for the House of Representatives seat for the 13th Congressional District of Florida. This election contest arises under the United States Constitution, Article I, § 5, and is brought pursuant to the FCEA, 2 U.S.C. §§ 381–396. The House of Representatives has the express and final authority to judge the elections and returns of its own Members.¹

2006 General Election for the 13th Congressional District of Florida

On November 7, 2006, Republican Vern Buchanan and Democrat Christine Jennings competed in the general election to represent the open seat for the 13th Congressional District of Florida (“District-13”).² Of the 238,249 votes cast, Contestant received 118,737 votes and Contestee received 119,105, a 368-vote margin of victory.³ Pursuant to Florida law, the Florida Elections Canvassing Commission ordered a recount to verify the small margin of victory.⁴ Following the recount, on November 20, 2006, the Elections Canvassing Commission certified 119,309 votes for Contestee and 118,940 votes for Contestant, with Contestee prevailing by 369 votes.⁵

The election results, however, were controversial, as Sarasota County reported an almost 15% undervote, an unusually high number of undervotes compared to other counties in the District. Of the 123,901 ballots cast in Sarasota County, 18,000 did not show a vote cast for the District-13 race.

Proceedings Involving Florida Secretary of State’s Office

On November 9, 2006, the Florida Secretary of State directed the Florida Division of Elections, Bureau of Voting Systems Certification to conduct an audit of Sarasota County’s voting system and election procedures to assure that the voting system used in Sarasota County was not responsible for the unusually high number in the Congressional race in the county. On November 28, 2006, Flor-

¹U.S. Constitution Article I, Section V, Clause 1.

²The District-13 seat was formerly held by Representative Katherine Harris, who decided to run for the United States Senate rather than for re-election to the House.

³Wallace, Jeremy. “Democrats Seize House; Crist In; Buchanan Leads; Slim 368-vote margin will trigger a recount for the 13th District.” *Sarasota Herald-Tribune* 8 November 2006.

⁴Florida Election Code 102.141(6).

⁵Official Certificate of the State Elections Canvassing Commission of the General Election Held on the Seventh Day of November 2006. (See Appendix F)

ida's audit team commenced two parallel tests on the Election Systems & Software (ES&S) iVotronic touch screen voting systems. These parallel tests were designed to simulate mini-elections on five voting systems to test Election Day vote totals cast on the machines and assess whether the undervote count observed during the District-13 race could be replicated. On December 15, 2006, pursuant to the Florida Secretary of State's request, Florida State University's Security Analysis in Information Technology (SAIT) Laboratory conducted a software review and security analysis of the ES&S iVotronic firmware. The final audit report released by the Florida Department of State on February 23, 2007 found no evidence to suggest or conclude that the official certified election results did not reflect the actual votes cast.⁶

Proceedings Involving Florida's Courts

On November 20, 2006, Contestant filed a contested election suit in Florida's Circuit Court for the Second Judicial Circuit.⁷ Contestant argued that Florida's certified vote totals excluded thousands of legal votes that were cast in Sarasota County due to malfunctioning electronic voting machines.⁸ Contestant subsequently requested access to the ES&S hardware and software in possession of the state and county to test whether the iVotronic voting system in fact malfunctioned and caused the undervotes.⁹ The state, county, and ES&S defendants jointly objected to Contestant's production request, arguing that these materials were trade secrets belonging to ES&S.¹⁰ In addition to the defendants' objections, ES&S requested an evidentiary hearing to determine the necessity of Contestant's request for the hardware, software, and source code. Judge William Gary granted ES&S's request and held an evidentiary hearing on December 19 and 20, 2006. On December 29, 2006, Judge Gary issued an order denying Jennings access to the ES&S hardware and software.

On January 3, 2007, Contestant filed an emergency motion in Florida's First District Court of Appeal to expedite proceedings and appeal of the trial court's ruling. On January 24, 2007, the appellate court granted Contestant's motion to expedite. On June 18, 2007, the First District of Appeal denied the Contestant's motion to compel discovery and access to proprietary information, including voting machine source code technology. No further action was taken by the courts or the parties over the following five months, and the Contestant withdrew her challenge in the Florida courts on November 26, 2007.

⁶Florida Department of State, Division of Elections *Audit Report of the Elections Systems and Software, Inc.'s iVotronic Voting System in the 2006 General Election for Sarasota County*. Florida: 2007. (See Appendix D)

⁷Contestant filed the contested election suit in the Florida's Circuit Court of the Second Judicial Circuit under Florida Election Code 102.168.

⁸*Jennings v. Election Canvassing Commission of the State of Florida*, Plaintiff's Compliant to Contest, 20 November 2006. (See Appendix E)

⁹*Jennings v. Election Canvassing Commission of the State of Florida*, Plaintiff's Motion to Compel Expedited Discovery, 20 November 2006. (See Appendix E)

¹⁰*Jennings v. Election Canvassing Commission of the State of Florida*, State Defendants' Response to Plaintiff Jennings' Request for Production of Documents and for Inspection of Tangible Things, 5 December 2006. (See Appendix E)

Proceedings Before the Committee on House Administration

On December 20, 2006, in addition to her state court suit, Contestant filed a Notice of Contest with the House of Representatives under the FCEA¹¹ and pursuant to the authority vested in the House by the U.S. Constitution.¹² On January 4, 2007, the late Committee on House Administration Chairwoman Millender-McDonald wrote to the appellate court to express concern whether the State's proceedings regarding access to evidence that could resolve the contested election matter at the State level would facilitate resolution of the election contest proceedings pending before the House.¹³ A complete record, she opined, would facilitate the House's consideration of the pending contest.

On January 4, 2007, Contestee was sworn in as a Member of the One Hundred and Tenth Congress. On January 19, 2007, Contestee filed a Motion to Dismiss in which he argued that the Contestant's case was based upon nothing more than conjecture and speculation. In support of his characterization of the contest, Contestee pointed out that the State of Florida conducted an audit of the voting systems in Sarasota County and found that they operated properly.¹⁴

On January 22, 2007, Chairwoman Millender-McDonald requested that Sarasota County Supervisor of Elections Kathy Dent preserve all materials utilized in conjunction with the Federal general election held on November 7, 2006.¹⁵ On January 26, 2007, Sarasota County replied that it needed to deploy approximately 800 of the 1,600 voting machines used in the November 2006 general election for its March 2007 municipal election.¹⁶ On February 7, 2007, Chairwoman Millender-McDonald, relying on expert advice that testing all the machines would be unnecessary in determining whether the machines were responsible for the undervote, and the County reached a compromise wherein the county could deploy 800 voting machines for use in the March election.¹⁷

On March 23, 2007, Chairwoman Millender-McDonald established a three member Task Force to oversee matters relating to the District-13 election contest. For the Majority, Chairwoman Millender-McDonald appointed Representative Charles Gonzalez as Chair and Representative Zoe Lofgren as a member of the Task Force. On April 16, 2007, Ranking Member Vernon Ehlers recommended Representative Kevin McCarthy to serve as the Minority member of the Task Force. Shortly after Chairwoman Millender-McDonald's passing on April 22, 2007, the then-acting Chairman, Representative Robert Brady, appointed Representative Kevin McCarthy to serve as the Minority Task Force member on April 25, 2007.

The Task Force first met on May 2, 2007, when it unanimously voted to retain the Government Accountability Office (GAO) to investigate whether the voting machines used in Sarasota County

¹¹ 2 U.S.C. §§ 381–369.

¹² U.S. Constitution, Article 1, Section V.

¹³ Millender-McDonald, Chairwoman Juanita, Letter to the Mr. Jon Wheeler, 2 January 2007 (See Appendix E) On January 10, 2007, the appellate court notified the Chairwoman that her correspondence would not be docketed and considered by the panel of judges deciding Contestant's case.

¹⁴ *Jennings v. Buchanan*. Contestee's Motion to Dismiss Election Contest, 19 January 2007. (See Appendix F)

¹⁵ For document see Appendix B.

¹⁶ For document see Appendix B.

¹⁷ For document see Appendix B.

contributed to the unusually high number of undervotes. The GAO was also asked to evaluate and recommend whether additional testing was needed to establish whether the voting machines contributed to the undervote.¹⁸

On June 14, 2007, the Task Force unanimously approved the GAO's Engagement Plan, which detailed its scope of work and approach to determine to what extent the voting machines used in Sarasota County could have contributed to the large undervote and ascertain whether additional testing was needed to determine whether machine malfunction contributed to the undervote.¹⁹ The Task Force also agreed that Chairman Gonzalez would transmit the GAO Engagement Plan to both parties to the contest and provide them seven days to comment on the plan. The parties were asked to address central questions relating to the adequacy or inadequacy of prior testing of the electronic voting machines, whether additional tests were needed, and provide suggested testing protocols in the event that additional testing was required.²⁰ Further, the Task Force agreed that Chairman Gonzalez should notify all individuals, offices, and entities identified in the GAO plan that the Task Force sought their full, prompt, and voluntary cooperation with the GAO.²¹

On June 27, 2007, before the GAO completed its Engagement Plan, Representative Kevin McCarthy wrote to Chairman Gonzalez regarding media reports, one of which urged Contestant to consider conceding the election.²² Representative McCarthy requested that the Task Force prepare a contingency plan to resolve the election contest in the event that Contestant opted to concede the race to Contestee. On June 28, 2007, Chairman Gonzalez informed Representative McCarthy that the Task Force would not entertain a contingency plan to end the contested election proceedings based bare speculation regarding the Contestant's future intentions.²³

On August 3, 2007, at a public meeting of the Task Force, the GAO provided a status report on the progress of its Engagement Plan. The GAO testified that it had been analyzing ballot results and reviewing existing testing efforts such as the Florida election audit. The GAO also offered its preliminary observations of the Florida parallel test, source code review, and audit of the Sarasota County voting systems.²⁴

On October 2, 2007, the GAO stated that further testing could provide increased assurance that the voting systems did not cause

¹⁸ Government Accountability Office, *Engagement Plan for Review of Voting Equipment Used in Florida's 13 Congressional District during the 2006 General Election*. District of Columbia: 14 June 2007. (See Appendix C)

¹⁹ *Meeting to Discuss the Status of the Investigation into the FL-13 Congressional District Election: Meeting Before the Committee on House Administration* 110th Cong., 1st Sess. Page 21 (June 14, 2007).

²⁰ Gonzalez, Charles, Letter to Mr. Sam Hirsh & Mr. Hayden Dempsey, 15 June 2007. (See Appendix B)

²¹ Gonzalez, Charles, Letter to Ms. Dent, Mr. Browning, Ms. Tuck, Mr. Tesi, & Mr. Burmester, 15 June 2007. (See Appendix B)

²² McCarthy, Kevin, Letter to Rep. Charles Gonzalez, 27 June 2007. (See Appendix B)

²³ Gonzalez, Charles, Letter to Rep. Kevin McCarthy, 28 June 2007. (See Appendix B)

²⁴ *Meeting to Discuss the Status of the Investigation into the FL-13 Congressional District Election: Meeting Before the Committee on House Administration* 110th Cong., 1st Sess. Page 3 (August 3, 2007) (Testimony of Dr. Nabajyoti Barkakati).

the undervotes in Florida's Thirteenth Congressional District.²⁵ During its analysis, GAO found that, while prior testing and reviews by the State of Florida and Sarasota County provided some degree of assurance that certain components of the voting systems in Sarasota County functioned correctly, such testing and reviews were not sufficient to provide adequate assurance that the voting systems did not contribute to the undervotes. Following GAO's testimony, the Task Force unanimously authorized GAO to conduct its recommended testing on the Sarasota County voting systems.

On February 8, 2008, GAO provided the Task Force with the results from the additional testing it conducted on the firmware, ballot, and calibration of the iVotronic touch screen voting machines.²⁶ GAO concluded that the voting systems used in Sarasota County did not contribute to the undervote and further testing was not necessary. GAO also acknowledged that ballot design or voter confusion or apathy in the race could have contributed to the 18,000 undervotes. Following the GAO testimony the Task Force unanimously moved to report to the Committee on House Administration that the election contest in District-13 be dismissed.

On February 12, 2008, the Committee on House Administration met to consider the recommendation of the Task Force for the District-13 election contest. During this meeting, the Committee unanimously voted to report favorably to the House an original resolution to dismiss the election contest.²⁷

BASIS OF CONTEST

In support of her Notice of Contest, the contestant alleged the following grounds for contesting the election: first, she dismissed the reliability of Florida's recount audit, arguing that merely "recounting" electronic ballots (unlike paper ballots) is inevitably a meaningless exercise because the manual "recount" consists simply of printing out the ballot-image reports from the alleged malfunctioning iVotronic systems and counting by hand the ballot images that recorded no choice for the congressional race in question.²⁸ As anticipated, neither the machine nor the manual recount altered or explained the number of congressional undervotes recorded on the iVotronic touch screen voting system in Sarasota County.

Contestant also argued that the undervote total for the congressional race in Sarasota County was abnormal in several respects. The undervote rate on Election Day was 13.9% of the ballots cast on electronic voting machines, and the undervote rate during the early-voting process was 17.6% of the ballots cast on electronic machines. By contrast, of the 22,613 votes cast in this race by paper absentee ballot in Sarasota County, there were just 566 undervotes recorded—an undervote rate of only 2.5%. In addition, the percentage of undervotes for the District-13 race in Sarasota County was

²⁵ *Meeting to Discuss the Status of the Investigation into the FL-13 Congressional District Election: Meeting Before the Committee on House Administration*, 110th Cong., 1st Sess. Page 6 (October 2, 2007) (Testimony of Dr. Nabajyoti Barkakati).

²⁶ *GAO Briefing to the Task Force: Report on Findings in the Investigation into the FL-13 Congressional District Contested Election: Meeting Before the Committee on House Administration*, 110th Cong., 2nd Sess. (February 8, 2008).

²⁷ *Meeting Before the Committee on House Administration Meeting*, 110th Cong., 2nd Sess. (February 12, 2008).

²⁸ *Jennings v. Buchanan* Notice of Contest Regarding the Election For Representative In the One Hundred Tenth Congress From Florida's Thirteenth Congressional District, 20 December 2006. (See Appendix F)

disproportionately higher than other counties within District-13. The undervote rate for the race was 2.5% in Charlotte County, 2.1% in DeSoto County, 5.8% in Hardee County, and 2.4% in Manatee County. Finally, the percentage of undervotes recorded on electronic voting machines in Sarasota County in 2006 for the congressional race was almost seven times the rate of undervotes for District-13 in the last midterm election (2002), which was 2.2%. Contestant argued that this statistical evidence alone indicated that the large number of undervotes in Sarasota must be attributable to a malfunction of the iVotronic touch screen voting system.

In addition to this statistical evidence, Contestant also submitted as evidence in support of her Notice of Contest affidavits memorializing the eyewitness accounts of hundreds of Sarasota County voters attesting to their difficulties in attempting to cast a vote for Contestant during early voting and on Election Day on the iVotronic touch screen voting system in Sarasota County.²⁹ She also cited numerous contemporaneous official “Incident Report Forms” filed with the Sarasota County Supervisor of Elections documenting widespread occurrences of voters having difficulty getting the iVotronic machines to record votes in the District-13 race.

Finally, Contestant cited a statistical analysis conducted by Professor Charles Stewart III, the chair of the Political Science Department at the Massachusetts Institute of Technology (MIT), to argue that failure of the iVotronic touch screen voting system adversely affected the outcome of the District-13 race. Based on his study of patterns in the undervote rates for other statewide or countywide races in Sarasota County, Professor Stewart estimated that the number of “excess” undervotes caused by the use of the iVotronic machines in Sarasota County was approximately 14,000.³⁰ Using the ballot-image logs for every individual ballot cast electronically in the Sarasota County November 2006 general election—and studying voters’ preferences not only for the congressional race but also for the statewide races for U.S. Senator, Governor, Attorney General, Chief Financial Officer, and Agriculture Commissioner—Professor Stewart estimated that the voters whose congressional ballots were recorded as undervotes likely supported Contestant over Contestee by a margin of approximately 63% to 37%. Accordingly, Professor Stewart postulated that if the 14,000 congressional undervotes had actually been properly recorded and tallied, Contestant would have won the election by more than 3,000 votes—well in excess of the race’s 369 vote margin of victory. Professor Stewart also postulated that even if the machine malfunction caused only 1,500 “excess” undervotes—or less than 10% of the total congressional undervotes reported—proper tabulation of those 1,500 congressional ballots could have reversed the outcome of the election.

²⁹ *Jennings v. Buchanan*, Documentation of Voting Machine Malfunction Appendix to Contestant Jennings’ Memorandum Responding to the Honorable Charles A. Gonzalez’s April 3, 2007 Letter Regarding The Investigation of the Election For Representative In the One Hundred Tenth Congress From Florida’s Thirteenth Congressional District Volume I & II, 13 April 2007. (See Appendix F)

³⁰ *Jennings v. Buchanan*, Notice of Contest Regarding the Election For Representative In the One Hundred Tenth Congress From Florida’s Thirteenth Congressional District, 20 December 2006. (See Appendix F)

STANDING, TIMING, & NOTICE

To have standing under the FCEA, a contestant must have been a candidate for election to the House of Representatives in the last preceding election and claim a right to the contestant's seat.³¹ Jennings was the Democratic nominee and her name appeared as a candidate for the District-13 of the official ballot for the November 7, 2006 election, thereby satisfying the standing requirement. The Notice of Contest was served upon Contestee and filed within the prescribed time periods of the FCEA.

RESPONSE BY CONTESTEE

On January 19, 2007, Contestee filed a Motion to Dismiss with the Clerk of the House, in which Contestee argued that the Contestant's contest be dismissed because Contestant: (1) Failed to provide credible evidence sufficient to alter the result of the election; and (2) failed to credibly make a claim of right to Contestee's congressional seat.

In support of his Motion to Dismiss, Contestee argued that his certification by the State of Florida as the winner of the District-13 election constitutes prima facie evidence that the election was conducted correctly and must be afforded a strong presumption of legality and correctness. He argued that the iVotronic touch-screen voting system challenged by Contestant and her experts was tested as required by Florida law prior to the early voting period and Election Day and was found by the State to be working properly. He noted that the State of Florida conducted post-election parallel testing, which concluded that the iVotronic touch screen machines demonstrated 100% accuracy in recording vote selections and "there is no evidence to support the position that the iVotronic touch screens caused votes to be lost."³² Contestee also noted that during post-election litigation a Florida circuit court conducted a thorough review of Contestant's evidence and experts' opinions and concluded that the "testimony of [Jennings'] experts was nothing more than conjecture and not supported by credible evidence."³³

Contestee also argued that Contestant, in her Notice of Contest, failed to provide necessary evidence that: (1) The intent of any single voter was frustrated; (2) any individual voter was unable to cast a vote for her; or (3) a single vote was cast for her but not counted. Contestee argued that the lack of such evidence demonstrated that Contestant could not meet the high burden required to proceed with the Contest or invalidate a certified election.

STANDARD FOR GRANTING MOTION TO DISMISS

The House of Representatives has the Constitutionally vested power to judge its own elections.³⁴ The FCEA sets forth procedures under which a contestant may bring a contest to the House of Representatives. Under the FCEA, it is not sufficient for a contestant merely to allege irregularities or fraud in an election. The contest-

³¹ 2 U.S.C. Sec. 382(a).

³² *Jennings v. Buchanan*. Contestee's Motion to Dismiss Election Contest, 19 January 2007. (See Appendix F)

³³ *Jennings v. Buchanan*. Contestee's Motion to Dismiss Election Contest, 19 January 2007. (See Appendix F)

³⁴ U.S. Constitution Article I, Section V.

ant must claim a right to the office.³⁵ The contestant must support the claim with specific credible allegations of irregularity or fraud that, if proven true, would entitle the contestant to the office.³⁶ Unless a contestant credibly claims in his or her Notice of Contest a right to the office, the House of Representatives will dismiss the contest.³⁷

ANALYSIS

At its first meeting on May 2, 2007, the Task Force had before it the pleadings filed by Contestant, her Notice of Contest Regarding the Election for Representative in the One Hundred Tenth Congress from Florida's Thirteenth Congressional District ("District"), and Contestee's Motion to Dismiss Election Contest. By voice vote, the Task Force initiated an investigation of the District-13 election.³⁸

Under the Committee on House Administration's investigative authority to develop evidence needed to consider a contested election,³⁹ Task Force Chairman Charles Gonzalez secured the assistance of the GAO in connection with the technical analysis of the voting equipment used in Sarasota County. Specifically, the Task Force asked the GAO to review the existing testing and evaluation conducted by Sarasota County, the State of Florida, and the manufacturers of the voting equipment. The review was to include opinions and recommendations of Contestant and Contestee as to the adequacy or inadequacy of the testing performed to date.⁴⁰ Additionally, the GAO was to review the pleadings and supporting documents filed in the contest, and if needed, design, propose, and implement testing protocols to determine the reliability of the voting equipment used.

On June 14, 2007, the GAO presented its plan to review the voting equipment used in the District during the 2006 general election.⁴¹ The high-level objective of the plan, as unanimously approved by the Task Force, was to determine the extent to which the iVotronic voting machines could have contributed to the large undervote in Sarasota County, and to ascertain whether additional testing might be needed. Though the District includes five counties, because Contestant's claims and the Florida state audit focused solely on Sarasota County, the Task Force limited GAO's scope of review to Sarasota County.

During the period June 14, 2007–October 2, 2007, the GAO met with officials from the Office of the Sarasota County Supervisor of Elections, the Florida Department of State and Division of Elections, and ES&S. From its analysis of the prior tests and reviews conducted by the State of Florida and Sarasota County, the GAO found that certain components of the iVotronic touch screen voting

³⁵ 2 U.S.C. Sec. 382.

³⁶ *Pierce v. Pussell*, H. Rep. 95-245 (1977).

³⁷ *Anderson v. Rose*, H. Rep. 104-852 (1996).

³⁸ *Meeting to Discuss Matters Pertaining to the Contested Election in the 13th Congressional District of Florida: Meeting Before the Committee on House Administration* 110th Cong., 1st Sess. Page 12 (May 2, 2007).

³⁹ Rules of the Committee on House Administration One Hundred Tenth Congress, Rule 16.

⁴⁰ Burhans, Glenn, Letter to Rep. Charles Gonzalez, 22 June 2007. (See Appendix F) Hirsch, Sam, Letter to Rep. Charles Gonzales, 22 June 2007. (See Appendix F)

⁴¹ *Meeting to Discuss the Status of the Investigation into the FL-13 Congressional District Election: Meeting Before the Committee on House Administration* 110th Cong., 1st Sess. Page 17 (June 14, 2007)

systems in Sarasota functioned correctly and that reasonable assurance of some voting system objectives had been achieved, but these tests and reviews were not enough to provide reasonable assurance that the iVotronic voting systems did not contribute to the undervote.

The GAO indicated that the prior tests and reviews of Sarasota County's iVotronic voting systems had some shortcomings. First, the GAO indicated that "reasonable assurance" that all the iVotronic voting systems used in the 2006 general election used software certified by the Florida Division of Elections was lacking. Second, the ability of voters to make selections in different ways on the iVotronic voting systems and ensure their votes were properly recorded had not been fully tested. Finally, the GAO indicated that prior testing did not provide a clear understanding of whether a miscalibrated machine would have contributed to the undervote. On the basis of GAO's analysis of all prior tests and audit activities conducted on the iVotronic touch screen voting systems in Sarasota County, the Task Force unanimously approved on October 2, 2007, that the GAO should conduct: (1) further firmware testing to verify that the firmware in the iVotronic voting systems used in the Sarasota County machines matched the certified version; (2) ballot testing of the iVotronic voting systems to confirm correct operation; and (3) calibration testing of the iVotronic to understand the effect on the undervote.

During the period November 27–December 4, 2007, the GAO conducted additional testing on the iVotronic touch screen voting system used in Sarasota County. The GAO delivered its report on the process and results of the additional testing to the Task Force at a public hearing on February 8, 2008.

To conduct its tests, the GAO developed test protocols and detailed test procedures, fully outlined in its report and appendices. The GAO met with officials from the Sarasota County Supervisor of Elections, the Florida Department of State and Division of Elections, and ES&S to obtain necessary details about the voting systems and prior tests to document the testing procedures. The GAO also reviewed voting system documentation to develop its testing approach and procedures. To ensure that the certified firmware held in escrow by the Florida Division of Elections corresponded to the source code that was reviewed by a team from Florida State University and the GAO, on November 19, 2007, the GAO visited the ES&S development facility in Rockford, Illinois, and witnessed the rebuild of the firmware from the escrowed source code.

In conducting its firmware verification test, GAO extracted the firmware from a random probability sample of 115 iVotronic touch screen voting systems out of the 1,499 used in Sarasota County's 2006 general election and found that each machine's firmware matched the certified version of firmware held in escrow by the Florida Division of Elections. Based on this statistical approach, the GAO was able to determine with a "99 percent confidence level" that at least 1,439 of the 1,499 machines used the same firmware that was certified by the Florida Division of Elections. Consequently, the GAO reported to the Task Force that it had more confidence in the results of previous source code reviews conducted by itself and Florida State University, which had indicated that the

iVotronic touch screen voting system did not cause the recorded undervotes.

For the ballot test, the GAO cast predefined test ballots on 10 iVotronic machines and confirmed that each ballot was displayed and recorded accurately. The test ballots represented 112 common ways a voter may have interacted with the iVotronic system to select a candidate in the District-13 race and cast a ballot. These tests were performed on nine machines configured as election-day machines and then repeated on one machine configured as an early voting machine.

The GAO finally conducted the calibration test by miscalibrating two iVotronic touch-screen voting machines and casting ballots on them to validate that the machines recorded the information that was displayed on the touch screens. The GAO reported to the Task Force that its tests, involving a total of 10 different miscalibration patterns and capturing 39 ballots, indicated that the machines correctly displayed the selection in the District-13 race on the review screen and correctly recorded the ballot. The GAO further reported that, while the miscalibrated machines were more difficult to use, the selections shown on the screen were the same selection captured by the machine when the ballot was cast.

Based on the results of these tests, the GAO advised the Task Force that it has obtained increased assurance that the iVotronic touch screen voting system used in Sarasota's 2006 general election did not contribute to the large undervote in the District-13 contest. The GAO explained that although absolute assurance is not possible to achieve, since it is unable to completely recreate the conditions of the election during which the undervote occurred, it believes that these test results, combined with the other testing conducted by the State of Florida, statistically eliminate the possibility that the iVotronic touch-screen voting system was the cause of the undervote. The GAO further advised that adequate testing had been performed on the iVotronic system for it to have reached this conclusion, and the GAO did not recommend any additional testing. The GAO did acknowledge that, given the complex interaction of people, processes and technology that must work effectively together to achieve a successful election, there remains a possibility that the large undervote in District-13 could have been caused by either intentional or unintentional factors, such as voters intentionally declining to cast a vote, or voters having difficulty with the ballot layout. Additionally, statistical analysis and theories, including one that attempted to determine voter intent by reviewing other voter selections, failed to provide evidentiary support that would justify the Task Force overturning the election results in light of the machine testing results.

CONCLUSION

Contestant's contest was premised on the allegation that thousands of legal votes cast in Sarasota were not counted due to pervasive malfunctioning of the iVotronic touch screen voting system. On June 14, 2007, the Task Force unanimously authorized the GAO to proceed with its Engagement Plan to test whether these voting machines contributed to the undervote, and on February 8, 2008, the GAO reported that the results of these tests did not iden-

tify any problems that would indicate the iVotronic touch screen voting system was responsible for the undervote.

It is the Constitutional duty of the House of Representatives to investigate a valid election contest, yet only clear and convincing evidence can provide the basis to overcome the presumption of the regularity accorded a State's certified results. Absent such evidence, Florida's certification of the election results in the Thirteenth Congressional District must be confirmed by this House. For the foregoing reasons, and based on the recommendations of the Task Force, the Committee concludes that the contest should be dismissed.

ACKNOWLEDGEMENTS

The Committee acknowledges with appreciation the thorough effort of the GAO in helping to conduct the District-13 investigation and the House Recording Studio under the Chief Administrative Officer for providing assistance with the video recording of the GAO testing conducted in Florida.

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IN THE

United States House of Representatives

CHRISTINE JENNINGS,

Contestant,

v.

VERN BUCHANAN,

Contestee.

**NOTICE OF CONTEST
REGARDING THE ELECTION FOR
REPRESENTATIVE IN THE ONE HUNDRED TENTH CONGRESS
FROM FLORIDA'S THIRTEENTH CONGRESSIONAL DISTRICT**

**Pursuant to the Federal Contested Elections Act,
2 U.S.C. §§ 381-396**

KENDALL COFFEY
COFFEY & WRIGHT, LLP
2665 South Bayshore Dr.
PH-2, Grand Bay Plaza
Miami, FL 33133
(305) 857-9797

MARK HERRON
MESSER, CAPARELLO & SELF, P.A.
2618 Centennial Place
Tallahassee, Florida 32308
(850) 222-0720

DONALD B. VERRILLI, JR.
SAM HIRSCH
BRIAN HAUCK
JESSICA RING AMUNSON
JENNER & BLOCK LLP
601 Thirteenth Street, N.W.
Washington, DC 20005
(202) 639-6000

December 20, 2006

Introduction

1. This is an action brought under the Federal Contested Elections Act, 2 U.S.C. §§ 381-396, to contest the Florida Elections Canvassing Commission's November 20, 2006 certification that Contestee Vern Buchanan received 369 more votes than Contestant Christine Jennings in the general election for Representative in Congress from Florida's Thirteenth Congressional District. The vote totals in that certification are wrong because they do not include thousands of votes that were cast in Sarasota County but not counted due to the pervasive malfunctioning of electronic voting machines. The number of uncounted votes in the County is more than sufficient to change the result of the election. Indeed, statistical analysis based upon the actual ballots cast in Sarasota County in the November 2006 general election demonstrates that, had the votes lost to machine malfunction been included in the certification, Christine Jennings would have won the election by more than 3,000 votes.

2. On November 20, 2006, the State of Florida's Elections Canvassing Commission certified a total of 119,309 votes for Vern Buchanan and 118,940 for Christine Jennings. That certification excluded the votes of thousands of Sarasota County voters who used the County's electronic voting machines to vote in the election for the Thirteenth District seat and did not have their votes recorded. Indeed, the electronic voting machines in Sarasota County failed to record votes in this race for *more than one out of every seven voters* — nearly 15% of those who used the machines. There is no possibility that so many Sarasota County voters would have voluntarily abstained from voting in this hotly contested, high-profile race, especially in an election year when control of Congress was obviously at stake. Statistical analysis confirms that common-sense conclusion. Even more strikingly, the eyewitness accounts of hundreds of Sarasota County voters, and the contemporaneous records of the Sarasota County Supervisor of

Elections, document that the electronic voting machines in Sarasota County systematically failed to record votes cast for candidates in the Thirteenth District congressional race — particularly votes cast for Contestant Jennings.

3. By law, every polling place in Florida displays a “Voter’s Bill of Rights” stating that “Each registered voter in this state has the right to: . . . Vote on a voting system that is in working condition and that will allow votes to be accurately cast.” FLA. STAT. § 101.031(2). In the election challenged here, Sarasota County election officials failed to deliver on that promise. Indeed, the failure to count the votes of the thousands of Sarasota County voters who went to the polls and cast votes in the Thirteenth District race is a miscarriage of the electoral process that can — *and must* — be remedied. These citizens should not forfeit their constitutional right to vote because the County’s paperless electronic voting machines malfunctioned. Yet disenfranchisement is exactly what will happen unless the Florida Election Canvassing Commission’s certification is declared null and void.

4. On behalf of herself and the thousands of her fellow Florida citizens facing such disenfranchisement, Contestant Christine Jennings therefore claims the right to this congressional seat and seeks appropriate relief under the Federal Contested Elections Act. It is critically important that the United States House of Representatives — exercising its constitutional authority to “Judge . . . the Elections, Returns and Qualifications of its own Members,” U.S. CONST. art. I, § 5, cl. 1 — provide that relief promptly, by resolving that (a) there has been no valid election for the Representative in the One Hundred Tenth Congress from Florida’s Thirteenth Congressional District, (b) Contestee Vern Buchanan is not entitled to a seat as a Representative in the One Hundred Tenth Congress, and (c) the Governor of the State of Florida should be notified that the office is vacant, so that he can issue a Writ of Election to fill

the vacancy pursuant to Article I, Section 2, clause 4 of the United States Constitution and Chapter 100 of the Florida Statutes.

5. These remedies are exceptional, but they are by no means novel or precedent-setting. The House has never hesitated to grant the exact remedies requested by Contestant Jennings when circumstances warrant such relief. In contested-election cases, the House has found the contestant to be entitled to the seat on 128 occasions. And the election has been voided, and the seat vacated, in another 66 cases. *See, e.g.,* 78 CONG. REC. 1510-21 (1934) (agreeing to House Resolution 231, which provided that there had been no valid election, that the state-certified winner was not entitled to a seat, and that the Speaker of the House should notify the governor of the vacancy). Likewise, Florida law provides for analogous remedies. *See, e.g.,* FLA. STAT. § 102.1682(1) (providing for entry of a “judgment of ouster” against the contestee); *Craig v. Wallace*, 2 FLA. L. WEEKLY SUPP. 517a (2d Jud. Cir., Leon County 1994) (setting aside election results and requiring a new election for state representative because irregularities prevented votes from being properly cast on three Votomatic machines).

6. The current election result in Florida’s Thirteenth District cannot stand. The voters of the Thirteenth District — all of the voters, including those disenfranchised by machine failure — should decide the outcome, and the proper remedy is therefore to hold a new election in the district as promptly as possible. The resolution that Contestant Jennings requests here will ensure that the will of the people of Florida’s Thirteenth Congressional District is respected, and will restore the confidence of the electorate, which has been badly fractured by this machine-induced debacle.

Grounds for Contesting the Election

7. On November 7, 2006 (“Election Day”), the State of Florida conducted an election for numerous offices, including Representatives in Congress. Early voting and voting by absentee ballot were permitted for this election (as for all elections in Florida).

8. Both for early voting (from October 23 to November 5) and for Election Day voting (on November 7), Sarasota County made use of an electronic voting system, called the “iVotronic” touch-screen voting system, manufactured by Election Systems & Software, Inc. (“ES&S”), a privately held corporation. Sarasota County does not use the iVotronic electronic voting system (or any other electronic voting machines) for absentee balloting. For absentee balloting, Sarasota County uses paper ballots read by optical-scanning equipment.

9. The first unofficial results reported on November 8, 2006 for the Thirteenth District congressional race showed that in Sarasota County, there were 58,534 votes for Buchanan, 65,367 votes for Jennings, and 18,383 undervotes. The term “undervote” describes a situation in which a voter cast ballots for other candidates or ballot measures but did not register a vote for the particular office. *See* FLA. STAT. § 97.021(37).

10. On November 13, 2006, the Elections Canvassing Commission ordered a machine recount for the race pursuant to Section 102.141(6), Florida Statutes, because the difference in votes recorded for Buchanan and for Jennings was less than one half of one percent of the total votes recorded district-wide.

11. On November 15, 2006, the Honorable Sue M. Cobb, Florida Secretary of State, released the results of the machine recount and ordered a mandatory manual recount pursuant to Section 102.166(1), Florida Statutes, because the difference in votes cast for Buchanan and for Jennings was less than one fourth of one percent district-wide.

12. As anticipated, neither the machine recount nor the manual recount altered the number of congressional undervotes recorded on the iVotronic system in Sarasota County because merely “recounting” electronic ballots, unlike paper ballots (or absentee, overseas, or provisional votes), is inevitably a meaningless exercise. The machine “recount” consists merely of comparing the counters on the precinct tabulators with the overall election returns, and the manual “recount” consists simply of printing out the ballot-image reports from the malfunctioning iVotronic system and counting by hand the ballot images that recorded no choice for the particular race in question. *See* FLA. STAT. §§ 102.141(6)(b), 102.166; FLA. ADMIN. CODE Rule 1S-2.031.

13. By November 18, 2006, county canvassing boards in the three counties wholly contained in Florida’s Thirteenth Congressional District (DeSoto, Hardee, and Sarasota) and the two counties partly contained in the district (Charlotte and Manatee) had officially certified their election results and filed them with Florida’s Division of Elections. On November 20, 2006, Florida’s Elections Canvassing Commission, having compiled the official results from those five counties, certified the election returns and declared that Contestee Buchanan had been elected to Congress.

14. The official results from the five counties were as follows:

	<u>Buchanan</u>	<u>Jennings</u>
Charlotte:	4,460	4,277
DeSoto:	3,471	3,058
Hardee:	2,629	1,686
Manatee:	50,117	44,432
Sarasota:	58,632	65,487
TOTAL:	119,309	118,940

15. As required by state law, the official returns from the five counties also reported undervotes, which exhibited a sharply aberrant total for Sarasota County:

<u>Undervote</u>	
Charlotte:	225
DeSoto:	142
Hardee:	265
Manatee:	2,324
Sarasota:	18,412
TOTAL:	21,368

16. Sarasota County, the one county carried by Jennings, accounted for barely half of the congressional candidates' recorded votes district-wide, but fully 86% of the district's congressional undervotes:

	<u>Buchanan</u>	<u>Jennings</u>	<u>Undervote</u>
Sarasota County:	58,632	65,487	18,412
The Four Other Counties:	60,677	53,453	2,956
TOTAL:	119,309	118,940	21,368

17. The undervote total for the congressional race in Sarasota County is extremely abnormal in numerous respects, including the following:

a. A total of 88,927 ballots were cast in this race on Election Day in Sarasota County on the electronic voting machines. Jennings received 39,930 votes and Buchanan received 36,619 votes. There were 12,378 undervotes. The undervote rate on Election Day in Sarasota County was therefore an extraordinary 13.9% of the ballots cast on the electronic voting machines.

b. A total of 30,832 ballots were cast during the early-voting process in Sarasota County, on the same type of electronic voting machines. Jennings received 14,509 votes, and Buchanan received 10,890 votes. There were 5,433 undervotes. The undervote rate

in the early-voting process in Sarasota County was therefore an extraordinary 17.6% of the ballots cast. And the combined undervote percentage for early and Election Day voting on the electronic voting machines was an equally extraordinary 14.9%.

c. In vivid contrast, of the 22,613 votes cast in this race by paper absentee ballot in Sarasota County (which were recorded by optical-scanning devices, not by electronic voting machines), Jennings received 10,981 votes, and Buchanan received 11,065 votes, and there were just 566 undervotes recorded — an undervote rate of only 2.5%, which is consistent with historical norms and expectations.

d. In equally vivid contrast, the percentage of undervotes for the House of Representatives race in other counties within the Thirteenth District did not remotely approach the undervote rates for the electronic voting machines in Sarasota County. The undervote rate for this race was 2.5% in Charlotte County, 2.1% in DeSoto County, 5.8% in Hardee County, and 2.4% in Manatee County. The combined undervote percentage for these four counties was only 2.5% — one-sixth the undervote percentage recorded in Sarasota County for votes cast on electronic voting machines.

e. In addition, the undervote percentage recorded in Sarasota County for other high-profile races is a small fraction of the 14.9% undervote rate on electronic voting machines for the congressional race. For example, the undervote percentage recorded in Sarasota County for the Governor's race was 1.3% and the undervote percentage for the United States Senator's race was 1.1%.

f. Finally, the percentage of undervotes on electronic voting machines for the congressional contest in Sarasota County in 2006 is almost seven times the rate of undervotes

for the Thirteenth District congressional race in 2002 (the last midterm election), which was 2.2%.

18. In 2001, Sarasota County became the first county in the State of Florida to purchase the iVotronic voting system. The system has been used since 2001 in at least 19 separate primary, general, and local elections. In the 2006 election, Sarasota County voters were asked whether to adopt a proposed county-charter amendment requiring that as of January 1, 2008, all county voting systems provide a voter-verified paper ballot and that mandatory independent audits of election results be conducted in every election comparing hand counts to machine counts. The county adopted the proposed charter amendment with the support of 55.4% of voters, indicating that voters themselves have lost confidence that the iVotronic system is capable of correctly recording their votes. Significantly, the undervote rate for this proposed charter amendment was only 6.2%.

19. The statistical evidence alone indicates that the staggeringly large number of undervotes in Sarasota County is due to the malfunctioning of the iVotronic electronic voting machines. In fact, preliminary expert statistical analysis of the reported election results concludes there is little doubt that the use of the iVotronic machines in Sarasota County caused the extraordinarily high rate of undervotes in that county. The fact that undervote rates from the rest of the district and from absentee voters in Sarasota County were so much lower than rates from voters using the iVotronic machines in Sarasota County rules out the possibility that the extraordinarily high Sarasota County electronic undervote rate was caused by factors common throughout the district — such as voter abstention due to negative campaigning or dissatisfaction with both candidates. Evidence that such alternative explanations were causing high undervote rates would have shown up throughout the district, not in a single county, and not just on one

type of voting machine in that county. Additionally, the fact that a higher undervote rate was present on identical electronic voting machines in two different modes of voting that occurred at different times — early voting (from October 23 to November 5) and Election Day voting (on November 7) — creates an overwhelming likelihood that the problems pertain to the use of these electronic machines in Sarasota County.

20. Compared to the malfunctions of the electronic voting machines, data available thus far suggests that poor ballot design is a less likely explanation for the undervotes of this magnitude. The most egregious examples of voter confusion caused by ballot design in other races have not yielded undervote percentages remotely as high as those present in the Thirteenth District congressional race. For example, with the infamous “butterfly ballot” used in Palm Beach County, Florida in the 2000 presidential race, fewer than 1% of the voters erroneously cast their ballots for the third-party candidate Pat Buchanan, and 4% of the voters erroneously cast “overvotes” by selecting two or more candidates. If the ballot design here is in fact capable of disenfranchising nearly 15% of the electorate, that alone merits close attention from this House.

21. The poor ballot design’s most likely role here was as a contributing factor that helped to trigger a software “bug” in the machines. Page 2 of the Sarasota County iVotronic ballots contained *both* the two-candidate race for Representative in Congress and the seven-candidate race for Governor — nine ballot lines in total. No other page of Sarasota County’s electronic ballot crammed so many candidates onto a single screen. Similarly, Page 3 of Charlotte County’s iVotronic ballots contained both the seven-candidate gubernatorial field and the two-candidate race for Attorney General. And, just as in Sarasota County, this design triggered a bizarre undervote pattern, with a 0.8% undervote rate in the gubernatorial election

and an extraordinary 24.7% undervote rate in the Attorney General election that was on the same screen. (In Sarasota County, the equivalent undervote figures for the two contests compressed onto one page were 1.3% and 14.9%.) In other counties around Florida, iVotronic ballot screens showing nine candidates exhibited a similar pattern, with low undervote rates in the multi-candidate gubernatorial election and peculiarly high undervote rates in the two-candidate election that shared the same screen.

22. Some have theorized that this ballot design confused voters — especially “straight-ticket” voters who may have skimmed rapidly through the ballot, looking only for candidates from one political party. If this is true, the magnitude of the undervote that this problem caused is still startling. But based on the data available to date, it appears a less likely explanation for the undervote than the machine malfunction itself. According to this theory, the “confused voter” (a) selected his party’s gubernatorial candidate while overlooking the other contest on the same screen, (b) then moved quickly on to the next screen, and (c) at the end of the voting process, when faced with the “Summary Ballot” review screen, ignored the warning that stated in red letters, “No Selection Made” for “U.S. Representative in Congress.” Only the most egregious ballot-design flaw would have so confused the intelligent voters of Sarasota and Charlotte Counties. And it is important to note that the pattern of low undervote rates in the gubernatorial contest and extraordinarily high undervote rates in the two-candidate contest displayed on the same screen held true regardless of whether the two-candidate contest appeared on the screen immediately above the gubernatorial field (as in Sarasota County) or immediately below the gubernatorial field (as in Charlotte and other counties). That the undervote rate was not at least somewhat elevated for *both* offices suggests that this is (based on current data) a less likely explanation than the machine flaw; were ballot design the sole cause, one would not

expect the undervote rate to be elevated solely for the top-of-the-screen contest in Sarasota County and for the bottom-of-the-screen contest in the other counties. Indeed, implicit in the “confused voter” theory is the notion that Sarasota County voters read ballot screens from the *bottom up* while voters in Charlotte and the other counties read ballot screens from the *top down*, so that, in either case, the “confused” voters spotted their preferred gubernatorial candidate first, and then quickly moved on to the next screen, inadvertently bypassing the other contest (the top-of-the-screen congressional race in Sarasota, the bottom-of-the-screen Attorney General’s race elsewhere). While no empirical support has been found for this notion, evidence that it could have caused such unusually high undervotes would be extremely troubling. Regardless, the pattern of undervotes, combined with the actual ballot designs used in the various Florida counties, suggests that an error or irregularity in the machines’ source code tends to convert into undervotes some of the votes actually cast for candidates in the two-candidate field, whenever that field shares a screen with too many other ballot lines. Like any computer-based system, an electronic voting touch-screen is most likely to malfunction when filled to capacity.

23. As powerful as all the statistical evidence is, it is far from the only indication that thousands of votes in Sarasota County simply were left out of the certified election results for the congressional race because of the failure of paperless electronic voting machines. A variety of contemporaneous sources document widespread problems with the iVotronic electronic voting system in Sarasota County. These documents, including both the statements of voters and contemporaneous records maintained by the Sarasota County Supervisor of Elections, identify a consistent pattern of voter difficulty in having votes recorded in the House of Representatives race — and not in other races on the ballot.

24. Contestant has obtained affidavits memorializing the eyewitness accounts of hundreds of Sarasota County voters attesting to their difficulties attempting to cast a vote for Christine Jennings in early voting and on Election Day on the iVotronic electronic voting system in Sarasota County. The following statements are representative of the memorialized eyewitness accounts of these hundreds of voters:

- “I went through the ballot making my selections on the iVotronics touch screen voting machine and took my time making sure that I voted in every race. I am certain that I cast a vote for Christine Jennings. When I reviewed the ballot at the end of the voting process, I noted that the race for the 13th congressional district . . . indicated that I had made no selection. I double-touched the 13th Congressional District race and again cast my vote for Christine Jennings. . . . I have more than 15 years experience in selling computer systems, five of those years are in selling touch screen systems. Based on my experience, I believe there was a software bug in the voting machine software causing the software not to register the touch.”
- “I took a sample ballot, which I had previously filled out and my intention to vote in every race. I believed that I voted for Christine Jennings but I came to the review screen it said I had not cast a vote in the Congressional race. . . . I used the back arrow and it took me back to Congressional race and I recorded a vote for Christine Jennings.”
- “When my husband and I voted on the iVotronics touch screen voting machines, I was told by a poll worker to be sure and check the District 13

Congressional race because several voters, even at that early hour, had complained that they had voted for Christine Jennings, but the summary page did not reflect their votes for Christine Jennings.”

- “When I voted on the iVotronics touch screen voting machine I touched the screen for Christine Jennings and it showed I voted for Christine Jennings. But when I reviewed the summary page at the end of the ballot, it did not show a vote for Christine Jennings or anyone else.”
- “There was no warning or mention of any problems however, I was aware there may be a problem with the Congressional vote based on various media reports. I went through the ballot and specifically remember voting for Christine Jennings. When I arrived at the review screen, there was no candidate selected for the Congressional vote. I called a poll worker over and explained the situation and she told me that I did not ‘press hard enough’ when selecting the vote and I then returned to the vote screen and recast my ballot, I then confirmed it on the review screen.”
- “When I voted on the touch screen voting machine I touched the screen voting for Christine Jennings and when I reached page 15, the summary page, it indicated that I had not voted for Jennings. I immediately called this to the attention of a poll worker who showed me how to go back and vote for Jennings. I followed her instructions and again voted for Jennings. It did appear on the summary screen this time and I hope was duly registered.”

- “When I voted on the iVotronics touch screen voting machine I touched screen and voted for Christine Jennings for U.S. Congress Florida District 13. When I reviewed my ballot before hitting the red button and actually voting, I saw the review screen did not show a vote for Christine Jennings. I was afraid I would lose my other votes if I tried to go back and correct the problem, so I then went ahead and cast my ballot without confirming that the machine had registered my vote for Christine Jennings.”
- “I attempted to vote for Christine Jennings in the District 13 race and experienced the following difficulties: I was well-aware of the difficulties in the early voting in District 13 race and so I carefully voted in each election on the ballot, including that race. When I got to the review page, my vote for Christine Jennings was not reflected. I called out to a poll worker to alert them that my vote in the District 13 race had not been recorded. The poll worker who came to assist me informed me that the same thing had happened to her when she had voted earlier. She guided me back to the District 13 page and I pressed the touch screen again to reflect my vote for Christine Jennings. The poll worker then guided me back to the review page where my vote in the District 13 race was reflected and I then pressed the vote button.”
- “When I voted on the iVotronics touch screen voting machine, I went through the ballot to vote. I was being careful because I seemed to have to press hard for my votes to register. In addition, I knew to be careful because my wife had been to vote previously and had overheard some

women who had a problem voting discussing their problems with the machines. They were different machines. A neighbor also told me that she had encountered six different people who had a problem with the voting machines. When the review sheet came up it said that I had not voted in the Congressional race even though I knew I had voted for Christine Jennings. I went back and registered my vote again and this time it indicated that I had voted for Ms. Jennings on the review screen.”

- “When I voted with the stylus on the iVotronics touch screen voting machine, I am absolutely sure the box for Christine Jennings showed the X. On the Review screen, however, Christine Jennings’ name showed but the box beside her name was blank. I clicked on the review ballot and corrected my vote and it then showed an X beside her name. After that, I registered my vote with the Red button at the top of the screen. After voting, I asked my husband if anything unusual happened when he voted (on a different machine). He told me that when he reviewed his ballot, the box by Christine Jennings’ name was blank and he had to correct it. At that time, I reported this to a poll worker named Charlie, who said he would report it.”
- “I had heard prior to going to the poll that there were problems with the voting machines. When I went to vote, the poll worker also warned me that there had been problems with the machine registering the Congressional race. When I voted on the iVotronics touch screen voting machine, I voted for Christine Jennings. The screen indicated I had voted.

Yet when I got to the end, the review page indicated that I had not voted in the Congressional race. I went back and voted for Ms. Jennings. This time my vote did register on the voting page.”

- “When I voted on the iVotronics machine I was being very methodical. When I voted in the Buchanan-Jennings race, I specifically voted for Christine Jennings and checked to make sure that the box was checked before I went to the next page. When I got to the review screen it reflected no vote was cast for the Congressional race, but both candidates’ names were shown. All of my other selections were properly recorded. I touched where it said no vote had been cast and it took me back to the Buchanan-Jennings race. I then re-voted for Christine Jennings and carefully rechecked the review page three times. I then pushed the vote button. No report was made to the poll worker. Prior to voting, the poll worker recommended that I check the review page before casting my final ballot. I am a registered Republican and I believe these machines failed democracy.”
- “I voted on the iVotronics machine I took my time to be sure I did not make any errors. When I voted in the Buchanan-Jennings race, I specifically voted for Christine Jennings and checked to make sure the box was checked before I went to the next page. When I got to the review screen it reflected no vote was cast for the Congressional race. All of my other selections were properly recorded. I touched where it said no vote

had been cast and it took me back to the Buchanan-Jennings race. I then re-voted for Christine Jennings and I then pushed the vote button.”

- “When I voted on the iVotronics touch screen voting machine I touched the screen for Christine Jennings and it showed I voted for Christine Jennings. But when I reviewed the summary page at the end of the ballot, it not only failed to show a vote for Christine Jennings, but the only name to appear on the review page was Christine Jennings, next to a blank box indicating no vote had been cast. I called a poll worker over and explained what had happened and the poll worker pulled back the page for the Congressional race. I re-voted for Christine Jennings, and my vote appeared to register in my second review of the summary screen.”
- “When I voted on the touch screen voting machine I encountered two problems with the machine. First, after I had voted for Christine Jennings on the top of the second screen, when I pushed my selection for Jim Davis for Florida Governor next, the ‘X’ on the computer screen came up indicating that I had voted for Charlie Crist. I called a poll worker, advised her of the problem and she showed me how to change my vote to Jim Davis. I then proceeded to vote on every race I saw on the ballot. When I got to the review screen, it showed Christine Jennings name, but unlike all the other names and races on the review screen, there was no X in the box next to Christine Jennings’ name. I am certain that I had initially cast a vote for Christine Jennings as my two main purposes in voting were to vote for Christine Jennings for Congress and Jim Davis for

Florida Governor. I again called a poll worker who told me to hold my finger down on the box next to Christine Jennings name on the review screen until the X came up. I did so and then pushed the 'Vote' button."

- "When I arrived at the polls I was warned by a poll worker that some votes from 'page 2' were not being registered. I waited on line for 45 minutes to vote and when I returned home, informed my wife of what I had been warned."
- "I had heard earlier media reports and was aware that there were some problems with the machines. When I arrived, I specifically asked if there had been problems and I was told no issue or problems had arisen. I voted for Christine Jennings on a touch screen and when I arrived at the review page the Congressional vote was left blank. I called a poll worker over at that time and she showed me how to move back and I re-cast my vote for Christine Jennings. On the final review page, I confirmed my vote was cast. I approached a poll worker to complain about the situation and filled out a complaint card."

25. Poll watchers also reported their observations of widespread occurrences of voters being unable to get their votes in the congressional race properly recorded by the iVotronic electronic voting machines. One poll watcher reported as follows: "There were seven iVotronics touch screen voting machines at the precinct where I was watching the voters. Two of the iVotronics touch screen voting machines stopped working while I was watching the voters. After an hour or so, one was repaired and put back into service. The other was put back

into use without repair except that the poll workers instructed voters to hold their finger on the touch screen for more time, rather than just touch [the] screen to get the vote to register. I heard several voters tell poll workers the iVotronics touch screen voting machine was not recording their vote.”

26. Contemporaneous official “Incident Report Forms” of the Sarasota County Supervisor of Elections likewise document widespread occurrences of voters having great difficulty in getting the iVotronic electronic voting machines to record their votes in the Thirteenth District race. Numerous such forms noted that iVotronic electronic voting machines were “not recording votes.” One report from a particular precinct noted that a “voter voted on screen — didn’t show up on review . . . asked poll worker for help . . . [c]ancelled ballot and moved to another machine,” and went on to observe “more than one [voter] with trouble on machine.” Another incident report observed that “[c]very other voter is complaining about the Christine Jennings contest not coming up.” Indeed, these incident reports document multiple instances of frustrated voters telling election officials at the polling places that “voting machine[s] would not let her vote for Jennings.”

27. Other contemporaneous official forms maintained by the Sarasota County Supervisor of Elections similarly document that iVotronic electronic voting machines used in the county were not recording the votes that voters had cast. Machines were taken out of service on Election Day because they were “slow to respond to touch” or “required a hard/extended touch before [a] vote was recognized,” or because they were “not recording some votes [and] the touchscreen was not working properly — hard to record vote, needed to push hard and juggle to record vote,” or because they were “not accepting votes.” Technical-support personnel reported receiving “several complaints that voters make selections that do not appear on the summary

screen” and that “the selection has to be highlighted . . . two or three times before the summary page reflected the suggestions.” Other reports indicate that “voters reported making a selection but the selection did not appear on the review screen,” requiring further corrective action by the voter, and that particular machines “miss[] selections on some pages.” One report by a Sarasota County technical-support person indicated that a particular electronic voting machine “will not register votes no matter how hard you press screen.”

28. Significantly, the records of the Sarasota County Supervisor of Elections document that election officials were on clear notice, as a result of the extreme difficulties many voters encountered during the early-voting phase, that the iVotronic electronic voting machines were malfunctioning with respect to the Thirteenth District congressional race. Nevertheless, the County election officials do not appear to have taken *any* steps to correct the serious machine problems in advance of Election Day.

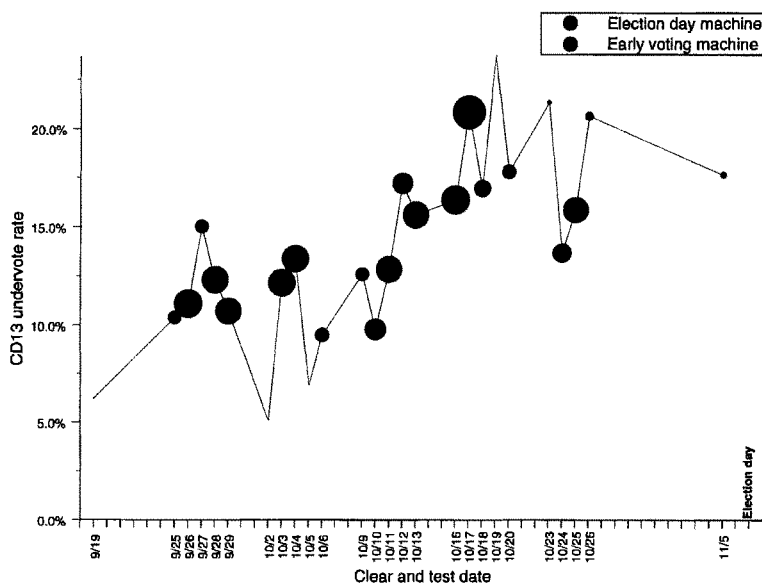
29. The eyewitness accounts of the voters, poll watchers, and election workers documented here, as well as hundreds of others like them, attest to pervasive difficulties in the recording of votes in the Thirteenth District congressional race. Although many voters believed that they were able eventually to overcome the machine difficulties and cast a recorded vote for Contestant Christine Jennings, the problems the iVotronic system exhibited in recording the votes of these and thousands of other voters provide substantial grounds for doubting whether the votes were in fact counted. The information voters see on the touch-screen of an electronic voting machine when they cast their votes is stored in the machine’s temporary, volatile computer memory. A permanent record of a vote is made only when — upon pressing the red “Vote” button above the screen — the voter’s recorded preference is transferred from the computer’s temporary volatile memory to its permanent nonvolatile memory. If, as the statistical

evidence suggests is overwhelmingly likely, a software “bug” or other malfunction disrupts or prevents the transfer of the recorded vote from temporary to permanent memory, the voter may well see a vote cast for Jennings on his or her review screen even though no permanent record of the vote is ever recorded.

30. The probability of machine error finds support in a statistical analysis conducted by Professor Charles Stewart III, the chair of the Political Science Department at the Massachusetts Institute of Technology (MIT). Professor Stewart’s analysis indicates that the date when an iVotronic machine was “cleared and tested” by Sarasota County election workers or their contractors (as reflected by “Event Code 01” in the machine’s audit log) correlates strongly with the machine’s undervote rate: The machines prepared in the final days before the deadline for completing all such preparations exhibited the highest congressional undervote rates. And another strong correlation exists between the number of machines “cleared and tested” on a given date and the undervote rate: As the County’s staff or consultants got busier, clearing and testing more machines on a single day, the congressional undervote rate climbed.

31. The following graph demonstrates these facts. It shows the undervote rates for the iVotronic machines that were prepared on each date leading up to the election. The area of each data “bubble” is proportional to the number of machines prepared that day, so a large circle indicates a busy day of machine preparation. Dark bubbles are days when Election Day machines were primarily prepared; light bubbles are days when early-voting machines were primarily prepared.

Figure 1. Undervote rate in the Thirteenth Congressional District race among machines prepared on the same day. (The area of bubbles is proportional to the number of machines prepared on that day.)



Note: One early voting machine was prepared on 10/24; two were prepared on 10/25.

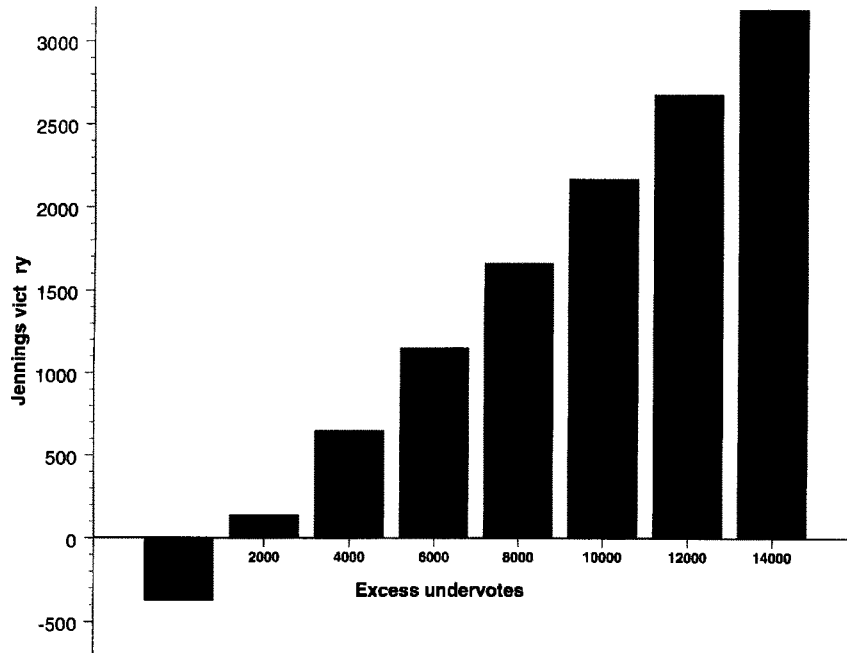
As this graph shows, the congressional undervote rates were below 7% for machines set up on only three days — September 19, October 2, and October 5, 2006. On each of those three days, the Sarasota County election workers cleared and tested only one machine. By contrast, the County's busiest day of machine preparation — October 17, 2006 — involved setting up 158 machines, and on Election Day those 158 machines generated a congressional undervote rate of nearly 21%.

32. Professor Stewart also has analyzed the effect of machine-induced failure on the outcome of the election for the Thirteenth District congressional seat. Based on his study of patterns in the undervote rates for other statewide or countywide races in Sarasota County, Professor Stewart estimated that the number of “excess” undervotes caused by the use of the iVotronic machines in Sarasota County was approximately 14,000. This is a conservative estimate, as it suggests that slightly more than 3% of the Sarasota County voters intended not to vote for either congressional candidate, which is more than double the actual undervote rate found in the November 2006 race for U.S. Senator or Governor. Professor Stewart’s estimate was corroborated by the expert for the iVotronic machines’ manufacturer, who wrote that he was “90 percent confident that *between 14,322 and 14,896 voters in Sarasota County were suppressed from voting in the thirteenth district race*” (emphasis in original).

33. Using the ballot-image logs for every individual ballot cast electronically in the Sarasota County November 2006 general election — and studying voters’ preferences not only for the congressional race but also for the statewide races for U.S. Senator, Governor, Attorney General, Chief Financial Officer, and Agriculture Commissioner — Professor Stewart determined that the voters whose congressional ballots were recorded as undervotes likely supported Contestant Jennings over Contestee Buchanan by a margin of approximately 63% to 37%. So if the 14,000 “excess” congressional undervotes had actually been recorded and properly tallied as votes for one or the other congressional candidate, Contestant Jennings would have won the election by more than 3,000 votes. Indeed, even if machine malfunction caused only 1,500 “excess” undervotes — less than 10% of the total congressional undervotes reported in Sarasota County — properly tabulating those 1,500 congressional ballots would have reversed the outcome of the election, with Contestant Jennings prevailing over Contestee Buchanan.

34. The following bar graph shows the projected results, for various levels of excess undervote, beginning with zero and working in 2,000-vote increments up to 14,000. The graph shows the estimated victory margin for Jennings, given different values of excess undervotes. The very first bar, which shows zero excess undervotes, is the situation under the official certification, which declared Buchanan the victor by 369 votes.

Figure 2. Estimated size of Jennings victory, with the allocation of different numbers of excess undervotes.



State Court Litigation

35. On November 20, 2006, Contestant Christine Jennings filed a complaint under Florida's election-contest statute, Section 102.168, Florida Statutes, in the Circuit Court of the Second Judicial Circuit, in Leon County, Florida. On November 28, 2006, Contestant's case was consolidated with a second election-contest action brought by a bipartisan group of eleven individual voters represented by counsel from four public-interest groups. The defendants in these consolidated suits include Florida's Elections Canvassing Commission, the Secretary of State, the Director of Florida's Division of Elections, the Sarasota County Supervisor of Elections, the Sarasota County Canvassing Board, congressional candidate Vern Buchanan, and Election Systems & Software, Inc. ("ES&S"), the manufacturer of the iVotronic voting system.

36. In the trial-court proceedings Contestant and the voter plaintiffs have requested expedited discovery of materials necessary to establish that thousands of undervotes were caused by machine malfunctions in the iVotronic voting system. Determining the precise cause of the irregularities requires that all parties — including *both* candidates — be allowed to inspect and test a sample of iVotronic machines and related equipment, and especially the ES&S source code and other software, all of which are in the possession of the defendants in the state-court action.

37. Thus far, the state and county election officials who are defendants in that action have invoked the trade-secret privilege to protect the business interests of ES&S and have resisted production of the materials requested by Contestant and the voter plaintiffs, thereby denying them the critical evidence they need to determine conclusively the cause of the pervasive malfunctioning of the iVotronic voting system in this election. On December 19 and 20, 2006, the court held an evidentiary hearing on whether Jennings and the voter plaintiffs have a "reasonable necessity" for production of the software and hardware that ES&S purports are

privileged as “trade secrets.” To expedite matters, Jennings took the extraordinary step of moving for a protective order to assuage any concerns ES&S might have about its purported trade secrets being disclosed to persons uninvolved with the litigation, including any of ES&S’s commercial competitors. The trial court has not yet ruled on Jennings’s and the voter plaintiffs’ motions to compel production of the software and hardware.

38. Throughout the state-court litigation, Contestant Jennings has gone to great lengths to ensure the speedy resolution of the election contest. For example, on the very day she filed her state-court complaint, she also filed a motion to compel expedited discovery of the iVotronic hardware and software; but that motion was denied. Another example was the December 7 filing by Jennings and the voter plaintiffs of a joint notice setting a case-management conference and requesting prompt entry of a scheduling order consistent with a late-January trial date.

39. Throughout the litigation, the state and county election officials defending the action have pursued a two-pronged strategy: (1) deny plaintiffs access to the software and hardware whose malfunction lies at the very core of the case; and (2) always blame the “confused” voters and absolve the machines. Emblematic of the second prong of that strategy are the interrogatories that the state defendants propounded on December 15, 2006 to each of the individual voter plaintiffs, apparently in response to their complaint, which described their difficulties on Election Day with the iVotronic machines:

[Interrogatory No.] 15. Do you wear glasses, contact lenses, or hearing aids? If so, who prescribed them, when were they prescribed, when were your eyes or ears last examined, and what is the name and address of the examiner?

[Interrogatory No.] 16. Did you consume any alcoholic beverages or take any drugs (prescribed or not) or medications within 12 hours before the time you voted in the November 2006 general election? If so, state the type and amount of

alcoholic beverages, drugs (prescribed or not), or medication which were consumed, and when and where you consumed them.

Conclusion

40. As a result of the failure of the iVotronic electronic voting system to record all votes in the Thirteenth District congressional race in Sarasota County, thousands of votes cast in that race were not included in the vote totals certified by Florida's Elections Canvassing Commission on November 20, 2006. Statistical analysis demonstrates that including those votes in the certified totals would have reversed the election's outcome, putting Contestant Jennings more than 3,000 votes ahead of Contestee Buchanan. Contestant Jennings thus is entitled to the seat of Representative in the One Hundred Tenth Congress from Florida's Thirteenth Congressional District.

41. Therefore, under the Federal Contested Elections Act, 2 U.S.C. §§ 381-396, Contestant Christine Jennings is entitled to prevail in this contest action and should be awarded all appropriate relief.

Prayer for Relief

Wherefore, Contestant Christine Jennings prays that the United States House of Representatives:

1. Ensure that all evidence related to the November 2006 general election in Sarasota County is preserved.
2. Ensure that both the Contestant and the Contestee have full and fair access — whether through discovery in the state-court election contest or in this proceeding — to the State of Florida's and Sarasota County's ES&S iVotronic hardware, software, and source code, as needed to uncover the true causes of the elevated undervote rate at issue here.

3. Resolve that the Florida Elections Canvassing Commission's November 20, 2006 certification of the returns for the 2006 general election for Representative in Congress from Florida's Thirteenth Congressional District is null and void.

4. Resolve that Contestant Christine Jennings is entitled to a seat as the Representative in the One Hundred Tenth Congress from Florida's Thirteenth Congressional District or, in the alternative, resolve that (a) there has been no valid election for the Representative in the One Hundred Tenth Congress from Florida's Thirteenth Congressional District, (b) Contestee Vern Buchanan is not entitled to a seat as a Representative in the One Hundred Tenth Congress, and (c) the Governor of the State of Florida should be notified that the office is vacant, so that he can issue a Writ of Election to fill the vacancy pursuant to Article I, Section 2, clause 4 of the United States Constitution and Chapter 100 of the Florida Statutes — thereby allowing the people of Florida's Thirteenth Congressional District to freely vote for Contestant Christine Jennings or Contestee Vern Buchanan and to have those votes accurately tabulated, counted, and reported.

5. Reimburse the State of Florida for half the expenses it incurs in holding a special election to fill the vacancy.

6. Pursuant to 2 U.S.C. § 396, reimburse from the applicable accounts of the House of Representatives the Contestant's and the Contestee's reasonable expenses for this contested-election case, including reasonable attorneys' fees, upon such party's verified application, accompanied by a complete and detailed account of the party's expenses and supporting vouchers and receipts.

1654

Under 2 U.S.C. § 383, Contestee must serve his Answer on Contestant within 30 days after service of this Notice of Contest.

Respectfully submitted this 20th day of December, 2006, by:

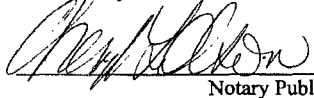

CHRISTINE JENNINGS

VERIFICATION

I swear or affirm that I am a party to this action, that I have read the foregoing Notice of Contest, and that the information stated in the Notice of Contest is true to the best of my knowledge and belief. I declare under penalty of perjury under the laws of the United States and of the State of Florida that the foregoing is true and correct.


CHRISTINE JENNINGS

Subscribed and sworn to before me
this 20th day of December, 2006.


Notary Public

10/31/2009
My Commission Expires

IN THE
United States House of Representatives

CHRISTINE JENNINGS,

Contestant,

v.

VERN BUCHANAN,

Contestee.

**CONGRESSMAN VERN BUCHANAN'S
MOTION TO DISMISS ELECTION CONTEST**

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U.S. HOUSE OF
REPRESENTATIVES

GLENN T. BURHANS, JR.
HAYDEN R. DEMPSEY
SEANN M. FRAZIER
GREENBERG TRAUIG, P.A.
101 EAST COLLEGE AVENUE
TALLAHASSEE, FLORIDA 32301
(850) 222-6891

*Counsel for Contestee
Congressman Vern Buchanan*

JANUARY 19, 2007

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PRELIMINARY STATEMENT

Christine Jennings asks the United States House of Representatives to overturn the State certified election results for Florida's 13th Congressional District based upon the assumption that legal votes were cast for her but not counted because they were "lost" due to a "pervasive malfunctioning of electronic voting machines." Notice of Contest ("Notice"), ¶ 1. This claim, a rehash of one filed by Ms. Jennings in Florida state court, is based upon nothing more than the conjecture and speculation of her experts. *Id.* at ¶¶ 31-34.

The Florida court conducted a thorough review of those experts and their opinions and concluded that the "testimony of [Jennings'] experts was nothing more than conjecture and not supported by credible evidence." The Florida court also received and evaluated evidence of the voting machines' operations, including the results of pre- and post-election testing and certification conducted by the State of Florida and Sarasota County. With respect to the pre-election testing, the Court held that "the machines now challenged were tested as required by law prior to the early voting and election day voting and were found to be working properly." Similarly, the Court held that the State's post-election "parallel testing" demonstrated "100% accuracy of the equipment in reporting the vote selections" and that Ms. Jennings presented "no evidence to demonstrate that parallel testing was flawed and/or the test not valid." Those independent judicial findings bear significant relevance in revealing the lack of merit of Ms. Jennings' claim here.

In pursuing this election contest, Ms. Jennings asks the House of Representatives to:

- (1) Ignore the governmentally mandated testing and certification that the election machines at issue here ["iVotronic System"] passed before being sold for use in elections;

- (2) Disregard the public logic and accuracy testing that was successfully passed by the iVotronic System as mandated by Florida law before it was deployed for use in the election;
- (3) Frustrate the will of more than 238,000 voters who voted in the 2006 general election and whose intent is clearly and convincingly demonstrated on the ballots they cast;
- (4) Dismiss the two mandatory recounts of the election results performed by duly authorized public officers pursuant to Florida law;
- (5) Reject the State of Florida's lawful certification of Vern Buchanan as winner of the 13th Congressional District election;
- (6) Overlook the fact that Ms. Jennings' own experts readily admit that they:
(i) have no evidence of malfunction; (ii) cannot determine voter intent; and (iii) cannot determine the number - if any - of legal votes cast for Ms. Jennings that were not counted in the State's certified election returns; and
- (7) Repudiate the State of Florida's post-election testing which concluded that: (i) the machines "demonstrat[ed] 100% accuracy in recording the vote selections as indicated on the review screens;" and (ii) "there is no evidence to support the position that the iVotronic touchscreens caused votes to be lost."

As the basis for this stunning exercise in disbelief, Ms. Jennings cites to only one concrete fact -- an apparently large number of undervotes in the 13th Congressional District election in Sarasota County. Ms. Jennings does not provide, as she must, evidence: (i) that the intent of any single voter was frustrated; (ii) that any individual voter was unable to cast a legal

vote for her; or (iii) that a single legal vote was cast for her but not counted. Instead, Ms Jennings points to an apparent anomaly that, she claims, *might* indicate the presence of a machine malfunction that *could* have changed the result of the election. The staggering lack of any evidentiary support for such a claim demonstrates that Ms. Jennings cannot meet the extraordinarily high burden required to proceed with this Contest, let alone undo the certified election.

Accordingly, Congressman Vern Buchanan moves to dismiss this election contest filed pursuant to the Federal Contested Elections Act, 2 U.S.C. § 383(b)(3) and (4) ["FCEA"] because Ms. Jennings has failed to state grounds sufficient to change the result of the election and has failed to state a credible claim of a right to the 13th Congressional District Seat. As demonstrated below, this Contest must be dismissed.

SUMMARY OF ARGUMENT

This Contest is governed by the following numerous immutable principles that mandate dismissal. Congressman Buchanan was certified by the State of Florida as the winner of 13th Congressional District election. That certification constitutes *prima facie* evidence that the election was conducted correctly and must be afforded a strong presumption of legality and correctness. Election results prepared by election officials appointed under the laws of the state where the election was held are presumed to be correct until they are impeached by proof of fraud or irregularity.

The House of Representatives has consistently stated that it will follow state laws and decisions of state courts unless those laws or decisions are shown to be unsound. This deference applies with equal vigor to statutes, rulings concerning particular issues of ballot interpretation, and the final determination of the winner of an election, as well as to the official actions of state

presumed to be correct and that errors rebutting this presumption must be proven, not assumed. Similarly, bare allegations of voting machine malfunction or error are similarly insufficient to survive dismissal.

The standards set forth above have long been recognized and applied by the House of Representatives and remain as valid today as when they were first established. Applying these standards to the FCEA, the Notice of Contest must be dismissed on two statutory grounds: (i) Ms. Jennings' failure to state grounds sufficient to change the result of the election; and (ii) Ms. Jennings's failure to establish a claim of right to the Congressional seat. *See* 2 U.S.C. 383(b)(3), (4).

As detailed below, Ms. Jennings offers nothing more than statistical hypotheses that presuppose the existence of machine malfunction. Ms. Jennings's own expert readily admits that his analysis cannot determine the key dispositive issues in this case: (i) voter intent, and (ii) the number of legal votes, if any, that were cast for Ms. Jennings but not counted. An independent Florida Court has rejected the testimony of Ms. Jennings' experts as "conjecture and not supported by credible evidence." *See* App. 1. Moreover -- and in stark contrast -- there is uncontroverted evidence, detailed below, that conclusively demonstrates that the iVotronic System accurately recorded the votes cast at every phase of pre- and posting election testing and certification. *See, e.g.*, App. 2, 4, 5 and 6.

Never before has the House of Representatives has been asked to overturn a certified election on such unsubstantiated claims as those offered Ms. Jennings. The House, in almost every case since the inception since the FCEA, has dismissed contests at the pleadings stage for the failure to present credible evidentiary support. The result should be no different here. It is

elections officers. Here, Florida law has been followed with precision at every phase (before, during and after the election) and the actions of the state participants and the certified election result must be respected.

Because of the great deference owed to state law and the acts of state officers, a contestant seeking to undo a certified election under the FCEA faces a high burden at the time of filing an election contest. In order to proceed past the pleading stage, Ms. Jennings must present credible evidence that the election result would be different or that she is entitled -- as of right -- to the seat. Unsupported, vague allegations are insufficient to sustain an election contest. Allegations without substantiating evidence are insufficient to defeat a motion to dismiss.

The burden of demonstrating credible evidence in support of an election contest rests with the contestant. When a claim is challenged by a motion to dismiss, the contestant must have presented, in the first instance, sufficient allegations of evidence to justify her claim to the seat in order to overcome the motion. The contestant has the burden of resisting the motion to dismiss *prior* to the submission of evidence and testimony; such showing must represent sufficient evidence that the election result would be different or that the contestant is entitled to the seat. In order to survive this motion, Ms. Jennings' claims must be supported by credible "substantial preliminary proof" of irregularities, fraud, or wrongdoing with respect to the conduct of the election that, if proven, would likely overturn the original election outcome. Otherwise, the contest must be dismissed. The contestant's burden, necessarily, is a high one.

Here, Ms. Jennings fails to provide any credible evidence in support of her Contest and, instead, relies upon the speculation and conjecture of her experts to conclude that a statistical allocation of "excess undervotes" would give her the Congressional seat. Statistical anomalies alone, however, cannot sustain this Contest. House precedent is clear that election returns are

clear from the evidence presented in support of this motion, as opposed to the conjecture proffered in the Notice, that this Contest must be dismissed.

BACKGROUND

I.

THE ES&S iVOTRONIC SYSTEM AT ISSUE

A. *Brief Overview of the iVotronic System and its Operations*

This election was conducted in part through the use of the iVotronic touchscreen voting system (“iVotronic System”). The iVotronic System is an electronic voting system that allows voters to cast their ballots by touching the name of their candidate of choice for any particular office, as well as their selection for any particular ballot measure. The iVotronic System allows voters to review and confirm their selections for every race and ballot measure listed on the ballot prior to casting their vote by means of a review screen or “Summary Ballot.” Depending upon the number of races and ballot measures on the ballot, there may be more than one review screen or page.¹

A vote is cast on the iVotronic System by the voter pushing the “VOTE” button at the top of the screen. The “vote” button does not become operative -- meaning the voter cannot cast a vote -- until the voter pages through every review screen. The iVotronic System does not allow overvotes (*i.e.*, making more selections for a race than allowed). The system also warns a voter of any failure to make a selection for a particular race or ballot measure by displaying the phrase “No Selection Made” in red lettering directly beneath each such office or ballot measure on the

¹ For example, the Summary Ballot appearing on the touchscreen ballots used by Sarasota County in the 2006 general election had three review screen pages. *See* App. 3.

review screen. The iVotronic System allows voters to change their selections as many times as they wish prior to casting their vote.

The iVotronic System permanently records the voter's selections in three independent but redundant memories when the voter pushes the "VOTE" button. The voter's selections are saved in a "ballot image" file. The ballot image contains the voter's selections as they appeared on the review screen at the time the voter pressed the "VOTE" button. The ballot images can be printed for verification purposes. *See, generally*, App. 18, 12/20/06 Tr. 242:3-243:24; *see also* App. 2.²

B. *Mandatory Pre-Election Testing and Certification*

Before they may be used in Florida elections, all electronic voting systems must undergo a rigorous testing and certification process.³ An electronic voting system, such as the iVotronic System, cannot be adopted, purchased nor otherwise procured, let alone used in any election, by any county in Florida unless and until it is approved by the Florida Department of State. *See* § 101.5604, Fla. Stat. (2006). Florida's Electronic Voting Systems Act ["FEVSA"] provides an extensive list of requirements that must be met in order for an electronic voting system to be

² In addition, each touchscreen machine keeps an "event" log that tracks a complete history of the machine's operation such as opening and closing for elections, maintenance, and testing, as well as the recording of votes.

³ Florida's Electronic Voting Systems Act [§§ 101.5602-101.5614, Fla. Stat.] outlawed the use of punch card type voting systems, *see* Section 101.56042, Florida Statutes, and authorized "the use of electronic and electromechanical voting systems in which votes are registered electronically or are tabulated on automatic tabulating equipment or data processing equipment." § 101.5602, Fla. Stat. The Electronic Voting System Act also created a comprehensive legislative framework governing: (i) the performance and accessibility standards for electronic voting systems used in Florida, (ii) the pre-purchase testing and certification of electronic voting systems by the Florida Department of State, (iii) additional County-based pre-election testing and verification, and (iv) the post-election canvass of returns from the electronic voting systems. *See id.* As a touchscreen system, the iVotronic System is an "electronic voting system" within the meaning of the Electronic Voting Systems Act. *See* § 101.5603(4), Fla. Stat.

certified by the Department of State for use in elections by Florida counties. *See* § 101.5506, Fla. Stat.

Florida's Department of State is charged with a statutory duty to conduct the public examination of all makes of electronic voting systems submitted to it in order to determine whether the systems comply with the requirements of FEVSA. *See* § 101.5605(1), Fla. Stat.; *see also* § 101.015, Fla. Stat. (requiring Department of State to establish voting system standards governing functional requirements, performance levels, design characteristics, documentation and evaluation criteria).⁴ After completion of the examination and upon approval of any electronic voting system, the Department of State is required to make and maintain a report on the system and "shall send notice of certification and, upon request, a copy of the report to the governing bodies of the respective counties of the state." *See* § 101.5605(3)(a), Fla. Stat. "Any voting system that does not receive the approval of the department shall not be adopted for or used at any election." *Id.*

Once approved and certified by the Department of State, counties may adopt, purchase and use electronic voting systems. Such equipment must -- upon advance public notice

⁴ The electronic voting system's vote counting segment must meet electronic industry standards; in addition, Florida law requires that:

the testing shall include, but is not limited to, testing of all software required for the voting system's operation; the ballot reader; the rote processor, especially in its logic and memory components; the digital printer; the fail-safe operations; the counting center environmental requirements; and the equipment reliability estimate. For the purpose of assisting in examining the system, the department shall employ or contract for services with at least one individual who is expert in one or more fields of data processing, mechanical engineering, and public administration

§ 101.5605(2)(a), Fla. Stat.

(including to candidates) -- undergo additional public testing before each election prior to being deployed in order “to determine that the voting system is properly programmed, the election is correctly defined on the voting system, and all of the voting system input, output, and communication devices are working properly.” *See* § 101.5612(1), Fla. Stat. This is known as a Public Logic and Accuracy Test.⁵

In accordance with Florida law, the iVotronic System underwent pre-purchase testing and was certified for use by the Department of State. *See* App. 4. Similarly, in accordance with Section 101.5612, and prior to the 2006 general election, the Sarasota County Canvassing Board, the Supervisor of Elections and members of her staff conducted a Public Logic and Accuracy Test before members of the media and general public on October 20, 2006. *See* App. 5.

Thirty-two iVotronic machines were tested by processing ballots for each ballot style and ballot position “to assure recording accuracy of the software and hardware.” *Id.* All test results matched and “it was determined that an accurate and errorless count was made.” *Id.* Upon conclusion of the Public Logic and Accuracy Test, the Sarasota Canvassing Board certified the iVotronic System for use in the November 7, 2006 general election. *See* App. 6. (“The Canvassing Board observed the Public Logic and Accuracy Test and compared the results with manually calculated/known totals for each issue. The Board verified the correctness of all totals, including the number and type of ballots cast, number of votes cast for each issue and the

⁵ If, as a result of the Public Logic and Accuracy Test, a device is found to have a single error it shall be deemed unsatisfactory for use in the election. *See* § 101.5612(4)(a)(2), Fla. Stat. In such a case, the Canvassing Board is required to identify and test other devices that could reasonably be expected to have the same error; the Canvassing Board must test a number of additional devices sufficient to determine that all devices are satisfactory. *Id.* At the completion of testing, representatives of the canvassing board, political parties and the candidates (or their representatives) in attendance shall witness the resetting and sealing of each device that passed the pre-election testing. *See* § 101.5612(4)(b), Fla. Stat.

number of undervotes and overvotes.”). The voting machines used in this election were then sealed and stored in the custody of the Sarasota Supervisor of Elections awaiting deployment for the general election. *Id.*

The machines that Ms. Jennings now claims malfunctioned during the election were first tested and certified by the Florida Department of State. The machines were then subjected to Public Logic and Accuracy Tests by local elections officials. The machines were found to be in perfect working order in every test. Thus, the proper operation of the machines at issue in this Contest were verified by all reviewing authorities before the election began.

II.

RESULTS OF THE 13TH CONGRESSIONAL DISTRICT ELECTION

The 2006 general election in Florida was conducted on November 7 and during early voting from October 26 through November 5. The 13th Congressional District includes parts of Sarasota, Manatee, Charlotte, DeSoto and Hardee Counties. On November 8, and in accordance with Florida law, the five counties within the 13th Congressional District filed their unofficial election returns with the Florida Secretary of State. *See* App. 7. The election results showed that Vern Buchanan won the 13th Congressional District race. *Id.*

Because the margin of victory was less than one-half of one percent, the State’s Election Canvassing Commission ordered the County Canvassing Boards within the 13th Congressional District to conduct a machine recount as required by Section 102.141(6), Florida Statutes. *See* App. 8. On November 13 the County Canvassing Boards began the machine recount which confirmed that Buchanan won the election. *See* App. 9.

Because the results of the machine recount showed that Buchanan won by less than one-quarter of one percent, on November 15 the Election Canvassing Commission ordered that a

manual recount of the ballots cast be conducted by the County Canvassing boards in accordance with Section 102.166, Florida Statutes.⁶ The manual recount again demonstrated that Vern Buchanan won the election. *See* App. 10.

On November 20, 2006 the State of Florida's Elections Canvassing Commission certified that Vern Buchanan received 369 more votes than Christine Jennings. App. 11.⁷

III.

THE STATE OF FLORIDA'S PARALLEL TESTING

The Secretary of State, as Florida's chief election officer and pursuant to Section 101.5607(1)(c), directed the Division of Elections staff to conduct an audit of Sarasota County's voting system and attendant procedures with regard to the 13th Congressional District race. This audit consists of a "Parallel Test" of the voting machines used by Sarasota County in the general election and a separate source code review. *See* App. 12.⁸

⁶ The procedures for a manual recount are set forth in Section 102.166, Florida Statutes, and Rule 1S-2.031, Florida Administrative Code. Those procedures, as previously promulgated on an emergency basis, were subject to challenge and were found to be constitutional. *See Wexler v. Lepore*, 342 F.Supp.2d 1097, 1109-10 (S.D. Fla. 2004), *aff'd*, 452 F.3d 1226 (11th Cir. 2006), *cert. denied*, --- S.Ct. ---, 2007 WL 36051 (Jan. 8, 2007). In counties using optical scan equipment, *i.e.*, Manatee, Desoto, and Hardee, the canvassing boards manually recounted the paper ballots. In the counties using the iVotronic touchscreen system, *i.e.*, Sarasota and Charlotte, the canvassing boards manually recounted the ballot images generated and stored when a voter casts his or her vote.

⁷ The Elections Canvassing Commission is comprised of the Governor and two members of the Cabinet, and is required, by law, to "certify the returns of the election and determine and declare who has been elected to each federal, state, and multicounty office." *See* § 102.111(1), Fla. Stat. The Elections Canvassing Commission's certificate of election "shall be prima facie evidence of the election." § 102.155, Fla. Stat.

⁸ On November 9 and 11, Secretary of State Cobb released to the public details on the Parallel Test plan. *See* App. 12. On November 12, Ms. Jennings filed a Motion for Temporary Injunction in the Circuit Court in Sarasota County to prevent the Secretary of State from conducting the proposed parallel testing. *See* App. 13. The court granted Ms. Jennings' motion

The Parallel Test was conducted on November 28 and December 1 by the members of the Department of State's Bureau of Voting Systems Certification, which was created by the Legislature to "provide technical support to the supervisors of elections and which is responsible for voting system standards and certification." § 101.017, Fla. Stat. The Parallel Test "focused on the iVotronic touchscreen's **ability to accurately record a voter's selections as presented to the voter on the touchscreen's ballot review pages.**" App. 2, p. 2 (emphasis added).⁹ The testing "also examined various complaints regarding a voter's ability or difficulty in making his or her vote selections." *Id.*

As noted by the State, "[t]he intent of this parallel activity is to **ascertain the accuracy and reliability of the deployed voting devices** with consideration given to ballot style, layout, coding, demographics, and operation." *Id.* at 3. The Parallel Test was based upon actual voting behavior and data. *See id.* at 3-9 (detailing parameters, procedures, and scripting, etc.). The tests were performed on machines with the highest undervote totals from the precincts that experienced the highest levels of undervotes and selected by the parties. *Id.* at 3. The State

in part, but ultimately ruled that the parallel testing could go forward with participation and monitoring by the candidates. *See* App. 14. On November 21, the Secretary of State announced to the public that the parallel testing would be conducted on November 28 and December 1 in Sarasota County. *See* App. 15. The Secretary subsequently published details of how the parallel tests would be conducted, including a listing of which machines would be tested and the scripts of the voting patterns for each machine. *See* App. 16. Counsel understands that the State has retained a team of independent experts that is in the process of conducting the source code review phase of the audit.

⁹ Such a focus is not only appropriate, but necessary, for two reasons: (i) "[i]t is the review screens' list of voter selections that the iVotronic records when the voter presses the "VOTE" button to cast the ballot[.]" App. 2, p. 7; and (ii) Ms. Jennings' claim "that the voting equipment may not have correctly captured the voters' selection." *Id.* at 3; *see also* Jennings Amended Complaint, ¶ 2 (claiming the machines "were systematically failing to record votes cast for the candidates in the Thirteenth District congressional race -- particularly votes cast for Plaintiff Christine Jennings.").

defined the pool for machine selection as those with highest undervote totals in order to “enhance the probability of revealing the undervote anomaly should it exist.” *Id.*

The State’s tests “were successful in demonstrating 100% accuracy in recording the vote selections as indicated on the review screens. There were no unresolved anomalies. In addition, attempts to replicate the published reports concerning voter difficulties in making or changing their vote selections did not materialize during this test.” App. 2, p. 8. The State’s analysis concluded:

This series of parallel tests demonstrated that the iVotronic touchscreens did not exhibit pervasive malfunctioning. There are no indications of machine bias or otherwise voting machine faults that would yield rejected legal votes. The claims made that votes were lost due to touchscreen malfunction are not supported by the results of this test. . . .

In summary, there is no evidence to support the position that the iVotronic touchscreens caused votes to be lost.

App. 2, pp. 8-9 (emphasis added).

The result of the post-election machine testing was the same as the pre-election testing: the voting machines recorded the votes cast with 100% accuracy.

IV.

THE STATE CONTEST AND EVIDENTIARY HEARING

On November 20, 2006, Christine Jennings filed suit in Florida circuit court (*Jennings v. Elections Canvassing Comm’n of the State of Fla., et al.*, Case No. 2006-CA-2973 (Fla. 2nd Cir. 2006)) contesting the results of the certified election pursuant to Section 102.368(3)(c), Florida Statutes (the “State Contest”). *See* App. 17. The statutory basis for Ms. Jennings’ claim in the State Contest is the “rejection of a number of legal votes sufficient to change or place in doubt

the result of the election.” *Id.* at ¶ 4 (quoting § 102.368(3)(c)). Ms. Jennings claimed that the “vote totals in the certification are wrong because they do not include thousands of legal votes that were cast in Sarasota County but not counted due to the pervasive malfunctioning of electronic voting machines.” *Id.* at ¶ 1.¹⁰ In support of this claim, Ms. Jennings cited an apparent statistical anomaly in the number of undervotes recorded in Sarasota County. *See id.* at ¶ 23 (“In fact, preliminary expert statistical analysis of the reported election results concludes there is little doubt that the use of the iVotronic machines in Sarasota County caused the extraordinarily high rate of undervotes in that county.”) (emphasis added).¹¹

Responsive pleadings were filed, and discovery has been and continues to be taken by the parties. Ms. Jennings received access to most of the material she sought through discovery in the State Contest, save certain statutorily protected trade secret materials. Ms. Jennings requested that the voting machine manufacturer reveal the source code, or software, that informs the operation of the iVotronic System. The manufacturer ES&S understandably claimed that the software is a confidential and proprietary trade secret. Before requiring disclosure of such trade secrets, the circuit judge -- pursuant to well-established Florida law -- required a showing by Ms.

¹⁰ The narrow, dispositive issue in the State Contest is whether Ms. Jennings can demonstrate the rejection of a number of legal votes sufficient to change or place in doubt the result of the election. In order to prevail in that action, “logic dictates” -- as noted by the Florida Supreme Court -- that “the contestant must establish the ‘number of legal votes which the county canvassing board failed to count.’” *Gore v. Harris*, 772 So. 2d 1243, 1253 (Fla. 2000), *rev’d on other grounds*, 531 U.S. 98 (2000). A “legal vote is one in which there is a ‘clear indication of the intent of the voter’” as reflected on the ballot. *Id.* at 1257; *see also* § 102.166(4)(a), Fla. Stat. (“A vote for a candidate or ballot measure shall be counted if there is a clear indication on the ballot that the voter has made a definite choice.”).

¹¹ The significance of the deliberate use of the phrase “the use of the iVotronic machines in Sarasota County” was made clear in the cross-examination of Ms. Jennings’ statistics expert. *See* note 13, below and accompanying text.

Jennings that the request was justified by something more than mere speculation that the machines malfunctioned.

On December 19 and 20, 2006, the state court conducted an evidentiary hearing to determine whether Ms. Jennings should be given access to the source code. *See* App. 18. The evidentiary hearing was held for the purpose of determining whether Ms. Jennings could demonstrate “reasonable necessity” to pierce the Florida statutory privilege protecting trade secrets in order to obtain access to ES&S’s proprietary source code; however, the evidence adduced bears significant relevance here. Ms. Jennings experts were called and required to explain under oath the basis for any opinions they held regarding whether the voting machines actually malfunctioned and, if so, to what degree.

Ms. Jennings relied almost exclusively upon Professor Charles Stewart III and presented his theory that the number of undervotes occurring in this election demonstrates proof that the machines malfunctioned. Professor Stewart’s sworn testimony demonstrates the lack of credible evidence underlying Ms. Jennings’ claims. Stewart first assumes that the percentage of undervotes for the contested race should have been the same as other races. If more undervotes occurred in the contested race than one would expect from all races generally then, Professor Stewart assumes, machine malfunction occurred. Professor Stewart then offered statistical hypotheses to provide a range of estimates as to how those undervotes “should” have been cast and counted. Stewart concludes, without any support, that some additional, unknown number of votes should have been cast and counted for Ms. Jennings and, if they were, Ms. Jennings would have emerged the winner based upon his statistical allocation of those votes. In the end, Stewart admitted that he cannot actually determine what that number is nor can he determine the actual intent of the voters.

The flaws in Professor Stewart's "analysis" are apparent. The Professor's assumptions leave no room for reasonable explanations as to why there may have been a greater number of undervotes in the contested election than one might have seen in other elections. Yet, under cross examination at the evidentiary hearing, Stewart conceded that factors other than a software bug-induced machine malfunction could serve as a basis for many of the undervotes. *See* App. 18, 12/19/06 Tr. 110:8-111:11. Nevertheless, Professor Stewart's opinion assumes that all undervotes above a certain "norm" -- *i.e.*, "excess undervotes" (i) are "legal votes," and (ii) represent some sort of machine malfunction. Stewart's underlying definition of "excess undervotes" was challenged and he admitted his flawed premise:

Q: And the excess undervote you defined as the amount of undervotes above the normal; correct?

A: Yes, sir.

Q: So your definition presupposes some malfunction or peculiar happening; correct?

A: **It presupposes some peculiarity associated with an election.**

App. 18, 12/19/06 Tr. 100:18-24 (emphasis added).

Professor Stewart concedes that a "legal vote," as he defines it, is one that is determined "legitimate" pursuant to applicable state law. *See* App. 18, 12/19/06 Tr. 99:20-100:7. Under Florida law, a "legal vote is one in which there is a 'clear indication of the intent of the voter'" as reflected on the ballot. *Gore v. Harris*, 772 So. 2d 1243,1257 (Fla. 2000), *rev'd on other grounds*, 531 U.S. 98 (2000); *see also* § 102.166(4)(a), Fla. Stat. ("A vote for a candidate or ballot measure shall be counted if there is a clear indication on the ballot that the voter has made a definite choice."). "'Undervote' means that the elector **does not properly designate any choice** for an office or ballot question **and the tabulator records no vote** for the office or

question.” § 97.021(37), Fla. Stat. (2006) (emphasis added). With respect to the iVotronic System, the word “undervote” on the ballot image for the effected race demonstrates a “clear indication that the voter made a definite choice to undervote” See Fla. Admin. Code R. 1S-2.031(4)2.a. Thus the excess undervotes cannot be “allocated” as legal votes for either candidate because, under Stewart’s construct and as a matter of Florida law, they reflect a clear indication that the voter made a definite choice to undervote that particular race.¹² It is wholly inappropriate to attempt to second guess why or how a voter chose to undervote. Moreover, it would be absurd and most assuredly disenfranchise voters if the House were to accept Stewart’s arbitrary statistical allocation of votes -- particularly in the admitted absence of evidence of voter intent. Professor Stewart is not a mind reader and the House should reject his invitation to act as one.

Professor Stewart also confirmed that his analysis provides no evidence of any machine malfunction. See App. 18, 12/19/06 Tr. 86:24-87:6.¹³ Stewart cannot determine voter intent; instead, he merely supplies statistics “about the behavior of voters using particular types of machines,” App. 18, 12/19/06 Tr. 85:8-86:2, and offers an “attempt to estimate ... how that pool of voters **would have** cast their ballots in this particular case” absent the presumed malfunction. App. 18, 12/19/06 Tr. 109:6-11 (emphasis added). Stewart cannot explain why lower rates of

¹² This makes sense because a voter cannot register his or her vote (by pushing the “VOTE” button) until he or she has completed the ballot review screens and confirmed his or her vote selections.

¹³ Professor Stewart attempted to maneuver around this by couching the text of his report in terms of the excess undervotes being caused by “the use of electronic voting machines” rather than by “electronic voting machine malfunction” or “software bug” -- two concepts that, he was forced to concede, are vastly different. See App. 18, 12/19/06 Tr. 78:25-79:12, 82:11-23 (emphasis added).

undervotes were recorded for other races on the same day and by the same machines that recorded the “excess undervotes,” nor can he provide evidence of any of the other hypotheses proffered as a potential cause of the excess undervotes. *See* App. 18, 12/19/06 Tr. 79:21-85:13; *see also id.* at 12/19/06 Tr. 110:8-111:11.

Professor Stewart’s analysis fails in another critical respect: he cannot prove the actual number of “excess undervotes” in the Congressional District 13 race, *see* App. 18, 12/19/06 Tr. 105:8-11, let alone the precise number of claimed excess undervotes or “legal votes” that should have been counted for Ms. Jennings. Despite this and based upon his statistical “allocation” of the excess undervotes, Stewart believes that Ms. Jennings would have won if it can be shown that 10 percent of the excess undervotes were caused by machine malfunction. Incredibly, he cannot determine which, if any, of the five proffered hypotheses may have caused the excess undervotes, nor is he able to attribute any statistical probability to the likelihood that any one hypothesis might be responsible for causing the excess undervotes. *See* App. 18, 12/19/06 Tr. 105:3-106:6. The following exchange is telling:

- Q: Can you tell the court what percentage of the excess undervote is attributable to the voter abstention or turnout hypotheses ...?
- A: **I've done no work that's attempted to identify that number.**
- Q: Are you able to tell the court the number of excess undervotes attributable to the [flawed] ballot design theory ...?
- A: **I've done no research to try to parse out the different contributing factors to the excess undervote.**
- Q: . . . [C]an you tell the court what percentage of excess undervotes is attributable to the malicious code hypothesis ...?
- A: **I have no data about that.**
- Q: And can you tell the court . . . what percentage of the excess undervotes is attributable to this software bug that Dr. Wallach references in his report?
- A: **I have no evidence about that.**

Q: Is there any way that you can tell the court what percentages are attributable to any of these hypotheses?

A: **I know of, off the top of my head, no way in which you could test those, but I am not -- I am not an expert in how those bugs would manifest themselves in the voting record.**

App. 18, 12/19/06 Tr. 110:8-111:11 (emphasis added). Thus, critically, Stewart cannot provide any support for his proposed allocation and is unable to validate his belief that Ms. Jennings would have won.

The statistical theory underlying the instant Contest was tested under cross-examination in the State Contest. An objective and reasonable reading of that testimony, one shared by the circuit judge, is that Ms. Jennings failed to provide credible evidence of a machine malfunction.¹⁴ More importantly, the evidentiary hearing revealed a key and uncontroverted fact: Stewart cannot determine the number of legal votes, if any, cast for Ms. Jennings that were not counted.

Q: You can't prove the actual number of excess votes in this case, can you?

A: **I cannot prove that is was a particular number**, no sir.

App. 18, 12/19/06 Tr. 105:8-11(emphasis added). Further expert testimony reveals that statistics cannot determine the key dispositive issue in this case -- whether legal votes for Ms. Jennings were not counted and, if so, how many. See App. 18, 12/20/06 Tr. 383:24-384:8 ("Q: Can your analysis, as you've described it today, tell us the number of votes that were cast for Christine

¹⁴ Another expert called by Ms. Jennings, but not cited in the Notice of Contest, suggested that there "might be a problem" based upon the "excess undervotes" described by Professor Stewart, and that he must review the voting system's source code to "rule out" the existence of a software bug. See App. 18, 12/20/06 Tr. 185:7-10. The inability to prove the absence of a software bug does not mean, *a fortiori*, that there is a malfunction. The assertion that a software bug's existence can never be ruled out is far different than proving than a machine malfunctioned.

Jennings that were not counted, if any, in the 13th congressional district race? . . . A [Professor Herron]: I think it follows from my report that **that number is zero.**) (emphasis added). This crucial failing demonstrates the lack of probative value of Ms. Jennings' statistical machinations in resolving this Contest. Ms. Jennings' attempt to statistically allocate votes that -- as a matter of law -- cannot be counted as legal vote for either candidate must fail in light of the empirical, objective evidence that the iVotronic System operated properly.

Despite having retained a parallel testing expert that participated in the process and observed the State's parallel testing, Ms. Jennings offered no evidence to rebut the State's conclusion "that the iVotronic touchscreens accurately captures the voter's selection as presented to the voter on the review screens." See App. 2, p. 2. To the contrary, Ms. Jennings' computer expert Professor Wallach admitted: "**I don't doubt its accuracy.**" App. 18, 12/20/06 Tr. 241:19-22 (emphasis added). Instead, he quibbled with its "completeness." *Id.* On redirect examination, Wallach was led down a laundry list of items by Ms. Jennings' counsel which he agreed, if included, would have made the parallel testing "more complete."¹⁵ See App.18,

¹⁵ Wallach admitted that parallel "testing can **demonstrate beyond a doubt** that a problem exists." App. 18, 12/20/06 Tr. 203:22-23 (emphasis added); *see also id.*, 183:20-22 ("a broad truism is that [parallel] testing can never identify the absence of bugs; **it can only show the presence of bugs**") (emphasis added). In fact, he has never "seen a bug cause a voting machine to create undervotes for a specific candidate during an election but did not show up at all in parallel testing." App. 18, 12/20/06 Tr. 243:25-244:4. Wallach describes his analytical process as determining the presence of a bug through parallel testing with resort to review of the source code to explain *why* there was a malfunction. App. 18, 12/20/06 Tr. 156:7-17 ("through testing and examination of machines, I might observe something unusual, and then I might go back and look at the software to see if I can find an explanation for why."). Thus, even if a bug were found in the source code, Wallach must demonstrate its manifestation in the machine's operation in order to validate his theory; absent such empirical demonstration, any claim that machine malfunction caused the rejection of a number of legal votes sufficient to change the result of the election remains a theoretical notion and, necessarily, fails the crucial element of causation. Moreover, such an exercise is not necessary because objective, authoritative and empirical testing by the State of Florida, conducted pursuant to lawful authority, has demonstrated that the

12/20/06 Tr. 245:1-249:2 (noting factors such as demographic selection of test voters, the number of machines tested and the rapidity or steadiness of finger touches). None of these addressed the ultimate question of whether the iVotronic machines accurately recorded the voter's selection as presented to -- and verified by -- the voter on the review screens.¹⁶

After the two-day evidentiary hearing, the parties submitted extensive post-hearing briefs and the Florida Court issued an order denying Ms. Jennings' request for access to the trade secrets because it was "based on nothing more than speculation and conjecture." App. 1, ¶ I. In doing so, the Florida Court conducted a thorough review of those experts and their opinions and concluded that the "testimony of [Jennings'] experts was nothing more than conjecture and not supported by credible evidence." *Id.* at ¶ H. The Court also received and evaluated evidence of the voting machines' operations, including the results of pre- and post-election testing conducted by the State of Florida and Sarasota County. With respect to the pre-election testing, the Court held that "the machines now challenged were tested as required by law prior to the early voting and election day voting and were found to be working properly." *Id.* at ¶ D. Similarly, the Court held that the State's post-election "parallel testing" demonstrated "100% accuracy of the touchscreen machines recorded voters' selections as reflected on the summary screens with 100% accuracy.

¹⁶ See, e.g., App. 2, pp. 8-9:

. . . [T]he process of selecting one's choices is not a measure of the voting device's accuracy. **Accuracy is relevant to the information presented to the voter on the review screens and ultimately captured as a ballot cast upon a positive action by the voter after that voter has advanced to all the review screens and after making any desired changes to the vote selections.** The sample size for these tests, a total of ten test units, is more than adequate to identify any machine malfunctions, faulty machines, machine bias or irregularities that could have contributed to the observed undervotes in this race. [emphasis added].

equipment in reporting the vote selections,” *id.* at ¶ F, and that Ms. Jennings presented “no evidence to demonstrate that parallel testing was flawed and/or the test not valid.” *Id.* at ¶ G. Those independent judicial findings bear significant relevance in revealing the lack of merit of Ms. Jennings’ claim here.¹⁷

V.

THE INSTANT CONTEST

On December 20, 2006, Ms. Jennings initiated the instant contest. *See* App. 19. This Contest is based upon the same unsupported allegations and statistical assumptions proffered in the State Contest. Like the State Contest, Ms. Jennings makes references to statements from unidentified voters regarding the use of the iVotronic System. Those statements, however, confirm that the voters were able to cast a vote for their preferred candidate; for example:

- “I double-touched the 13th Congressional District race and again **cast my vote for Christine Jennings.**” App. 19, p. 13 (emphasis added).
- “I used the back arrow and it took me back to the Congressional race and I **recorded a vote for Christine Jennings.**” *Id.* at 13 (emphasis added).
- “. . . I then returned to the vote screen and recast my ballot, **I then confirmed it on the review screen.**” *Id.* at 14 (emphasis added).
- “I followed [the poll worker’s] instructions and again voted for Jennings. **It did appear on the summary screen this time**” *Id.* at 14 (emphasis added).

¹⁷ Ms. Jennings has appealed the state Court’s ruling; that appeal, like the two contests, is without merit.

- “. . . I pressed the touch screen again to **reflect my vote for Christine Jennings**. The poll worker guided me back to the review page where my **vote in the District 13 race was reflected and I then pressed the vote button.**” *Id.* at 15 (emphasis added).
- “I went back and registered my vote again and this time it **indicated that I had voted for Ms. Jennings on the review screen.**” *Id.* at 16 (emphasis added).
- “I clicked on the review ballot and **corrected my vote** and it then showed an X beside [Jennings’] name. After that, I **registered my vote** with the Red button at the top of the screen.” *Id.* at 16 (emphasis added).
- “. . . I voted for Christine Jennings. The screen indicated I had voted. Yet when I got to the end, the review page indicated that I had not voted in the Congressional race. I went back and voted for Ms. Jennings. This time **my vote did register on the voting page.**” *Id.* at 16-17 (emphasis added).
- “I then re-voted for Christine Jennings and carefully rechecked the review page three times. I then pushed the vote button.” *Id.* at 17 (emphasis added).
- “I touched where it said no vote had been cast and it took me back to the Buchanan-Jennings race. I then re-voted for Christine Jennings and I then pushed the vote button.” *Id.* at 17-18.
- “I re-voted for Christine Jennings, and my vote **appeared to register in my second review of the summary screen.**” *Id.* at 18 (emphasis added).

- “I called a poll worker over at that time and she showed me how to move back and I re-cast my vote for Christine Jennings. **On the final review page, I confirmed my vote was cast.**” *Id.* at 19.

Ms. Jennings alleges that these “statements are representative of the memorialized eyewitness accounts of ... hundreds of voters. App. 19 at 23, ¶ 24.”¹⁸ The mere fact that some voters claim to have had difficulty in operating the voting machines does not mean that the machines malfunctioned nor does it mean that their votes were not counted. Ms. Jennings does not claim that any of these voters’ selections resulted in an undervote, nor does she proffer any evidence that even a single vote for her was not counted - let alone the 370 needed to overturn the election.¹⁹ Absent such a nexus the statements have no probative value here.

Ms. Jennings invites the House of Representatives on a journey that requires numerous leaps of faith. Her Notice suggests: (i) that the House should assume that all “excess undervotes” in Sarasota County are legal votes; (ii) that all such “excess undervotes” were caused by a (presumed) machine malfunction; (iii) that all such “excess undervotes” were cast by

¹⁸ In fact, out of the 537 voter statements turned over by Ms. Jennings in discovery in the State Contest, 386 (or 71%) state that they were able to confirm their vote for Jennings; 124 of those statements show that the voters cast their votes for Jennings, but avoid the issue of whether they confirmed their votes; and the remaining 27 are wholly irrelevant. Rather than support Jennings’ claim, these statements show that voters were able to cast votes for the candidates of their choice. It is, perhaps, for this reason that the statements were not submitted to the Committee in support of the Notice. Similarly, while Ms. Jennings alludes to other “contemporaneous sources,” she apparently elects to avoid their scrutiny by failing to submit them to the Committee.

¹⁹ In the instant Contest, Ms. Jennings claims that the “machines in the final days before the deadline for completing [pre-election] procedures exhibited the highest congressional undervote rates” and that “[a]s the County’s staff got busier, clearing and testing more machines on a single day, the congressional undervote climbed.” App. 19, ¶ 30. What is left unsaid, however, is that machines with the highest undervote rates that Ms. Jennings hand-picked for the State’s Parallel Test were cleared and tested during that “busy” period and that such machines functioned with 100% accuracy in the Parallel Test. *See* App. 18, 10/20/06 Tr. 177:12-78:1.

voters whose intent can be surmised by how they voted in other races; and, if those assumptions are accepted, (iv) that Ms. Jennings should be declared the winner. These assumptions are so contrary to the record evidence presented here that this Contest cannot be deemed credible.

LEGAL ARGUMENT

I.

GOVERNING LEGAL STANDARDS

A. *The Presumption of Correctness of State Returns, and Deference to State Laws, Elections Officials, and Courts*

Congressman Buchanan was certified by the State of Florida as the winner of the election for the 13th Congressional District. That certification constitutes prima facie evidence that the election was conducted correctly, *see* 2 Lewis Deschler, “Deschler’s Precedent” [“Deschler”], Ch. 9 §§ 36.1 (1978) (*citing, e.g. Weber v. Simpson*, H.R. REP. NO. 78-1494 (1934)), and the certificate of election must be afforded a strong presumption of legality and correctness. *See Young v. Mikva*, H.R. REP. NO. 95-244 (1977); *Ziebarth v. Smith*, H.R. REP. NO. 94-763 (1975); *Gormley v. Goss*, H.R. REP. NO. 73-893 (1934). Indeed, election results prepared by election officials appointed under the laws of the state where the election was held are presumed to be correct until they are impeached by proof of fraud or irregularity. *See* Deschler, Ch. 9 § 36.3 (*citing Clark v. Nichols*, H. R. REP. NO. 78-1120 (1943)).

With respect to elections contests, Congress has repeatedly stated that it will follow state laws and decisions of state courts unless they are shown to be unsound. *See Carney v. Smith*, H.R. REP. NO. 63-202, at 2586 (1914); *see also* 6 Clarence Cannon, “Cannon’s Precedents of the House of Representatives of the United States,” Ch. 162 §§ 91, 92 (1935) (quoted in *Kyros v. Emery*, H.R. REP. NO. 94-760, at 6 (1975)); *accord, Roudebush v. Hartke*, 405 U.S. 15 (1972).

This deference applies to statutes, rulings concerning particular issues of ballot interpretation, and to the final determination of the winner of an election, as well as the official actions of state elections officials. *See, e.g.*, Deschler, Ch. 9 §§ 57.3, 59.1 (discussing *Oliver v. Hale*, H.R. REP. NO. 85-2482 (1958) and *Roush v. Chambers*, H.R. REP. NO. 87-513 (1961)).²⁰

Here, Florida law has been followed with precision at every phase (before, during and after the election) and the actions of the state participants and certified election result must be respected. As detailed above, the voting machines used in the contested election were tested and certified by the State of Florida before they could be purchased. The machines underwent

²⁰ In the State Contest, Ms. Jennings must demonstrate the rejection of a number of legal votes sufficient to change or place in doubt the result of the election. In order to prevail, “logic dictates” -- as noted by the Florida Supreme Court -- that “the contestant **must establish the ‘number of legal votes which the county canvassing board failed to count.’”** *Gore*, 772 So. 2d at 1253. A “legal vote is one in which there is a ‘clear indication of the intent of the voter’” as reflected on the ballot. *Id.* at 1257; *see also* § 102.166(4)(a), Fla. Stat. (“A vote for a candidate or ballot measure shall be counted if there is a clear indication on the ballot that the voter has made a definite choice.”). The Florida legislature has carefully crafted a comprehensive statutory scheme governing what constitutes a “legal vote” as recorded by the different types of electronic voting systems certified for use in this State. Regardless of the type of voting system used:

If there is no clear intent on the ballot that the voter has made a definite choice for an office or ballot measure, the elector’s ballot shall not be counted for that office or measure, but the ballot shall not be invalidated as to those names or measures which are properly marked.

§ 101.5614(6), Fla. Stat. (emphasis added). Pursuant to the Legislature’s directive, the Department of State adopted “specific rules for each certified voting system prescribing what constitutes a ‘clear indication on the ballot that the voter has made a definite choice.’” § 102.166(4)(b), Fla. Stat. With respect to the iVotronic System, the word “undervote” on the ballot image for the effected race demonstrates a “clear indication that the voter made a definite choice to undervote” *See* Fla. Admin. Code R. 1S-2.031(4)2.a. (emphasis added). “The return printed by the automatic tabulating equipment, to which has been added the return of write-in, absentee, and manually counted votes and votes from provisional ballots, **shall constitute the official return of the election upon certification by the canvassing board.**” § 101.5614(8), Fla. Stat. (emphasis added). Thus, under Florida law, the undervotes reflected on the official return cannot be counted as legal votes for either candidate.

further Public Logic and Accuracy Testing by county elections officials before the election. Furthermore, after the election an automatic machine recount was conducted pursuant to Section 102.141(6), Florida Statutes, and the outcome did not change. Thereafter a second, manual, recount was conducted pursuant to Section 102.166(1), Florida Statutes; again, the result did not change. The election results were then certified by Florida's Elections Canvassing Committee pursuant to state law. The State of Florida's determination that Congressman Buchanan won the election for the 13th Congressional District is entitled to great deference and should not be disturbed where, as here, there is no basis to do so.²¹

B. *The Contestant's Burden to Present Credible Evidence*

Because of the great deference owed to state law and the acts of state officers, a contestant seeking to undo a certified election under the FCEA faces a high burden at the time of filing an election contest. In order to proceed past the pleading stage, Ms. Jennings must present credible evidence that the election result would be different or that she is entitled to the seat. Unsupported, vague allegations are insufficient to sustain an election contest. See *Anderson v. Rose*, H.R. REP. NO. 104-852, (1996); see also *Wilson v. Hinshaw*, H.R. REP. NO. 94-764 (1975) ("Allegations without substantiating evidence are insufficient to meet the requirement of the burden of proof as against a motion to dismiss."); *Anderson*, H.R. REP. NO. 104-852, 1996 WL 562033, at *21 ("a contestant must submit sufficient documentary or other evidence," including affidavits that indicate what testimony could be expected from witnesses if called or what

²¹ The State's parallel testing, conducted pursuant to state law, as well as the Florida Court's determination that (i) the parallel testing demonstrated "100% accuracy of the equipment," and (ii) Ms. Jennings presented "no evidence to demonstrate that parallel testing was flawed and/or the test not valid" are also entitled to deference. So, too, is the Florida Court's conclusion that the "testimony of [Jennings'] experts was nothing more than conjecture and not supported by credible evidence."

documentary evidence could be produced pursuant to subpoena; such evidence is characterized as “‘substantial preliminary proof,’ even if not the type that might be admissible at a hearing to support those allegations”); Deschler, Ch. 9 § 22.1 (citing *Gormley v. Goss* (H.R. REP. NO. 73-893 (1934))).

The House has in the past and should now demand more than mere bare assertions, just as any court would require at summary judgment. As previously noted by the House, normally a claim in federal or state court would be dismissed on summary judgment only after the party against whom dismissal was sought had an opportunity to gather evidence through the discovery process. *Dismissing the Election Contest against Charlie Rose*, H.R. REP. NO. 104-852 (1996), 1996 WL 562033 at *8-10. However, under the FCEA, Ms. Jennings must first make a showing of credible evidence before she may require the use of the House’s valuable time and resources.

Id. The rationale for this requirement is apparent:

In order to keep frivolous cases from reaching discovery, the Committee standard [on a motion to dismiss] incorporates the component of credibility into the review of a contestant’s allegations similar to the standard a judge would utilize in reviewing the evidence at issue in a Rule 56 motion for summary judgment. Thus, because of the peculiarities of the contested election process and the important concern that only substantive challenges be permitted discovery, the proper standard is a blend of Rules 12(b)(6) and 56.

Id. (emphasis added).

The burden of making such a showing rests at all times with Ms. Jennings. As noted in the seminal case under the FCEA, “the present contestant, and any future contestant, when challenged by a motion to dismiss, **must have presented, in the first instance,** sufficient allegations of evidence to justify his claim to the seat in order to overcome the motion to dismiss.” *Tunno v. Veyssey*, H.R. REP. NO. 92-626, at 3 (1971) (emphasis added); *see also Wilson*, H.R. REP. NO. 94-761 at 3 (contestant bears burden of proof that facts alleged occurred

and that such facts have changed the outcome of the election); *Chandler v. Burnham*, H.R. REP. NO. 73-1278 (the burden of coming forward with evidence to meet or resist presumptions in favor of election results rests with the contestant) (discussed in Deschler, Ch. 9, § 47.4); William Holmes Brown, *House Practice, A Guide to the Rules, Precedents, and Procedures of the House*, 104th Cong., 2d Sess., U.S. Government Printing Office (1996) at 462, (citing Deschler, Ch. 9 § 35.7, stating “[u]nder the new contested election statute, a contestant has the burden of resisting the contestee’s motion to dismiss, *prior* to the submission of evidence and testimony, representing sufficient evidence that the election result would be different or that contestant is entitled to the seat.”).

When evaluating whether the evidence in support of a notice is “credible”

[a] Task Force should not allow a losing candidate to contest an election based on general, or disproven claims of fraud or irregularities. A contestant must provide specific, credible allegations which either invalidate sufficient ballots to affect the result of the election or would show the validity of the vote count to be seriously suspect because certain precincts were contaminated by fraud or other improper influences.

See *Rose*, H.R. REP. NO. 104-852, 1996 WL 562033 at *7. Thus, as a threshold matter, the Committee may proceed with this Contest only if the Notice states grounds -- supported by credible “substantial preliminary proof” of irregularities, fraud, or wrongdoing with respect to the conduct of an election that -- if proven, would be sufficient to overturn the original election outcome. Otherwise, the Contest must be dismissed. See *Dismissing the Election Contest against Bart Gordon*, H.R. REP. NO. 108-208 (2003), 2003 WL 21667897, at *3-4.²²

²² While it is true that a contestant should not be penalized with dismissal because the proof of his or her claim is in the hands of others, “a task force should consider not only the contestant’s view and any supporting evidence, but any countervailing arguments and evidence available from the contestee or other sources. Thus the standard balances the need of the House

The burden faced by Ms. Jennings, as illustrated in recent contests, is exceedingly high. See, e.g., *Dismissing the Election Contest against Loretta Sanchez*, H.R. REP. NO. 105-416 (1998), 1998 WL 57281 (requiring “clear and convincing evidence” of “invalid votes”). In *Sanchez*, the election was decided by 984 votes. That number was reduced to 979 votes on a recount. A House contest followed. The Task Force on Elections found clear and convincing evidence that 624 persons had illegally registered to vote and thus were not eligible to cast ballots. The Task Force found an additional 196 circumstantial indications of illegal voter registration and adopted a local voter registrar’s decision that 124 absentee ballots were improperly made. Thus, the Task Force found clear and convincing evidence of at least 748 invalid votes. Because the number of invalid votes did not reach the 979 vote margin, however, the Committee adopted a motion dismissing the election context. *Id.*

Although the Committee permitted discovery in *Sanchez*, it did so due to the significant allegations of fraud and irregularity in the notice of contest. Even there, in the face of clear and convincing evidence of the counting of a significant number of illegal votes, the contest was dismissed -- with the admonition that only credible claims should be allowed discovery in order to the costly and divisive distractions caused by the pursuit of baseless claims. Here, and unlike

to allow for meaningful discovery while **recognizing that mere notice pleading is insufficient in the face of credible contrary evidence.**” *Rose*, H.R. REP. NO. 104-852, 1996 WL 562033 at *4 (emphasis added). Here, Ms. Jennings should not be heard to complain that lack of access to ES&S’s trade secret source code precludes her from providing any evidentiary support for this Contest. The only proffered basis for gaining access to the trade secret source code is Professor Wallach’s bare assertion that he can’t rule out the existence of a bug without the source code. See App.18, 12/20/06 Tr. 185:7-10. This contention cannot stand in light of his admission that parallel “testing can **demonstrate beyond a doubt** that a problem exists.” App. 18, 12/20/06 Tr. 203:22-23 (emphasis added); see also *id.* at 183:20-22 (“a broad truism is that [parallel] testing can never identify the absence of bugs; **it can only show the presence of bugs.**”). Such testing has already occurred and has demonstrated, without rebuttal, that the iVotronic System recorded the votes cast with 100% accuracy.

in *Sanchez*, Ms. Jennings fails to provide any credible evidence in support of her Contest and, instead, relies upon the speculation and conjecture of her experts to conclude that a statistical allocation of “excess” undervotes would give her the 13th Congressional District seat.

C. *Bare Assertions of Statistical Anomalies or Machine Malfunction
Are not Sufficient*

“A statistical analogy cannot be the basis of a contest. House precedent is clear that election returns are presumed to be correct and that errors rebutting this presumption must be proven, not assumed.” *Rose*, H.R. REP. NO. 104-852, at *15-16 (*citing Ziebarth*, H.R. REP. NO. 94-763, at 15; *Chandler*, H.R. REP. NO. 1278 at 3). These general rules are equally applicable to other statistical anomalies such as unusual turnout levels, *id.*, and should apply with equal vigor here.

To support her election contest, Ms. Jennings cites only to a claimed statistical anomaly, *i.e.*, the “excess undervotes” in Sarasota County. The House has dismissed contests with similar assertions of statistical irregularities. *See, e.g., Rose*, H.R. REP. NO. 104-852 at *15-16 (noting that claimed statistical anomaly of questionable credibility “cannot be the bootstraps by which [contestant’s] contest survives a Motion to Dismiss”); *Ziebarth*, H.R. REP. NO. 94-763 at 15 (rejecting the opinion of a statistical recount expert that a recount would change the results of the election); *Chandler*, H.R. REP. NO. 73-1278 at 3 (uncorroborated, self-serving testimony that ballots were marked, mutilated, irregular or void in a number sufficient to change election deemed not credible). Similarly, the House has regularly rejected arguments for artificially allocating votes based upon statistical assumptions such as “straight ticket” voting patterns. *See, e.g., Ellis v. Thurston*, H.R. REP. NO. 73-1305 (1934); *Fox v. Higgins*, H.R. REP. NO. 73-894 (1934) (rejecting claim based upon “straight ticket” voting pattern and dismissing contest where

there was no evidence as to the intention of the voters who cast the votes at issue). Finally, bare allegations of voting machine error are similarly insufficient to survive a motion to dismiss. *See Dismissing the Election Contest against Jay Dickey*, H.R. REP. NO. 103-109 (1993), 1993 WL 180210. Clearly, then, Ms. Jennings' bare assertions of anomalies and malfunction cannot stave off dismissal.

D. *Statutory Grounds for Dismissal*

The standards set forth above are well-established and have been regularly applied by the House of Representatives in dismissing elections contests at the pleadings stage for nearly 75 years. In 1969 the FCEA was enacted to provide a statutory framework for the procedures by which election contests should be judged. The long-established standards discussed above, however, remain unchanged and must be applied here. In the terms used by the FCEA, Ms. Jennings' Notice of Contest must be dismissed on two grounds: (1) failure to state grounds sufficient to change the result of the election; and (2) failure to claim a right to the Congressional seat. *See* 2 U.S.C. 383(b)(3), (4).

The House, in almost every election contest since the inception of the FCEA, has dismissed claims at the pleading stage due to contestants' failure to meet their high burden under 2 U.S.C. § 383(b). *See, e.g., Sanchez*, H.R. REP. NO. 105-416, 1998 WL 57281 at *1025 (minority views) (noting that "[n]o committee of the House faced with such an elections contest . . . had ever denied a contestee's motion to dismiss" up until that time and "in nearly three decades, no committee hearing a challenge brought under the FCEA had ever failed ultimately to find for the candidate certified by their state as the winner of the election.") (footnotes omitted). The result here should be no different here.

II.

**THIS CONTEST MUST BE DISMISSED BECAUSE MS. JENNINGS
FAILS TO STATE GROUNDS, BASED UPON CREDIBLE EVIDENCE,
SUFFICIENT TO CHANGE THE RESULTS OF THE ELECTION**

Astoundingly, and despite the well-established standards discussed above, Ms. Jennings' Notice of Contest contains no evidentiary support for her claims. Instead, the Notice merely summarizes the number of votes and undervotes that occurred. It then provides selected portions of voter statements collected by Ms. Jennings' legal team, as well as hearsay accounts of what some surmise may have been problems with the voting machines. The Notice points to no evidence of actual machine malfunction; in fact, Ms. Jennings' experts presume the existence of the alleged malfunction. Nevertheless, Ms. Jennings asks the House to similarly presume that the rate of "excess undervotes" represents proof of some machine malfunction. Moreover, and if Ms. Jennings' expert is to be believed, the Notice posits that the House may simply accept the proffered statistical allocation of the excess undervotes as legal votes for either candidate and conclude -- without bothering to determine the voters' actual intent -- that Ms. Jennings won the election.

Ms. Jennings had an obligation to present in her Notice of Contest credible evidence of grounds sufficient to change the results of the election, 2 U.S.C. § 383(b)(3); she has utterly failed to meet that heavy burden. There is a reason for this failing. As demonstrated above, during the State Contest, sworn testimony of Ms. Jennings' own experts demonstrates that no credible claim may be made by Ms. Jennings that is sufficient to change the results of the election.

A motion to dismiss is intended to permit a contestee and the Committee to take a hard look at the notice of contest to determine whether there is good reason for the Committee and the

parties to spend additional time and resources questioning an election result that, as here, has been lawfully certified by the state in which the election was held. Among the defenses that a contestee may raise in a pre-answer motion, for example, is the “[f]ailure of [the] notice of contest to state grounds sufficient to change the result of this election.” 2 U.S.C. § 383(b)(3). The meaning and purpose of this section of the FCEA were discussed in *Tunno*, H.R. REP. NO. 92-626, in a unanimous, bipartisan decision. In that case, the Committee explained the proper application of Section 383(b) as follows:

This provision was included in the new act because it has been the experience of Congress that exhaustive hearings and investigations have, in the past, been conducted only to find that if the contestant had been required at the outset to make proper allegations with sufficient supportive evidence that could most readily have been garnered at the time of the election such further investigation would have been unnecessary and unwarranted.

Under the new law then the present contestant, and any future contestant, when challenged by a motion to dismiss, **must have presented, in the first instance, sufficient allegations and evidence to justify his claim to the seat in order to overcome a motion to dismiss.**

Tunno, H.R. REP. NO. 92-626 at 3 (emphasis added).

Tunno has been routinely quoted and cited with approval in unanimous bipartisan Committee decisions granting pre-answer motions to dismiss. Based on *Tunno* as well as the language of the FCEA itself, House precedents over the past 30 years have established a clear legal standard governing motions to dismiss that embodies two basic rules: (1) once a motion to dismiss is filed, the contestant bears the burden of demonstrating that there is good reason for permitting the election contest to go forward; and (2) in order to meet that burden, a contestant must supply evidentiary support for the allegations in the notice of contest. See, e.g., *Wilson*, H.R. REP. NO. 94-764 (“Allegations without substantiating evidence are insufficient to meet the

requirement of the burden of proof as against a motion to dismiss.”); *accord, e.g., Ziebarth*, H.R. REP. NO. 94-763 at 2, 6-7 (contest which only attached affidavit of expert who performed statistical analysis indicating high undervote in Congressional race when compared to other races in same election, and alleged that recount would change the election result was insufficient and dismissed); *Pierce v. Pursell*, H.R. REP. NO. 95-245 at 2-3 (1977) (allegations that upon “information and belief” “certain mistakes were committed” in an election were insufficient to survive motion to dismiss); *Archer v. Packard*, H.R. REP. NO. 98-452 at 2-3 (1983) (general allegations of inadequacies in election and in conduct of officials overseeing election were insufficient); *McCuen v. Dickey*, H.R. REP. NO. 103-109 (1993) (even where proof was submitted that voting machines were improperly programmed and were defective by demonstrating that more votes were cast in Presidential race than there were actual voters, contest was still dismissed where problem was not shown to occur in contested congressional race).

While it is not Congressman Buchanan’s burden to disprove Ms. Jennings’ claims, as detailed above, the Notice offers nothing more than statistical hypotheses that presuppose the existence of machine malfunction. Ms. Jennings’ own expert readily admits that his analysis cannot determine the key dispositive issues in this case: (i) voter intent, and (ii) the number of legal votes, if any, that were cast for Ms. Jennings but not counted. An independent Florida Court has rejected the testimony of Ms. Jennings’ experts as “conjecture and not supported by credible evidence.” *See* App. 1. Moreover, and in stark contrast, there is uncontroverted evidence that conclusively demonstrates that the iVotronic System accurately recorded the votes cast at every phase of evaluation -- from pre-purchase testing and certification to pre-election Public Logic and Accuracy testing through post-election Parallel Testing. It is clear from the

evidence presented in this motion, as opposed to the conjecture proffered in Ms. Jennings' Notice, that this Contest must be dismissed.

III.

THIS CONTEST MUST BE DISMISSED BECAUSE MS. JENNINGS FAILS TO CLAIM A RIGHT TO THE 13TH CONGRESSIONAL DISTRICT SEAT

The FCEA requires Ms. Jennings to present a credible claim of right to the Congressional seat. *Tunno*, H.R. REP. NO. 92-626 ("The notice of contest should also claim right to the contestee's seat, as the contestee may, at his option, assert the failure to claim right to the seat as a defense under the provisions of 2 U.S.C. § 383(b)(4)."). In *Tunno* the case was dismissed, in part because the contestant, by failing to show how the irregularities complained of resulted in his having been wrongfully denied a victory in the election, "[did] not carry forward his claim to the seat." *Tunno*, H.R. REP. NO. 92-626.

Absent a credible claim that the irregularities or other matters complained of resulted in Ms. Jennings being denied an otherwise rightful victory, the House would cease to operate as an adjudicator of legitimate election contests, but would become, instead, a mere investigatory body charged with uncovering various and sundry allegations of election-related violations of state and federal law. See *Sanchez*, H.R. REP. NO. 105-416, 1998 WL 57281, *1046. In this case, Ms. Jennings cannot credibly allege that she won the election on November 7, 2006. Indeed, aside from a boilerplate "prayer for relief" she does not claim that she is entitled to Congressman Buchanan's seat. Instead, Ms. Jennings relies upon a discredited and rejected statistical hypothesis that "allocates" "lost" votes that could have been cast for her but were not counted. Ms. Jennings' Notice fails to meet the important jurisdictional requirement that she make a specific, credible claim that she has the right to be the United States Representative from the

13th District of Florida. This Contest, therefore, should be dismissed for Ms. Jennings' failure to make a specific, credible claim for the seat in question. 2 U.S.C. § 383(b)(4).

CONCLUSION

As demonstrated above, this Contest should be dismissed because the Notice is fatally and irredeemably defective as a matter of law in that Ms. Jennings has: (i) failed to provide credible evidence sufficient to change the result of the election, and (ii) failed to credibly make a claim of right to Congressman Buchanan's seat. Should the Committee be inclined to deny the motion, alternatively, Ms. Jennings should be required to make a more definite statement demonstrating a credible claim to Congressman Buchanan's seat. See 2 U.S.C. § 383(c) (authorizing the Committee to require a more definite statement when "the notice of contest to which an answer is required is so vague or ambiguous that the contestee cannot reasonably be required to frame a responsive answer..."). Finally, Congressman Buchanan requests reimbursement for his reasonable expenses resulting from this Contest pursuant to 2 U.S.C. § 396.²³

Glenn T. Burhans, Jr.

GLENN T. BURHANS, JR.
HAYDEN R. DEMPSEY
SEANN M. FRAZIER
GREENBERG TRAUIG, P.A.
101 EAST COLLEGE AVENUE
TALLAHASSEE, FLORIDA 32301

Counsel for Congressman Vern Buchanan

²³ An application containing a verified accounting of Congressman Buchanan's expenses will be filed separately at the appropriate time.

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CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing *Motion to Dismiss* has been served this 19th day of January, 2007 as indicated below:

Counsel for Christine Jennings:

Mark Herron *Via Hand Delivery*
MESSER CAPARELLO & SELF, P.A.
2618 Centennial Plcace
Tallahassee, Florida 32308
(850) 222-0720
mherron@lawfla.com

Kendall Coffey *Via U.S. Mail*
COFFEY & WRIGHT, LLP
2665 South Bayshore Drive
PH-2, Grand Bay Plaza
Miami, Florida 33133
(305) 857-9797
kcoffey@coffcywright.com

Sam Hirsch *Via U.S. Mail*
Jenner & Block
601 Thirteenth Street, N.W.
Suite 1200 South
Washington, DC 20006
Telephone (202) 637-6397
Facsimile (202) 639-6066


GLENN T. BURHANS, JR.

IN THE

United States House of Representatives

CHRISTINE JENNINGS,

Contestant,

v.

VERN BUCHANAN,

Contestee.

**APPENDIX TO
CONGRESSMAN VERN BUCHANAN'S
MOTION TO DISMISS ELECTION CONTEST**

GLENN T. BURHANS, JR.
HAYDEN R. DEMPSEY
SEANN M. FRAZIER
GREENBERG TRAUIG, P.A.
101 EAST COLLEGE AVENUE
TALLAHASSEE, FLORIDA 32301
(850) 222-6891

*Counsel for Contestee
Vern Buchanan*

JANUARY 19, 2007

APPENDIX

1. Order Denying Motion to Compel Source Code from ES&S, dated December 29, 2006
2. Florida Secretary of State Parallel Testing Report, dated December 18, 2006
3. Sarasota County touch screen summary ballot images
4. Florida Department of State iVotronic System Certification
5. Sarasota County Canvassing Board Minutes General, Special and Municipal Elections November 7, 2006, dated October 20, 2006
6. Sarasota Canvassing Board, Certificate of Testing, dated October 20, 2006
7. Unofficial election returns filed with the Florida Secretary of State
8. State's Election Canvassing Commission order to conduct a machine recount, dated November 13, 2006
9. Second Unofficial election returns filed with the Florida Secretary of State
10. Official election returns filed with the Florida Secretary of State
11. Official Certificate of State of Florida's Elections Canvassing Commission dated November 20, 2006
12. Correspondence from Florida Secretary of State dated November 9 and 11, releasing details on the Parallel Test plan.
13. Motion for Temporary Injunction in the Sarasota County Circuit Court, dated November 14, 2006
14. Sarasota County Court Hearing Transcript, dated November 14, 2006 and subsequent Order by Leon County Court on the issue dated November 21, 2006
15. November 21, 2006 Memorandum from the Secretary of State regarding parallel testing
16. Florida Secretary of State Parallel Testing Plan
17. Jennings First Amended Complaint in Leon County Circuit Court, dated November 30, 2006
18. Transcripts of Evidentiary Hearing before Judge William Gary, dated December 19 and 20, 2006
19. Jennings' Notice of Contest filed with House of Representatives, dated December 20, 2006

Appendix

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Tab 1

IN THE CIRCUIT COURT OF THE
SECOND JUDICIAL CIRCUIT, IN AND
FOR LEON COUNTY, FLORIDA,

CHRISTINE JENNINGS, nominee of the
Democratic Party for Representative in
Congress from the State of Florida's
Thirteenth Congressional District,

Plaintiff,

vs

CASE NO. 2006-CA-2973

ELECTIONS CANVASSING COMMISSION
OF THE STATE OF FLORIDA; SARASOTA
COUNTY CANVASSING BOARD; KATHY
DENT, as Sarasota County Supervisor of
Elections; SUE M. COBB, as Secretary of State
of the State of Florida; DAWN K. ROBERTS,
as Director of the Division of Elections of the
State of Florida; VERN BUCHANAN, as
nominee of the Republican Party for
Representative in Congress from the State of
Florida's Thirteenth Congressional District;
and ELECTION SYSTEMS & SOFTWARE, INC.,

Defendants.

ELLEN FEDDER, LANCE JONES, ERNEST LASCHE,
a/k/a MIKE LASCHE, BARBARA KLEIN, LOIS
HARMES, JOHN MINDER, DOVIE MURRAY,
JOHN McBRIDE, SUSAN GAAR, GARY LAMER
and CHARLES CLIFTON,

CASE NO. 2006-CA-2996

Plaintiffs,

vs

TOM GALLAGHER, Chief Financial Officer, State of Florida, GOVERNOR JEB BUSH, and State Senator DAN WEBSTER, as members of and as the FLORIDA ELECTIONS CANVASSING COMMISSION; and SUE M. COBB, as Secretary of State, State of Florida; et al.,

Defendants.

ORDER ON MOTIONS

This cause came on for hearing on the Motions To Compel filed by Plaintiff, Christine Jennings, and Plaintiffs, Ellen Fedder, Lance Jones, Ernest Lasche, a/k/a Mike Lasche, Barbara Klein, Lois Harmes, John Minder, Dovie Murray, John McBride, Susan Gaar, Gary Lamer, and Charles Clifton, and the Motion For Entry of a Protective Order filed by Plaintiff, Christine Jennings. The Court having considered the evidence presented, the record, argument of counsel, and being otherwise fully advised finds as follows:

- A. All parties agree for the purposes of the motions that the Source Code and Proprietary Technology associated therewith constitutes a trade secret.
- B. The sole issue for determination is whether or not Plaintiffs can demonstrate a reasonable necessity to gain access to the trade secret.
- C. Plaintiffs allege that there was some 18,412 undervotes in the race for The United States House of Representatives in Florida's Thirteenth Congressional District in Sarasota County, or 12.9% of the votes cast in said county, and that such a large number

demonstrates a malfunctioning of the iVotronic system which rejected thousands of legal votes.

D. The machines now challenged were tested as required by law prior to the early voting and election day voting and were found to be working properly.

E. Because the election was a close one and due to Plaintiffs' allegations an audit was conducted on the voting system to verify its accuracy.

F. Two parallel tests were conducted on the subject screen systems and representatives of both Plaintiffs and Defendants were present. The test results revealed 100% accuracy of the equipment in reporting the vote selections.

G. Plaintiffs have presented no evidence to demonstrate that the parallel testing was flawed and/or the results not valid.

H. The testimony of Plaintiffs' experts was nothing more than conjecture and not supported by credible evidence.

I. For this Court to grant Plaintiffs' motions would require this Court to find that it is reasonably necessary for the Plaintiffs to have access to the trade secrets of Defendant, Election Systems & Software, Inc., based on nothing more than speculation and conjecture, and would result in destroying or at least gutting the protections afforded those who own the trade secrets.


Accordingly, it is

ORDERED AND ADJUDGED as follows:

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1. The Motion To Compel filed by Plaintiff, Christine Jennings, is Denied.
2. The Motion To Compel filed by Plaintiffs, Ellen Fedder, Lance Jones, Ernest Lasche, a/k/a Mike Lasche, Barbra Klein, Lois Harmes, John Minder, Dovie Murray, John McBride, Susan Gaar, Gary Lamer, and Charles Clifton, is Denied.
3. The Motion For Entry of a Protective Order filed by Plaintiff, Christine Jennings, is moot, and thus Denied.

DONE AND ORDERED in Chambers at Tallahassee, Leon County, Florida, this
29th day of December, 2006.


WILLIAM L. GARY
Circuit Judge

copies to:

KENDALL COFFEY
Coffey & Wright, LLP
2665 South Bayshore Drive
PH-2, Grand Bay Plaza
Miami, FL 33133
fax: 305.859.9919

and

MARK HERRON
Messer, Caparello & Self, PA
2618 Centennial Place
Tallahassee, FL 32308
fax: 850.558.0659

and

DONALD B. VERRILLI, JR.
SAM HIRSCH
JESSICA RING AMUNSON

Jenner & Block, LLP
601 13th Street NW
Suite 1200 South
Washington, DC 20005
fax: 202.639.6066
Attorneys for Plaintiff/Jennings

PETER ANTONACCI
ALLEN C. WINSOR
GrayRobinson, PA
301 South Bronough Street, Suite 600
P.O. Box 11189
Tallahassee, FL 32302
fax: 850.577.3311
Attorneys for State Defendants

REGINALD J. MITCHELL
People for the American Way Foundation
1550 Melvin Street
Tallahassee, FL 32301
fax: 850.402.1999
Attorney for Fedder Plaintiffs

LOWELL FINLEY
Voter Action
1604 Solano Avenue
Berkeley, CA 94707
fax: 415.723.7141
Attorney for Fedder Plaintiffs

RONALD A. LABASKY
Young Van Assenderp, PA
225 South Adams Street
Tallahassee, FL 32302
fax: 850.561.6834
Attorneys for Defendant, Supervisor Kathy Dent

FREDERICK J. ELBRECHT
Sarasota County Attorney's Office
1660 Ringling Blvd., Floor 2
Sarasota, FL 34236-6870
fax: 941.861.7267
Attorney for Defendant, Sarasota County Canvassing Board

MIGUEL DeGRANDY, PA
800 S. Douglas Road, Suite 850
Coral Gables, FL 33134-2088
fax: 305.443.2616
Attorney for Defendant, ES & S

HARRY O. THOMAS
Radey Thomas Yon & Clark,
P.O. Box 10967
Tallahassee, FL 32302-2967
fax: 850.425.6694
Attorneys for Defendant, ES & S

ELLIOT M. MINCBERG
JUDITH E. SCHAEFFER
People for the American Way Foundation
2000 M Street NW, #400
Washington, DC 20036
fax: 202.293.2672
Attorneys for Fedder Plaintiffs

MUSLIMA LEWIS
RANDALL C. MARSHALL
AZIZA NAA-KAA BOTCHWAY
ACLU Foundation of Florida, Inc.
4500 Biscayne Boulevard, Suite 340
Miami, FL 33137-3227
fax: 786.363.1448

CINDY A. COHN
MATTHEW J. ZIMMERMAN
Electronic Frontier Foundation
454 Shotwell Street

San Francisco, CA 94110
fax: 415.436.9993
Attorneys for Fedder Plaintiffs

REBECCA HARRISON STEELE
ZEINA N. SALAM
ACLU Foundation of Florida, Inc.
West Central Florida Office
P.O. Box 18245
Tampa, FL 33679-8245
fax: 813.254.0926
Attorneys for Fedder Plaintiffs

HAYDEN R. DEMPSEY
GLENN T. BURHANS, JR.
Greenburg Traurig, PA
101 East College Avenue
Tallahassee, FL 32301
fax: 850.681.0207
Attorneys for Defendant, Vern Buchanan

Tab 2

A black and white copy of this document is not official.

**STATE OF FLORIDA
DEPARTMENT OF STATE
Division of Elections**

I, Sue M. Cobb, Secretary of State of the State of Florida, do hereby certify that the attached is a true and correct copy of the Parallel Test Summary Report for Sarasota County, Florida, November 7, 2006 General Election Using Election Systems and Software, Inc. Unity Version 4.5, Version 2, as shown by the records of this office.



Given under my hand and the Great Seal of the State of Florida, at Tallahassee, the Capitol, this the 18th day of December, A. D. 2006.

Sue M. Cobb

Secretary of State

DSDE 99 (3/03)

The original document has a reflective line mark in paper. Hold at an angle to view when checking.

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FLORIDA DEPARTMENT *of* STATE

Division of Elections

**Parallel Test Summary Report
for
Sarasota County, FL**

**November 7, 2006 General Election
Using
Election Systems and Software, Inc.
Unity Version 4.5, Version 2**

December 18, 2006

Prepared by:

Bureau of Voting Systems Certification

drd/

Parallel Test Summary Report
for
November 7, 2006 General Election held in Sarasota County, FL
using
Election Systems and Software, Inc.
Unity 4.5 Version 2
Audit location: Sarasota, FL
Test Dates: 11/28/06 to 12/01/06

EXECUTIVE SUMMARY:

Florida Division of Elections conducted two parallel tests of the iVotronic touchscreens in an effort to replicate the undervote count observed for the 13th Congressional District race during the November 7th, 2006 General Election held in Sarasota County. The parallel tests focused on the iVotronic touchscreen's ability to accurately record a voter's selections as presented to the voter on the touchscreen's ballot review pages. In addition, the parallel tests also examined various complaints regarding a voter's ability or difficulty in making his or her vote selections.

Bureau of Voting Systems Certification (BVSC) identified four touchscreens to examine, one each from four precincts selected by the Jennings and Buchanan organizations (two precincts each) plus a fifth touchscreen to be used for ad hoc testing. Sarasota County Elections Staff provided BVSC with the election day ballot images and event logs for the five selected touchscreens. BVSC utilized these records to develop the test scripts (i.e., the number of ballots to cast, the vote selections for each ballot, and the timeline for casting the ballots.) BVSC designed the test scripts to accomplish two objectives: to replicate election day with respect to the ballots cast and the frequency of use for each machine (except the ad hoc unit) and to identify any latent issues with respect to making a vote selection. However, the selected touchscreens did not become available for testing until December 1, 2006. Therefore, the first of the two parallel tests utilized five touchscreens from the pool of touchscreens that were not deployed during this election. This pool of touchscreens is the same election-ready units that were available as replacement units during this election.

Division of Elections (DOE) conducted the first parallel test on November 28, 2006 and the second parallel test on December 1, 2006. The second parallel test utilized the five selected units that were deployed on election day. The first parallel test results were compared to the expected election day results with reconciliation of the differences taking place during November 28th and 29th, 2006 in the presence of technical representatives from both the Jennings and Buchanan organizations and the media. All the vote differences experienced during this test were the result of two script errors and eight vote selections that were not entered according to the test script. The second parallel test results were reconciled on December 5, 2006 in the presence of the Jennings' technical representative and the media. The technical representative for the Buchanan organization was not present. All the vote differences experienced during this test were the result of one incorrectly documented vote selection for the ad hoc machine and two vote selections that were not according to the test script. In addition, a review of both parallel test videos did not identify any latent issues with respect to making a vote selection.

In summary, the test results show that the iVotronic touchscreens accurately captures the voter's selection as presented to the voter on the review screens. These tests did not identify any latent problems with respect to vote selection or the accuracy of the touchscreens' tabulation of the votes as cast.

BACKGROUND:

Sarasota County, Florida experienced an unexpected number of undervotes for the 13th Congressional District race during the 2006 General Election. Although a number of factors may have contributed to this undervote total, interested parties are concerned that the undervote for this race suggests that the voting equipment may not have correctly captured the voters' selection.

In response to the Sarasota County Supervisor of Elections' request and at the direction of the Secretary of State, the Division of Elections (DOE) developed an extensive audit plan to ascertain if a process, definition, machine, or tabulation anomaly contributed to this contest's undervote total. As part of DOE's audit, BVSC utilized a test activity known as a "parallel test." Typically, a parallel test involves a random selection of voting devices from the population of voting devices destined for deployment on election day. This test sample would be segregated from the actual deployed devices, but otherwise would undergo the same election day activities in "parallel" with the deployed voting devices, except the voters would consist of a test team and the ballots cast would be defined by a predetermined test script. The intent of this parallel activity is to ascertain the accuracy and reliability of the deployed voting devices with consideration given to ballot style, layout, coding, demographics, and operation.

OBJECTIVE and SCOPE:

The application of the parallel test technique for this audit deviated from the classical parallel test in that the test scripts were based on the audit data extracted from a sample of iVotronic touchscreen devices. In addition, the test script also took into consideration the voting experience of several voters that were described in various news articles. Because documents describing voter complaints were not available for review, DOE relied solely on the published accounts bearing in mind that some of these accounts actually verified the voter's acknowledgement to undervote the 13th Congressional District race.

The audit data for the iVotronic touchscreen consists of two records: the event log and the ballot image file. The event log contains the timing element for each ballot cast. The ballot image file contains the voter selections as they appeared on the review screen at the time the voter pressed the "VOTE" button. However, the arrangement of the ballot images is random. Therefore, these ballot images cannot be associated with the time that the ballot was cast.

BVSC requested each candidate to provide a list of two to four precincts that they believed warrant close examination. From this list of precincts, BVSC staff identified four iVotronic touchscreens (two from Jennings' list and two from Buchanan's list) that experienced the highest undervote within their respective precinct. This selection should enhance the probability of revealing the undervote anomaly should it exist. BVSC personnel then developed a test script from the audit data extracted from each of these machines. The four iVotronic touchscreens and their precinct are:

<u>iVotronic SN #</u>	<u>Precinct</u>	<u>Precinct selected by:</u>
V0105192	105	Jennings' organization
V0106437	118	Jennings' organization
V0117973	76*	Buchanan's organization
V0106866	113*	Buchanan's organization

* Note: The Buchanan organization recommended a random selection. BVSC performed this random selection utilizing MS Excel. The Jennings' organization also identified precincts 117 and 31 in their initial selection and later added precincts 44 and 74.

TEST PREPARATION:

BVSC conducted two parallel tests each consisting of four iVotronic touchscreens that followed a predetermined test script and a fifth iVotronic machine that underwent an ad hoc vote selection process focused on the 13th Congressional District race. BVSC developed the test scripts based on the event log and ballot images from the four iVotronic touchscreens identified above. The first parallel test utilized a random selection of touchscreens from the pool of touchscreens that were not deployed during the general election. This pool consisted of six non-ADA touchscreens and eighteen ADA touchscreens. An ADA touchscreen is identical to a non-ADA touchscreen except that the ADA touchscreen has an optional audio ballot capability and includes a three-button voter interface just below the touchscreen. Sarasota County has no restriction regarding the utilization of an ADA touchscreen for regular voting. Thus, such a device may be used by a vision impaired voter as well as those voters that do not require the ADA enhancement. BVSC included an ADA touchscreen in this first parallel test based on this information and the limited number of non-ADA units that were in the pool of units that were not deployed during this election. BVSC selected one ADA iVotronic touchscreen and four non-ADA iVotronic touchscreens from this pool. The one ADA touchscreen and three non-ADA touchscreens were tested using the predetermined scripts and the remaining touchscreen served as the ad hoc test article. The ad hoc test script was a random vote pattern along with a specific vote pattern for the 13th Congressional District race, all of which was documented by a second individual on preprinted blank sample ballots. The ad hoc tester randomly selected a vote pattern from ten predetermined vote patterns for the 13th Congressional District race for each ballot cast. BVSC tabulated the ad hoc votes that were manually recorded on the sample ballots and compared the totals with the tabulated results that were printed from the ad hoc unit. The election night results for the selected deployed touchscreens served as the baseline results for comparison with the first and second parallel test results.

The five non-deployed touchscreens selected for the first parallel test are:

iVotronic SN #
V0105917
V0106549
V0106923
V0105124
V0106978 (ADA)

The second parallel test utilized the four actual iVotronic touchscreens deployed on election day plus a fifth touchscreen from precinct 117 (SN # V0106366) for the ad hoc exercise. An alternate consideration was precinct 31 (SN # V0106117) which served as a backup test unit should one or more touchscreens fail during the second parallel test. For the second parallel test, BVSC used the same master personalized electronic ballots (PEB), poll worker activated PEBs, and compact flash cards that were used by these machines on Election Day.

AD HOC Vote Patterns:**Vote Pattern B-1**

- Select Jennings the first time the race is presented to the voter.
- Return to the race from the review screen after all other selections are made by paging back and change final selection to Buchanan.
- Verify Buchanan is the selection indicated on the review screen prior to casting the ballot.

Vote Pattern B-2

- Select Jennings the first time the race is presented to the voter.
- Return to the race directly from the review screen after all other selections are made and change final selection to Buchanan.
- Verify Buchanan is the selection indicated on the review screen prior to casting the ballot.

Vote Pattern J-1

- Select Jennings the first time the race is presented to the voter.
- Return to the race from the review screen after all other selections are made by paging back and verify selection is still Jennings.
- Verify Jennings is the selection indicated on the review screen prior to casting the ballot.

Vote Pattern J-2

- Select Jennings the first time the race is presented to the voter.
- Return to the race directly from the review screen after all other selections are made and verify selection is still Jennings.
- Verify Jennings is the selection indicated on the review screen prior to casting the ballot.

Vote Pattern J-3

- Select Buchanan the first time the race is presented to the voter.
- Return to the race from the review screen after all other selections are made by paging back and change final selection to Jennings.
- Verify Jennings is the selection indicated on the review screen prior to casting the ballot.

Vote Pattern J-4

- Select Buchanan the first time the race is presented to the voter.
- Return to the race directly from the review screen after all other selections are made and change final selection to Jennings.
- Verify Jennings is the selection indicated on the review screen prior to casting the ballot.

Vote Pattern J-5

- Do not make a selection the first time the race is presented to the voter.
- Return to the race from the review screen after all other selections are made by paging back and change final selection to Jennings.
- Verify Jennings is the selection indicated on the review screen prior to casting the ballot.

Vote Pattern J-6

- Do not make a selection the first time the race is presented to the voter.
- Return to the race directly from the review screen after all other selections are made and change final selection to Jennings.
- Verify Jennings is the selection indicated on the review screen prior to casting the ballot.

Vote Pattern U-1

- Select Jennings the first time the race is presented to the voter.
- Return to the race from the review screen after all other selections are made by paging back and change final selection to an undervote.
- Verify an undervote is the selection indicated on the review screen prior to casting the ballot.

Vote Pattern U-2

- Select Jennings the first time the race is presented to the voter.
- Return to the race directly from the review screen after all other selections are made and change final selection to an undervote.
- Verify an undervote is the selection indicated on the review screen prior to casting the ballot.

Note: Vote pattern J-4 was in error for the first parallel test. The first instruction "Select Buchanan..." actually stated "Select Jennings..." BVSC corrected the vote pattern (correct version shown above) for the second parallel test.

ELECTION SETUP:

DOE conducted the parallel tests at Sarasota's Interim Government Operations Center (IGOC) located at 1001 Sarasota Center Blvd in Sarasota, Florida. The setup for both parallel tests involved placing the 12 inch iVotronic touchscreen in a vertical orientation mounted on a modular wall unit. This wall unit is in a small room located in the Sarasota Elections storage facility within the IGOC. That room served as the test area and contained windows on two parallel sides with the modular wall being located below the windows on one side. This allowed the public to witness the test team's interaction with the touchscreens from the opposite set of windows. This arrangement also facilitated video taping the test and the observations by the designated representatives from both the Jennings and Buchanan organizations. A video production company utilized five cameras w/monitors to record the testing with one camera/monitor devoted to each touchscreen. Sarasota election staff also located two additional wide screen monitors in the public viewing area. Thus, the public was able to observe all five monitors located in the test area along with the two large monitors in the public area and also directly observe the interactions of the test team with the touchscreens. Two members of the test team were positioned to one side of each touchscreen. One team member made selections per the test script or randomly voted on the ad hoc unit while the second team member documented the actions taken. The test team consisted of twelve volunteers from the Division of Elections, ten of which were located in the test area and the remaining two serving as rotating replacements. The majority of the volunteers did not have any prior experience with touchscreens. BVSC staff gave the test team a brief 15 minute orientation just prior to beginning the first parallel test. In addition, the test team had no prior test experience as evidenced by its lack of documentation and note taking during the first parallel test. Based on the constructive feedback provided by the Jennings organization and the experience gained from the first parallel test, the test team substantially improved its test documentation during the second parallel test.

The iVotronic serial numbers, test script identification, and camera position were as indicated below:

1st Parallel Test – Tuesday November 28, 2006

Non-deployed iVotronic Sn #	Camera #	Script based on Precinct # / (iVo Sn #)
V0105917	1	n/a <i>ad hoc test script</i>
V0106549	2	105 / (V0105192)
V0106923	3	118 / (V0106437)
V0105124	4	113 / (V0106866)
V0106978 (ADA)	5	76 / (V0117973)

2nd Parallel Test – Friday December 1, 2006

Deployed iVotronic Sn #	Camera #	Precinct
V0106366	1	117 <i>ad hoc test script</i>
V0105192	2	105
V0106437	3	118
V0106866	4	113
V0117973	5	76

Key Elements:

A number of media reports described problems that several Sarasota voters encountered in making their selections and/or in making corrections to their selections as presented on the review screens. BVSC utilized the test scripts and the ad hoc script to replicate the published anomalies. Although a number of these voters indicated a problem with their initial and final selection for the 13th Congressional District race, the primary focus of the parallel tests is the review screens. The review screens present the voter with the voter's selections. It is this review screens' list of voter selections that the iVotronic records when the voter presses the "VOTE" button to cast the ballot. Therefore, the primary question concerning the accuracy of the iVotronic touchscreen is whether the review screens as presented to the voter and ultimately verified and cast by the voter is in fact what was stored as the ballot image. All other issues involving the vote selection process do not alter the fact that it is the selections that are presented on the review screens that are ultimately cast and tabulated. Thus, a review screen that shows a selection for any candidate and/or measure that is not captured in the ballot image is a machine error. Likewise, any review screen that does not show a selection that is captured within the ballot image is also a machine error. The vote selection process does not capture that selection as a vote until the voter advances through all the review pages and has had an opportunity to observe the voter's selections. Then, and only then, will the vote button become enabled and allow the voter to cast their ballot. Upon reaching the review screen, an undervote is visually presented to the voter as "No selection made" and with the contest checkbox left empty. A third visual report is provided on the non-ADA touchscreens with the "No selection made" in a red text on a white background.

Results:

The initial results from the first parallel test noted the following:

1st Parallel Test -- Tuesday November 28, 2006

Non-deployed iVotronic Sn #	Script	Variance	Resolution
V0105917	<i>ad hoc test script</i>	None	
V0106549	V0105192	1 extra vote for Jennings 1 less undervote 1 extra vote for Carusone 1 less vote for Klos	Ballot 40, Undervote was voted for Jennings Cause is same as noted for ballot 40 Ballot 35, Vote for Klos was cast for Carusone Cause is same as noted for ballot 35
V0106923	V0106437	3 extra votes for Jennings 3 less undervotes	Ballot 2, Undervote was voted for Jennings Ballot 4, Undervote was voted for Jennings Ballot 6, Undervote was voted for Jennings Causes are same as noted for ballots 2, 4, and 6
V0105124	V0106866	1 extra vote for George 1 less vote for Phillips 1 extra YES vote 1 less undervote	Ballot 67, Vote for Phillips was scripted for George Cause is same as noted for ballot 67 Ballot 5, An undervote was scripted as a Yes Cause is same as noted for ballot 5
V0106978	V0117973	1 extra vote for Jennings 1 less undervote 1 extra undervote 1 less vote for Campbell	Ballot 30, Undervote was voted for Jennings Cause is same as noted for ballot 30 Ballot 34, Vote for Campbell was cast as an undervote Cause is same as noted for ballot 34

2nd Parallel Test -- Friday December 1, 2006

Non-deployed			
iVotronic Sn #	Script	Variance	Resolution
V0106366	<i>ad hoc test script</i>	1 extra Yes vote	Ballot 44, Recorded Yes vote on pdf when actual vote was No
		1 less No vote	Cause is same as noted for ballot 44
V0105192	V0105192	1 extra vote for Crist	Ballot 19, Vote for Davis was cast for Crist
		1 less vote for Davis	Cause is same as noted for ballot 19
V0106437	V0106437	1 extra vote for Campbell	Ballot 47, Vote for McCollum was cast for Campbell
		1 less vote for McCollum	Cause is same as noted for ballot 47
V0106866	V0106866	None	
V0117973	V0117973	None	

As noted above, both parallel tests were successful in demonstrating 100% accuracy in recording the vote selections as indicated on the review screens. There were no unresolved anomalies. In addition, attempts to replicate the published reports concerning voter difficulties in making or changing their vote selections did not materialize during this test.

Conclusion:

This series of parallel tests demonstrated that the iVotronic touchscreens did not exhibit pervasive malfunctioning. There are no indications of machine bias or otherwise voting machine faults that would yield rejected legal votes. The claims made that votes were lost due to touchscreen malfunction are not supported by the results of this test. In addition, statistical analysis of the undervote for the 13th Congressional District race may not be a good indicator of a voting machine undervote anomaly. Consider the countywide races for Sarasota County Review Board (Districts 1, 2, 3, 4 and 5) and the Hospital Board Southern District Seat race. If one were to give similar considerations that were used to analyze the 13th Congressional District race in an analysis of the countywide races one would note that these six races exhibited nearly identical percent undervotes except for the Review Board District 2 race where the undervote is over 7% higher representing nearly 10,000 additional undervotes. Examination of the ballot images provides some clues as to voting patterns. All six races had two candidates, one Republican listed first and one Democrat, except the Review Board District 2 race which had an NPA candidate instead of a Democrat. BVSC noted when building the test scripts that a large number of voters that tended to vote a Democratic ballot chose to either vote for the Republican candidate or undervote the contest rather than vote for the NPA candidate. The voters that tended to vote a Republican ballot were largely consistent with their Republican choices for county-wide races. Thus, voting patterns with respect to candidate preference does appear to be a factor that needs consideration in any statistical analysis of the 13th Congressional District race.

Furthermore, criticisms that the test arrangement and/or the test team makeup influenced the accuracy of the touchscreens are unfounded. The purpose of this test is to determine whether the iVotronic touchscreens encountered pervasive malfunctioning or irregularities that contributed to the observed undervote count for the 13th Congressional District race. The unit's orientation, the voter's demographics, and all other external factors may contribute to the voter's and/or the touchscreens ability or inability to make vote selections. However, the process of selecting one's choices is not a measure of the voting device's accuracy. Accuracy is relevant to the information presented to the voter on the review screens and ultimately captured as a ballot cast upon a positive action by the voter after that voter has advanced to all the review screens and after making any desired changes to the

vote selections. The sample size for these tests, a total of ten test units, is more than adequate to identify any machine malfunctions, faulty machines, machine bias or irregularities that could have contributed to the observed undervotes for this race. In summary, there is no evidence to support the position that the iVotronic touchscreens caused votes to be lost.

Tab 3

STATE OF MISSISSIPPI
SANDERS COUNTY, MISSISSIPPI
NOVEMBER 7, 2006

CONGRESS: FINAL
UNITED STATES SENATOR
(Vote for One)

Katherine Harris	REP	<input type="checkbox"/>
Bill Nelson	DEM	<input type="checkbox"/>
Floyd Ray Frazier	NPA	<input type="checkbox"/>
Belinda Noah	NPA	<input type="checkbox"/>
Brian Moore	NPA	<input type="checkbox"/>
Roy Tanner	NPA	<input type="checkbox"/>
Write-In		<input type="checkbox"/>



U.S. REPRESENTATIVE IN CONGRESS
13TH CONGRESSIONAL DISTRICT
(Vote for One)

Vern Buchanan	<input type="checkbox"/>	REP
Christine Jennings	<input type="checkbox"/>	DEM

STATE

GOVERNOR AND LIEUTENANT GOVERNOR
(Vote for One)

Charlie Crist	<input type="checkbox"/>	REP
Jeff Kottkamp	<input type="checkbox"/>	DEM
Jim Davis	<input type="checkbox"/>	REP
Daryl L. Jones	<input type="checkbox"/>	N/A
Max Linn	<input type="checkbox"/>	N/A
Tom Macklin	<input type="checkbox"/>	N/A
Richard Paul Dembinsky	<input type="checkbox"/>	N/A
Dr. Joe Smith	<input type="checkbox"/>	N/A
John Wayne Smith	<input type="checkbox"/>	N/A
James J. Kearney	<input type="checkbox"/>	N/A
Kari C.C. Behm	<input type="checkbox"/>	N/A
Carol Castagnero	<input type="checkbox"/>	N/A
Write-In	<input type="checkbox"/>	

ATTORNEY GENERAL (Vote for One)		REP	
Bill McCollum			<input type="checkbox"/>
Walter "Skip" Campbell		DEM	<input type="checkbox"/>

CHIEF FINANCIAL OFFICER (Vote for One)		REP	
Tom Lee			<input type="checkbox"/>
Alex Sink		DEM	<input type="checkbox"/>

COMMISSIONER OF AGRICULTURE (Vote for One)		REP	
Charles H. Bronson			<input type="checkbox"/>
Eric Copeland		DEM	<input type="checkbox"/>

PREVIOUS PAGE	Page 3 of 15 Public Count: 8	Next PAGE
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LEGISLATIVE
STATE REPRESENTATIVE
69TH HOUSE DISTRICT
(Vote for One)

Laura A. Benson	REP	<input type="checkbox"/>
Keith Fitzgerald	DEM	<input type="checkbox"/>

COUNTY
CHARTER REVIEW BOARD DISTRICT 1
(Vote for One)

Stefan E. Butz	REP	<input type="checkbox"/>
Michael E. Keisman	DEM	<input type="checkbox"/>

CHARTER REVIEW BOARD DISTRICT 2
(Vote for One)

Dan H. McLeroy, Jr.	REP	<input type="checkbox"/>
G. E. (Drew) Anderson III	WPA	<input type="checkbox"/>

CHARTER REVIEW BOARD DISTRICT 3
(Vote for One)

Adam R. Miller	REP	<input type="checkbox"/>
Bryan K. Worthington	DEM	<input type="checkbox"/>

CHARTER REVIEW BOARD DISTRICT 4
(Vote for One)

Charles Cooper	REP	<input type="checkbox"/>
Wade Matthews	DEM	<input type="checkbox"/>

CHARTER REVIEW BOARD DISTRICT 5
(Vote for One)

Kevin T. Connelly	REP	<input type="checkbox"/>
Debbie Trice	DEM	<input type="checkbox"/>



HOSPITAL BOARD SOUTHERN DISTRICT SEAT 1

(Vote for One)

Gerald M. Phillips

REP

Sam George

DEM

NONPARTISAN

JUSTICE OF THE SUPREME COURT

Shall Justice R. Fred Lewis of the Supreme Court be retained in office?

YES

NO

JUSTICE OF THE SUPREME COURT

Shall Justice Barbara Joan Pariente of the Supreme Court be retained in office?

YES

NO

JUSTICE OF THE SUPREME COURT

Shall Justice Peggy A. Quince of the Supreme Court be retained in office? YES NO

DISTRICT COURT OF APPEAL

Shall Judge Barryl C. Casameua of the Second District Court of Appeal be retained in office? YES NO

DISTRICT COURT OF APPEAL

Shall Judge Charles A. Davis Jr. of the Second District Court of Appeal be retained in office? YES NO

DISTRICT COURT OF APPEAL

Shall Judge Edward C. Lafosse of the Second District Court of Appeal be retained in office? YES NO

DISTRICT COURT OF APPEAL

Shall Judge E.J. Salcines of the Second District Court of Appeal be retained in office?
 YES NO

DISTRICT COURT OF APPEAL

Shall Judge Thomas E. Stringer Sr. of the Second District Court of Appeal be retained in office?
 YES NO

CIRCUIT JUDGE TWELFTH CIRCUIT
 GROUP 21
 (Vote for One)

Rochelle Taylor Curley

Preston DeVillbiss Jr.

PROPOSED CONSTITUTIONAL AMENDMENTS

NO. 1
CONSTITUTIONAL AMENDMENT
ARTICLE III, SECTION 19

State Planning and Budget Process

Proposing amendments to the State Constitution to limit the amount of nonrecurring general revenue which may be appropriated for recurring purposes in any fiscal year to 3 percent of the total general revenue funds estimated to be available, unless otherwise approved by a three-fifths vote of the Legislature; to establish a Joint Legislative Budget Commission, which shall issue long-range financial outlooks; to provide for limited adjustments in the state budget without the concurrence of the full Legislature, as provided by general law; to reduce the number of times trust funds are automatically terminated; to require the preparation and biennial revision of a long-range state planning document; and to establish a Government Efficiency Task Force and specify its duties.

YES
NO

NO. 3

CONSTITUTIONAL AMENDMENT
ARTICLE XI, SECTION 5

Requiring Broader Public Support for Constitutional Amendments or Revisions

Proposes an amendment to Section 5 of Article XI of the State Constitution to require that any proposed amendment to or revision of the State Constitution, whether proposed by the Legislature, by initiative, or by any other method, must be approved by at least 60 percent of the voters of the state voting on the measure, rather than by a simple majority. This proposed amendment would not change the current requirement that a proposed constitutional amendment imposing a new state tax or fee be approved by at least 2/3 of the voters of the state voting in the election in which such an amendment is considered.

YES

NO

NO. 4

CONSTITUTIONAL AMENDMENT
ARTICLE X, SECTION 27

Protect People, Especially Youth, from Addiction, Disease, and Other Health Hazards of Using Tobacco

To protect people, especially youth, from addiction, disease, and other health hazards of using tobacco, the Legislature shall use some Tobacco Settlement money annually for a comprehensive statewide tobacco education and prevention program using Centers for Disease Control best practices. Specifies some program components, emphasizing youth, requiring one-third of total annual funding for advertising. Annual funding is 15% of 2005 Tobacco Settlement payments to Florida, adjusted annually for inflation. Provides definitions. Effective immediately.

This amendment requires state government to appropriate approximately \$57 million in 2007 for the Comprehensive Statewide Tobacco Education and Prevention Program. Thereafter, this amount will increase annually with inflation. This spending is expected to reduce tobacco consumption. As a result, some long-term savings to state and local government health and insurance programs are probable, but indeterminate. Also, minor revenue loss to state government is probable, but indeterminate.

YES
NO

NO. 6
 CONSTITUTIONAL AMENDMENT
 ARTICLE VII, SECTION 6
 ARTICLE XII, SECTION 26

Increased Homestead Exemption

Proposing amendment of the State Constitution to increase the maximum additional homestead exemption for low-income seniors from \$25,000 to \$50,000 and to schedule the amendment to take effect January 1, 2007, if adopted.

YES

NO

NO. 7
CONSTITUTIONAL AMENDMENT
ARTICLE VII, SECTION 6

Permanently Disabled Veterans' Discount on Homestead Ad Valorem Tax

Proposing an amendment to the State Constitution to provide a discount from the amount of ad valorem tax on the homestead of a partially or totally permanently disabled veteran who is age 65 or older who was a Florida resident at the time of entering military service, whose disability was combat-related, and who was honorably discharged; to specify the percentage of the discount as equal to the percentage of the veteran's permanent service-connected disability; to specify qualification requirements for the discount; to authorize the Legislature to waive the annual application requirement in subsequent years by general law; and to specify that the provision takes effect December 7, 2006, is self-executing, and does not require implementing legislation.

YES
NO

NO. 6
CONSTITUTIONAL AMENDMENT
ARTICLE X, SECTION 6

Eminent Domain

Proposing an amendment to the State Constitution to prohibit the transfer of private property taken by eminent domain to a natural person or private entity; providing that the Legislature may by general law passed by a three-fifths vote of the membership of each house of the Legislature permit exceptions allowing the transfer of such private property; and providing that this prohibition on the transfer of private property taken by eminent domain is applicable if the petition of taking that initiated the condemnation proceeding was filed on or after January 2, 2007.

YES
NO

PROPOSED COUNTY CONSTITUTION AMENDMENTS

**MANDATORY VOTER VERIFIED PAPER BALLOTS: INDEPENDENT RANDOM AUDITS OF ELECTION RESULTS:
AUDITS REQUIRED BEFORE CERTIFICATION.**

Amend the Sarasota County Charter to require that, effective January 1, 2008: (1) all County voting systems provide a voter verified paper ballot; (2) in addition to election code audits, mandatory independent random audits of election results be conducted in every election comparing hand counts to machine counts; (3) mandatory manual audit of all paper ballots if audit discrepancies reach specified thresholds; (4) no election certified until all mandatory audits are complete and any inaccuracies resolved.

Yes, for the amendment

No, against the amendment

Instructions

Return to any contest by touching the contest title. To cast your ballot now, press the NOTE button.

UNITED STATES SENATOR.....	<input type="checkbox"/>	STATE REPRESENTATIVE.....	<input type="checkbox"/>
No Selection Made		No Selection Made	
U.S. REPRESENTATIVE IN CONGR.....	<input type="checkbox"/>	CHARTER REVIEW BOARD DISTRICT.....	<input type="checkbox"/>
No Selection Made		No Selection Made	
GOVERNOR AND LIEUTENANT GOV.....	<input type="checkbox"/>	CHARTER REVIEW BOARD DISTRICT.....	<input type="checkbox"/>
No Selection Made		No Selection Made	
ATTORNEY GENERAL.....	<input type="checkbox"/>	CHARTER REVIEW BOARD DISTRICT.....	<input type="checkbox"/>
No Selection Made		No Selection Made	
CHIEF FINANCIAL OFFICER.....	<input type="checkbox"/>	CHARTER REVIEW BOARD DISTRICT.....	<input type="checkbox"/>
No Selection Made		No Selection Made	
COMMISSIONER OF AGRICULTURE.....	<input type="checkbox"/>	CHARTER REVIEW BOARD DISTRICT.....	<input type="checkbox"/>
No Selection Made		No Selection Made	

Instructions

Return to any contest by touching the contest title. To cast your ballot now, press the VOTE button.

HOSPITAL BOARD SOUTHERN DIST..... No Selection Made	<input type="checkbox"/>	DISTRICT COURT OF APPEAL..... No Selection Made	<input type="checkbox"/>
JUSTICE OF THE SUPREME COUR..... No Selection Made	<input type="checkbox"/>	DISTRICT COURT OF APPEAL..... No Selection Made	<input type="checkbox"/>
JUSTICE OF THE SUPREME COURT..... No Selection Made	<input type="checkbox"/>	DISTRICT COURT OF APPEAL..... No Selection Made	<input type="checkbox"/>
JUSTICE OF THE SUPREME COURT..... No Selection Made	<input type="checkbox"/>	CIRCUIT JUDGE TWELFTH CIRCU..... No Selection Made	<input type="checkbox"/>
DISTRICT COURT OF APPEAL..... No Selection Made	<input type="checkbox"/>	NO. 1..... No Selection Made	<input type="checkbox"/>
DISTRICT COURT OF APPEAL..... No Selection Made	<input type="checkbox"/>	NO. 3..... No Selection Made	<input type="checkbox"/>

Instructions

Return to any contest
by touching the contest
title. To cast your
ballot now, press the
VOTE button.



NO. 4.....
No Selection Made

NO. 6.....
No Selection Made

NO. 7.....
No Selection Made

NO. 8.....
No Selection Made

PROPOSED COUNTY CHARTER AMEN.....
No Selection Made

Tab 4

A black and white copy of this document is not official.

**STATE OF FLORIDA
DEPARTMENT OF STATE
Division of Elections**

I, Sue M. Cobb, Secretary of State of the State of Florida, do hereby certify that the attached are true and correct copies of the Department of State certification of the ES & S Voting System, Release 4.5, Version 1 and 2, as shown by the records of this office.



Given under my hand and the Great Seal of the State of Florida, at Tallahassee, the Capitol, this the 29th day of December, A. D., 2006.

Sue M. Cobb

Secretary of State

DSDE 99 (3/03)

The original document has a reflective line mark in paper. Hold at an angle to view when checking.

Certification
Election Systems and Software, Inc.
The ES&S Voting System, Release 4.5, Version 1

On this date, the Department of State certifies "The ES&S Voting System, Release 4.5, Version 1", submitted by Election Systems and Software, Inc., for purchase or use by County and Municipal Governments of the State of Florida.

This version of the system consists of:

Election Administration:

- Unity Version 2.4.4
 - Election Data Manager (EDM), version 7.2.1.0
 - Ballot Image Manager (Optech), version 3.2.0.0
 - Hardware Programming Manager (HPM), version 5.0.3.1
 - Memory Pack Receiver/Programmer, Revisions C or D w/ firmware version 2.06 or 2.08
 - iVotronic Supervisor Terminal (12" or 15")
 - PEB Data Acquisition Device, Model 1
 - *Optional Compact Flash Multi-Card Reader / Writer, version 1.0*
 - Election Reporting Manager (ERM), version 7.0.0.1 w/ SR 1
 - Audit Manager, version 7.0.2.0
 - *Optional software*
 - Data Acquisition Manager (DAM), version 6.0.0.0 *(for modem communications)*
 - iVotronic Image Manager, version 1.2.3.0 *(for bitmap system)*
- COTS software
 - *Optional Oracle 9i, version 9.2.0.1.0 (for use with iVotronic Image Manager)*
 - Adobe Acrobat Reader, version 7.0 standard or later
 - Adobe Type Basics 65 or similar font manager
 - RM Cobol, version 7.50 or later
 - Cobol Wow, version 3.12 or later.

Precinct Count (one or more of the following):

- iVotronic DRE (12" & 15" w/ or w/o ADA), hardware version 1.0 w/ firmware version 8.0.1.2
- *Auxiliary equipment for iVotronic DRE:*
 - PEB Revs: iV1.7-PEB-S, iV1.7b1-PEB-S, iV1.7b2-PEB-S, iV1.7c-PEB-S
 - COTS headphones for audio ballots (for use with ADA iVotronic)
 - Communications Pack
 - *Optional iVotronic Battery Charger, version 1.0*
- Optech III-P Eagle, hardware versions B.01-B.06, C-01a-C-01c, C.02a-C.02c, C.03a-C.03c, C.04, C.05, C.06 & C.07
 - HPS Firmware version 1.30
 - Memory Pack, revision C, D, or F w/ APS firmware version 1.52
- *Optional auxiliary equipment for Optech III-P Eagle:*
 - Eagle Modem, Release 1
 - CPS firmware version 1.08a

Central / Absentee Count (one or more of the following):

- Optech III-P Eagle *(as defined for precinct count)*
- Optech IV-C, Model 400, hardware version 2.00 or 2.02 w/ software version 1.05C
 - Recount Utility, software version 1.05rc

This certification is granted pursuant to Section 101.015, Florida Statutes, and Rule Chapter 1S-5.001, Florida Administrative Code.



Certification # 0505ES&S-01 (Revision3)
 Given under my hand, and the Great Seal of the State of Florida at Tallahassee, the Capitol, this eighth day of September, A.D. 2006.

Dawn K. Roberts

Dawn K. Roberts, Director
 Division of Elections
 Department of State
 State of Florida

Certification
Election Systems and Software, Inc.
The ES&S Voting System, Release 4.5, Version 2

On this date, the Department of State certifies "The ES&S Voting System, Release 4.5, Version 2," submitted by Election Systems and Software, Inc., for purchase or use by County and Municipal Governments of the State of Florida.

This version of the system consists of:

Election Administration:

- Unity Version 2.4.4.2
 - Audit Manager, version 7.0.2.0
 - Election Data Manager (EDM), version 7.2.1.0
 - ES&S Ballot Image Manager (ESSIM), version 7.2.0.0
 - Hardware Programming Manager (HPM), version 5.0.3.1
 - COTS OmniDrive or similar PCMCIA interface *(for use with Model 100)*
 - Needham's Electronics EMP-11 Device Programmer w/ES&S 2102 piggyback card *(for use with Model 150)*
 - COTS Zip drive *(for use with Model 650)*
 - San Disk Image Mate or similar compact flash interface *(for use with iVotronic compact flash cards)*
 - Optional Compact Flash Multi-Card Reader / Writer, version 1.0
 - Election Reporting Manager (ERM), version 7.0.0.3 w/ SR 1
 - *Optional software*
 - Data Acquisition Manager (DAM), version 6.0.0.0 *(for modem communications)*
 - iVotronic Image Manager (iVIM), version 1.2.3.0 *(for bitmap system)*
 - *Optional hardware*
 - One or more Equinox multi-modem adapters, 4 or 8 ports *(for use with Data Acquisition Manager)*
 - One or more Sealevel Systems COMM+8.PCI serial adapters *(for use with Data Acquisition Manager and a jurisdiction's existing modem bank)*
- COTS software
 - *Optional Oracle 9i, version 9.2.0.1.0 (for use with iVotronic Image Manager)*
 - Adobe Acrobat Reader, version 7.0 Standard or later
 - Adobe Type Basics 65 or similar font manager *(for Helvetica fonts)*
 - RM Cobol, version 7.50 or later
 - Cobol Wow, version 3.12 or later
 - Norton Anti Virus 2004 or equivalence

Precinct Count (one or more of the following):

- Model 100 Precinct Ballot Counter, hardware version 1.3,
 - w/firmware version 5.0.0.0
 - Auxiliary equipment for Model 100:
 - *Optional internal modem*
 - Metal Ballot Box
- iVotronic DRE (12" & 15" w/ and w/o ADA), hardware version 1.0
 - w/ firmware version 8.0.1.2
 - Auxiliary equipment for iVotronic DRE:
 - PEB Rev: iV1.7-PEB-S, iV1.7b1-PEB-S, iV1.7b2-PEB-S, iV1.7c-PEB-S
 - COTS headphones for audio ballots *(for ADA iVotronics)*
 - Communications Pack
 - *Optional iVotronic Battery Charger, version 1.0*

Central / Absentee Count (one or more of the following):

- Model 150 Central Ballot Scanner, hardware version 1.1
 - w/ firmware version 2.1.2.0
 - Two COTS parallel printers
- Model 650 Central Count Ballot Tabulator, hardware version 1.0 or 1.1
 - w/ firmware version 2.1.0.0
 - Two COTS parallel printers

This certification is granted pursuant to Section 101.015, Florida Statutes, and Rule Chapter 1S-5.001, Florida Administrative Code.



Certification # 0508ES&S-02 (Revision3)
 Given under my hand, and the Great Seal of the State of
 Florida at Tallahassee, the Capitol, this eighth day of
 September, A.D. 2006.

Dayn K. Roberts

Dayn K. Roberts, Director
 Division of Elections
 Department of State
 State of Florida

Tab 5

**SARASOTA COUNTY CANVASSING BOARD MINUTES
GENERAL, SPECIAL AND MUNICIPAL ELECTIONS
NOVEMBER 7, 2006**

The Canvassing Board (represented by Kathy Dent, Supervisor of Elections) for the General, Special and Municipal elections convened to conduct the Logic and Accuracy Test on Friday, October 20, 2006, at 9:00 a.m., in the office of the Supervisor of Elections, Sarasota County Terrace Building, 1st Floor, 101 South Washington Boulevard, Sarasota, Florida. In attendance were: Kathy Dent, Supervisor of Elections; representatives of Kathy Dent's staff, including Terry Williams, Information Technology Manager; John Kennedy, Network Administrator; Antoine Henry, GIS Support; Bobby Walker, Technical Services Administrator; Scott Farrington, Network Support; L'tea Woodard, Administrative Assistant; Patrick VanCooten, Deputy Registrar; Brian Dudrow, Deputy Registrar; James Steven Dudrow, Deputy Registrar; Thomas Goodell, Director of Operations; Brenda Luna, Deputy Registrar; Barbara Bain, Voter Outreach Coordinator; Cathy Fowler, Administrative Assistant; Betty Maddox, Deputy Registrar, Terrance Greenwood, Deputy Registrar, Destry Maynard, Deputy Registrar, Rick Magee, Deputy Register, David Foss, Deputy Register, and Tom Welicki, Deputy Register. Media present were, Barry Tarleton, a photographer with Fox 13; Chuck Willard, a photographer with ABC 7; and Jim Hockett, a photographer with WFLA channel 8. Fredrick Cass, Donna Cass, Rosemarie Myerson and Richard Myerson from the general public were in attendance.

The Public Logic and Accuracy (L&A) test was then conducted by processing ballots to produce a specified number of valid votes for each candidate and each precinct and early voting site. Thirty-two iVotronic terminals were tested. Each ballot style and ballot position was exercised to assure recording accuracy of the software and hardware. The ballots were separately collected per unit and totaled separately to create a manual count of each terminal.

The master ballot activators were then used to recollect all terminals to create a precinct report of the sum total of the iVotronics and the manual and master figures were compared. All results matched and testing was concluded. The printed results were examined, and it was determined that an accurate and errorless count was made.

Next, the testing of the hardware and software of the 650 high-speed optical readers for processing absentee ballots was conducted. During the testing of the optical ballot reader two, an error occurred indicating a sensor misreading. Mrs. Dent decided to stop the testing of this optical ballot reader, to contact ES&S to repair the reader and then to reschedule the logic and accuracy testing of both 650 high-speed ballot readers.

The testing continued to the Election Reporting Module System where each of the master ballot activators and the test deck scanner file were read into the reporting system and compared. All results matched and testing was concluded. Then the operation of adding and removing provisional ballots was tested.

The Canvassing Board (represented by Kathy Dent) witnessed the resetting of each device that passed to a pre-election state of readiness and the sealing of each device that passed in such a manner as to secure its state of readiness until the opening of the polls. Attached hereto is a schedule of the iVotronics that were tested with the number of the seal that secured each device at the conclusion of the test.

The test results were placed in the election case along with the master ballot activators. The case was sealed and placed in the DARC room which is security controlled and under the jurisdiction of the Supervisor of Elections.

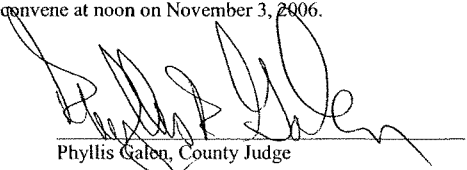
The Canvassing Board recessed at 1:00 p.m.

The Board (represented by Kathy Dent) reconvened at 9:00 a.m. on November 1, 2006, to conduct the logic and accuracy test on the 650 high-speed optical ballot readers. The entire process stated above for testing the hardware and software of the high-speed optical reader was repeated and an accurate and errorless count was made.

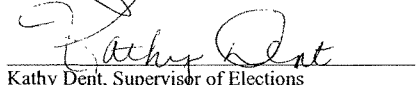
The test results were placed in the election case. The case was sealed and placed in the DARC room which is security controlled and under the jurisdiction of the Supervisor of Elections.

The system parameter disk, specific to this election, was sent to the Division of Elections for archival purposes.

The Canvassing Board recessed at and will reconvene at noon on November 3, 2006.



Phyllis Galen, County Judge



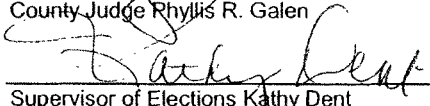
Kathy Dent, Supervisor of Elections

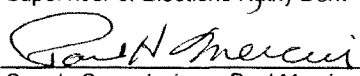


Paul Mercier, County Commissioner

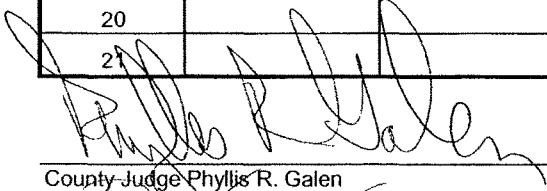
SCHEDULE OF TABULATION DEVICES TESTED			
ELECTION: NOVEMBER 7, 2005 GENERAL ELECTION			
DATE: 20-Oct-06			
ITEM	iVotronic Serial	Closed w/Seal #	
1	VO106933-B	301845	
2	V0105202-B	301853	
3	V0114423-C	301858	
4	V0105613-B	301864	
5	V0105519-B	301848	
6	V0112002-C	301863	
7	V0105829-B	301847	
8	V0106299-B	304906	
9	V0106138-B	304921	
10	V0105191-B	301866	
11	V0105659-B	301886	
12	V0111754-C	301856	
13	V0107104-B	301868	
14	V0106365-B	301869	
15	V0106106-B	301865	
16	V0103604-B	301855	
17	V0106317-B	304939	
18	V0106806-B	304972	
19	V0106218-B	301894	
20	V0106334-B	301892	
21	V0105903-B	301881	


 County Judge Rhyllis R. Galen


 Supervisor of Elections Kathy Dent


 County Commissioner Paul Mercier

SCHEDULE OF TABULATION DEVICES TESTED			
ELECTION: NOVEMBER 7, 2005 GENERAL ELECTION			
DATE: 20-Oct-06			
ITEM	iVotronic Serial	Closed w/Seal #	
1	VO118360->	301885	
2	V0106309-B	301879	
3	V0105398-B	301860	
4	V0106211-B	301888	
5	V0105468-B	301895	
6	V0105585-B	301871	
7	V0118298->	301867	
8	V0106176-B	301873	
9	V0105923-B	301887	
10	V0105643-B	301877	
11	V0106629-B	301859	
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			



County Judge Phyllis R. Galen



Supervisor of Elections Kathy Dent



County Commissioner Paul Mercier

IVOTRONIC AND COMPACT FLASH CARD CUSTODY SHEET
 KATHY DENT
 SUPERVISOR OF ELECTIONS SARASOTA COUNTY, FLORIDA

General Election
 Election Name: _____ Election Date: **November 7th, 2006**

1 VEF
 We certify the following compact flash cards were prepared by the Votronic and Compact Flash Card Custody Board and sealed with the seal(s) listed below

Prepared by: (Print name & initial) Patrick Van-Cooten
 Witness (Print name & initial) Bobby Walker Date 8/18/2006 Time _____

Sealed and locked: (Print name & initial) _____
 Witness (Print name & initial) _____ Date _____ Time _____

Delivered to precinct: (Print name & initial) _____
 Witness (Print name & initial) _____ Date _____ Time _____

Picked up from precinct: (Print name & initial) _____
 Witness (Print name & initial) _____ Date _____ Time _____

Report any discrepancy here _____

ELECTION BOARD

Call Phone Bank at 887-5686 if seals that secure compact flash cards are broken.

2 VEF		3 AM		4 VEF		SOE Office	
Votronic Serial #	Compact Flash Card Serial #	Compact Flash Card Seal #	Return Seal #	Two People Initial	Two People Initial	Two People Initial	Two People Initial
1. V0105933-B	301845	CF01865	3917				
2. V0105202-B	301853	CF01419	3918				
3. V0114423-C	301856	CF00042	3919				
4. V0105613-B	301864	CF00818	3920				
5. V0105519-B	301848	CF00969	3921				
6. V0112002-C	301863	CF00222	3922				
7. V0105929-B	301847	CF01105	3923				
8. V0105299-B	304906	CF00293	3924				
9. V0106138-B	304921	CF01117	3925				
10. V0105191-B	301866	CF00652	3926				
11. V0105659-B	301886	CF00665	3927				
12. V011754-C	301856	CF00959	3928				
13. V0107104-B	301868	CF01040	3929				
14. V0105955-B	301869	CF00955	3930				
15. V0106105-B	301865	CF01114	3931				
16. V0105604-B	301855	CF00620	3932				

Place all broken seals in designated bag and return in transfer case.

IVOTRONIC AND COMPACT FLASH CARD CUSTODY SHEET

KATHY DENT
SUPERVISOR OF ELECTIONS SARASOTA COUNTY, FLORIDA

November 7th, 2006
Election Date: Venice

1 VEF
 We verify the following Ivotronic Serial #s and Compact Flash Cards were assigned and installed in accordance with the seal if sealed below.

Prepared by: (Print name & initial) Patrick Van-Cooten	Witness (Print name & initial) Bobby Walker
Sealed and locked. (Print name & initial)	Witness (Print name & initial) Bobby Walker
Delivered to precinct. (Print name & initial)	Witness (Print name & initial)
Picked up from precinct. (Print name & initial)	Witness (Print name & initial)

Date: 8/17/2006 Time: _____
 Date: 8/17/2006 Time: _____
 Date: _____ Time: _____
 Date: _____ Time: _____

Report any discrepancy here

2 VEF

Ivotronic Serial #	Ivotronic Delivery Seal #	Compact Flash Card Serial #	Compact Flash Card Seal #
1	V0105317-B	304939	CF01522
2	V0106806-B	304972	CF01347
3	V0106515-B	301864	CF00427
4	V0106324-B	301892	CF00851
5	V0105903-B	301881	CF01051
6	V0118290->	301885	CF00872
7	V0106309-B	301879	CF00071
8	V0106398-B	301860	CF01201
9	V0106211-B	301888	CF01079
10	V0105468-B	301885	CF00731
11	V0105355-B	301871	CF00465
12	V0118295->	301887	CF00313
13	V0106176-B	301873	CF01104
14	V0105923-B	301887	CF00446
15	V0105643-B	301877	CF01030
16	V0106826-B	301859	CF01134

Call Phone Bank at 861-6655 if seals that secure compact flash cards are broken

3 ELECTION BOARD

AM		PM	
Two People Initial	Return Seal #	Two People Initial	Return Seal #
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			

4 VEF

Two People Initial	Return Seal #
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

SOE Office

Two People Initial	Return Seal #
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

Place all broken seals in designated box and return in transfer case.

1750

Tab 6

CERTIFICATE OF TESTING

The undersigned, comprising the Sarasota Canvassing Board for the November 7, 2006, General and Special elections, do hereby certify that:

A Logic and Accuracy test was held in the office of the Supervisor of Elections at 101 South Washington Boulevard, Sarasota on October 20, 2006, for testing voting equipment and tabulation equipment for said election.

The Canvassing Board observed the Logic and Accuracy test and compared the results with manually calculated/known totals for each issue. The Board verified the correctness of all totals, including the number and type of ballots cast, number of votes cast for each issue, and the number of undervotes and overvotes.

The Supervisor of Elections has custody of all test materials and has taken steps to ensure the security of said materials in accordance with Florida Statutes.

KATHY Dent
Name

Kathy Dent - SOE
Signature
for the Board

Name

Signature

Name

Signature

Dated this 20th day of October, 2006.

1752

Tab 7

A black and white copy of this document is not official.

**STATE OF FLORIDA
DEPARTMENT OF STATE
Division of Elections**

I, Kurt S. Browning, Secretary of State of the State of Florida, do hereby certify that the attached is a true and correct copy of the unofficial Certificate of the Charlotte County Canvassing Board for the General Election held on the Seventh day of November, 2006, as shown by the records of this office.



Given under my hand and the Great Seal of the State of Florida, at Tallahassee, the Capitol, this the 3rd day of January, A. D. 2007.

A handwritten signature in black ink, appearing to read "Kurt S. Browning".

Secretary of State

DSD 99 (3/03)

The original document has a reflective line mark in paper. Hold at an angle to view when checking.

** Unofficial **

CERTIFICATE OF COUNTY CANVASSING BOARD

STATE OF FLORIDA

Charlotte County

We, the undersigned, W. WAYNE WOODARD, County Judge,
MACY HORTON, Supervisor of Elections, and
THOMAS G. MOORE, Chairman of the Board of County
 Commissioners, constituting the Board of County Canvassers in and for said
 County, do hereby certify that we met on the 9th day of November,
 A.D., 2006, and proceeded publicly to canvass the votes given for the several
 offices and persons herein specified at the **General Election** held on the 7th day of
 November, A.D., 2006 as shown by the returns on file in the office of the
 Supervisor of Elections. We do hereby certify from said returns as follows:

For United States Senator the whole number of votes cast was 55,009 of
which number

- Katherine Harris (REP) received 22,817 votes
- Bill Nelson (DEM) received 31,175 votes
- Floyd Ray Frazier (NPA) received 240 votes
- Belinda Noah (NPA) received 338 votes
- Brian Moore (NPA) received 221 votes
- Roy Tanner (NPA) received 199 votes
- Lawrence Scott (WRI) received 3 votes
- Bernard Senter (WRI) received 0 votes

For United States Representative, Thirteenth Congressional District the whole
number of votes cast was 8,729 of which number

- Vern Buchanan (REP) received 4,459 votes
- Christine Jennings (DEM) received 4,270 votes

For United States Representative, Fourteenth Congressional District the whole
number of votes cast was 10,262 of which number

- Connie Mack (REP) received 6,302 votes
- Robert M. Neeld (DEM) received 3,953 votes
- Dan (WRI) received 0 votes
- Richard Grayson (WRI) received 0 votes

For United States Representative, Sixteenth Congressional District the whole
number of votes cast was 35,657 of which number

1755

** Unofficial **

Joe Negron (REP) received 17,334 votes
Tim Mahoney (DEM) received 17,299 votes
Emmie Ross (NPA) received 1,024 votes

For Governor and Lieutenant Governor the whole number of votes cast was

55,218 of which number

Charlie Crist and Jeff Kottkamp (REP) received 32,357 votes
Jim Davis and Daryl L. Jones (DEM) received 21,608 votes
Max Linn and Tom Macklin (REF) received 734 votes
Richard Paul Dembinsky and Dr. Joe Smith (NPA) received 205 votes
John Wayne Smith and James J. Kearney (NPA) received 184 votes
Karl C.C. Behm and Carol Castagnero (NPA) received 163 votes
Omari Musa and Ellen Brickley (WRI) received 0 votes
Piotr Blass and Jinamarie Gallo (WRI) received 0 votes
C. C. Reed and Mr. T (WRI) received 0 votes

For Attorney General the whole number of votes cast was 44,184 of which number

Bill McCollum (REP) received 25,376 votes
Walter "Skip" Campbell (DEM) received 18,728 votes

For Chief Financial Officer the whole number of votes cast was 53,532 of which number

Tom Lee (REP) received 27,647 votes
Alex Sink (DEM) received 25,885 votes

For Commissioner of Agriculture the whole number of votes cast was

52,610 of which number

Charles H. Bronson (REP) received 31,358 votes
Eric Copeland (DEM) received 21,252 votes

For State Representative, Seventy-First House District the whole number of votes

cast was 24,614 of which number

Michael J. Grant (REP) received 24,015 votes
Robert Peter Rice (WRI) received 20 votes

For Board of County Commissioners, District Four the whole number of votes cast

was 53,457 of which number

1756

** Unofficial **

Richard D. Loftus (REP) received 28,271 votes

Joan Fischer (DEM) received 25,186 votes

For County Miscellaneous Boards, Group Two the whole number of votes cast was

48,079 of which number

Don Lee (REP) received 30,787 votes

Robert Hancik (NPA) received 17,292 votes

Wayne Woodard
County Judge

M. V. Hester
Supervisor of Elections

Thomas J. Moore
Chairman, Board of County Commissioners

1757

** Unofficial **

CERTIFICATE OF COUNTY CANVASSING BOARD

STATE OF FLORIDA

Charlotte County

We, the undersigned, W. WAYNE WOODARD, County Judge,
MAC V. HORTON, Supervisor of Elections, and
THOMAS G. MOORE, Chairman of the Board of County
Commissioners, constituting the Board of County Canvassers in and for said
County, do hereby certify that we met on the 9TH day of November,
A.D., 2006, and proceeded publicly to canvass the votes given for the several
offices and persons herein specified at the **Nonpartisan Election** held on the 7th
day of November, A.D., 2006 as shown by the returns on file in the office of the
Supervisor of Elections. We do hereby certify from said returns as follows:

Retention of Justice R. Fred Lewis of the Supreme Court

YES 33,079 votes
NO 13,874 votes

Retention of Justice Barbara Joan Pariente of the Supreme Court

YES 33,913 votes
NO 13,428 votes

Retention of Justice Peggy A. Quince of the Supreme Court

YES 33,838 votes
NO 13,218 votes

Retention of Judge Darryl C. Casanueva of the Second District Court of Appeal

YES 34,849 votes
NO 12,433 votes

Retention of Judge Charles A. Davis Jr. of the Second District Court of Appeal

YES 34,297 votes
NO 12,363 votes

Retention of Judge Edward C. LaRose of the Second District Court of Appeal

YES 33,534 votes
NO 12,651 votes

Retention of Judge E.J. Salcines of the Second District Court of Appeal

1758

** Unofficial **

YES 32,675 votes
NO 13,393 votes

Retention of Judge Thomas E. Stringer Sr. of the Second District Court of Appeal

YES 33,551 votes
NO 12,535 votes

For Circuit Judge, Twentieth Judicial Circuit, Group Twenty-Nine the whole number of votes cast was 46,102 of which number

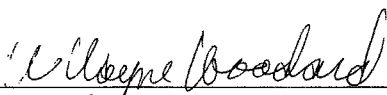
Miguel C. Fernandez III received 18,441 votes

Lynne E. Dailey received 27,661 votes

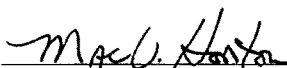
For Circuit Judge, Twentieth Judicial Circuit, Group Thirty the whole number of votes cast was 45,497 of which number

Liz Adams received 28,819 votes

Franklin B. Mann Jr. received 16,678 votes



County Judge



Supervisor of Elections



Chairman, Board of County Commissioners

** Unofficial **

CERTIFICATE OF COUNTY CANVASSING BOARD

STATE OF FLORIDA

Charlotte County

We, the undersigned, W. WAYNE WOODARD, County Judge, MAC V. HORTON, Supervisor of Elections, and THOMAS S. MOORE, Chairman of the Board of County Commissioners, constituting the Board of County Canvassers in and for said County, do hereby certify that we met on the 9TH day of November, A.D., 2006, and proceeded publicly to canvass the votes given for Proposed Amendments to the Constitution of the State of Florida and local referendums on the 7th day of November, A.D., 2006 as shown by the returns on file in the office of the Supervisor of Elections. We do hereby certify from said returns as follows:

NO. 1
CONSTITUTIONAL AMENDMENT
ARTICLE III, SECTION 19

STATE PLANNING AND BUDGET PROCESS

Proposing amendments to the State Constitution to limit the amount of nonrecurring general revenue which may be appropriated for recurring purposes in any fiscal year to 3 percent of the total general revenue funds estimated to be available, unless otherwise approved by a three-fifths vote of the Legislature; to establish a Joint Legislative Budget Commission, which shall issue long-range financial outlooks; to provide for limited adjustments in the state budget without the concurrence of the full Legislature, as provided by general law; to reduce the number of times trust funds are automatically terminated; to require the preparation and biennial revision of a long-range state planning document; and to establish a Government Efficiency Task Force and specify its duties.

YES 29,560 votes
NO 21,044 votes

NO. 3
CONSTITUTIONAL AMENDMENT
ARTICLE XI, SECTION 5

REQUIRING BROADER PUBLIC SUPPORT FOR CONSTITUTIONAL AMENDMENTS OR REVISIONS

Proposes an amendment to Section 5 of Article XI of the State Constitution to require that any proposed amendment to or revision of the State Constitution, whether proposed by the Legislature, by initiative, or by any other method, must be approved by at least 60 percent of the voters of the state voting on the measure, rather than by a simple majority. This proposed amendment would not change the current requirement that a proposed constitutional amendment imposing a new state tax or fee be approved by at least 2/3 of the voters of the state voting in the election in which such an amendment is considered.

YES 32,287 votes
NO 20,382 votes

1760

** Unofficial **

**NO. 4
CONSTITUTIONAL AMENDMENT
ARTICLE X, SECTION 27**

PROTECT PEOPLE, ESPECIALLY YOUTH, FROM ADDICTION, DISEASE, AND OTHER HEALTH HAZARDS OF USING TOBACCO

To protect people, especially youth, from addiction, disease, and other health hazards of using tobacco, the Legislature shall use some Tobacco Settlement money annually for a comprehensive statewide tobacco education and prevention program using Centers for Disease Control best practices. Specifies some program components, emphasizing youth, requiring one-third of total annual funding for advertising. Annual funding is 15% of 2005 Tobacco Settlement payments to Florida, adjusted annually for inflation. Provides definitions. Effective immediately.

This amendment requires state government to appropriate approximately \$57 million in 2007 for the Comprehensive Statewide Tobacco Education and Prevention Program. Thereafter, this amount will increase annually with inflation. This spending is expected to reduce tobacco consumption. As a result, some long-term savings to state and local government health and insurance programs are probable, but indeterminate. Also, minor revenue loss to state government is probable, but indeterminate.

YES 31,637 votes
NO 21,666 votes

**NO. 6
CONSTITUTIONAL AMENDMENT
ARTICLE VII, SECTION 6, ARTICLE XII, SECTION 26**

INCREASED HOMESTEAD EXEMPTION

Proposing amendment of the State Constitution to increase the maximum additional homestead exemption for low-income seniors from \$25,000 to \$50,000 and to schedule the amendment to take effect January 1, 2007, if adopted.

YES 41,290 votes
NO 12,973 votes

**NO. 7
CONSTITUTIONAL AMENDMENT
ARTICLE VII, SECTION 6**

PERMANENTLY DISABLED VETERANS' DISCOUNT ON HOMESTEAD AD VALOREM TAX

Proposing an amendment to the State Constitution to provide a discount from the amount of ad valorem tax on the homestead of a partially or totally permanently disabled veteran who is age 65 or older who was a Florida resident at the time of entering military service, whose disability was combat-related, and who was honorably discharged; to specify the percentage of the discount as equal to the percentage of the veteran's permanent service-connected disability; to specify qualification requirements for the discount; to authorize the Legislature to waive the annual application requirement in subsequent years by general law; and to specify that the provision takes effect December 7, 2006, is self-executing, and does not require implementing legislation.

YES 41,019 votes
NO 12,528 votes

1761

** Unofficial **

NO. 8
CONSTITUTIONAL AMENDMENT
ARTICLE X, SECTION 6

EMINENT DOMAIN

Proposing an amendment to the State Constitution to prohibit the transfer of private property taken by eminent domain to a natural person or private entity; providing that the Legislature may by general law passed by a three-fifths vote of the membership of each house of the Legislature permit exceptions allowing the transfer of such private property; and providing that this prohibition on the transfer of private property taken by eminent domain is applicable if the petition of taking that initiated the condemnation proceeding was filed on or after January 2, 2007.

YES 37,250 votes
NO 14,923 votes

COUNTY REFERENDUM

ESTABLISH ENVIRONMENTALLY SENSITIVE LANDS PROGRAM AND BOND REFERENDUM FOR THE ACQUISITION OF ENVIRONMENTALLY SENSITIVE LANDS

Shall Charlotte County be authorized to issue bonds over the life of an environmentally sensitive lands program in an aggregate principal amount not exceeding seventy-seven million dollars (\$77,000,000) bearing interest not exceeding the maximum lawful rate, to finance the acquisition of environmentally sensitive lands, payable from ad valorem taxes not exceeding 0.20 mills for a period of twenty (20) years from issuance of such bonds.

27,758 YES, FOR BONDS
24,473 NO, AGAINST BONDS

W. Elaine Woodard
County Judge

Mac U. Horton
Supervisor of Elections

Thomas J. Neenan
Chairman, Board of County Commissioners

Total ballots cast in Charlotte County was 55,735 for a 47.54 percent turnout.

1762

11/15/2006 15:48 9416372231

SOE CHARLOTTE CT/

PAGE 01/02

FAX Transmittal

Mac Horton

Charlotte County Supervisor of Elections

P.O. Box 511229

Punta Gorda, FL 33951-1229

941/637-2232

FAX-941/637-2231

To: Dawn Roberts, Esq., Director
Division of Elections

Fax#: (850) 245-6217

From: Mac V. Horton, Charlotte County
Supervisor of Elections

Pages: 2 (Including Cover Sheet)

Date: November 15, 2006

* Please see attached recount information.

ND11-16-2006 15:53

9416372231

97%

P.01

1763

11/16/2006 15:40 3416372231

SOE CHARLOTTE CTY

PAGE 02/02



MAC V. HORTON

CHARLOTTE COUNTY
SUPERVISOR OF ELECTIONS
410 Taylor Street
Punta Gorda, FL 33950

Mailing:
P.O. Box 511229
Punta Gorda, FL 33951-1229
(941) 637-2232

November 16, 2006

Dawn K. Roberts, Esq., Director
Division of Elections
R.A. Gray Building, Room 316
500 South Bronough Street
Tallahassee, FL 32399-0250

Dear Ms. Roberts:

I am pleased to announce that the manual recount performed today by the Charlotte County Canvassing Board, has not changed other than one undervote. The Canvassing Board agreed unanimously that this vote, which was not a true undervote, should be for Christine Jennings.

Should you require additional information, please feel free to contact me.

Sincerely,

A handwritten signature in cursive script that reads "Mac V. Horton".

Mac V. Horton
Supervisor of Elections
Charlotte County
941-637-2232
www.charlottevotes.com

"Exercise your right to vote"

11/16/2006 15:40

3416372231

SOE

P. 02

A black and white copy of this document is not official.

**STATE OF FLORIDA
DEPARTMENT OF STATE
Division of Elections**

I, Kurt S. Browning, Secretary of State of the State of Florida, do hereby certify that the attached is a true and correct copy of the unofficial Certificate of the Desoto County Canvassing Board for the General Election held on the Seventh day of November, 2006, as shown by the records of this office.



Given under my hand and the Great Seal of the State of Florida, at Tallahassee, the Capitol, this the 3rd day of January, A. D. 2007.


Secretary of State

DSDE 99 (3/03)

The original document has a reflective line mark in paper. Hold at an angle to view when checking.

** Unofficial **

CERTIFICATE OF COUNTY CANVASSING BOARD

STATE OF FLORIDA

Desoto County

We, the undersigned, DON T. HALL, County Judge,
MARK F. NEALEY, Supervisor of Elections, and
JERRY H. HILL, Chairman of the Board of County
Commissioners, constituting the Board of County Canvassers in and for said
County, do hereby certify that we met on the 8th day of November,
A.D., 2006, and proceeded publicly to canvass the votes given for the several
offices and persons herein specified at the **General Election** held on the 7th day of
November, A.D., 2006 as shown by the returns on file in the office of the
Supervisor of Elections. We do hereby certify from said returns as follows:

For United States Senator the whole number of votes cast was 6618 of
which number

Katherine Harris (REP) received 2869 votes
Bill Nelson (DEM) received 3655 votes
Floyd Ray Frazier (NPA) received 19 votes
Belinda Noah (NPA) received 34 votes
Brian Moore (NPA) received 19 votes
Roy Tanner (NPA) received 16 votes
Lawrence Scott (WRI) received 0 votes
Bernard Senter (WRI) received 0 votes

For United States Representative, Thirteenth Congressional District the whole
number of votes cast was 6518 of which number

Vern Buchanan (REP) received 3464 votes
Christine Jennings (DEM) received 3054 votes

For Governor and Lieutenant Governor the whole number of votes cast was
6598 of which number

Charlie Crist and Jeff Kottkamp (REP) received 3785 votes
Jim Davis and Daryl L. Jones (DEM) received 2602 votes
Max Linn and Tom Macklin (REF) received 133 votes
Richard Paul Dembinsky and Dr. Joe Smith (NPA) received 24 votes
John Wayne Smith and James J. Kearney (NPA) received 29 votes
Karl C.C. Behm and Carol Castagnero (NPA) received 19 votes
Omari Musa and Ellen Brickley (WRI) received 0 votes

** Unofficial **

Piotr Blass and Jinamarie Gallo (WRI) received 0 votes

C. C. Reed and Mr. T (WRI) received 0 votes

For Attorney General the whole number of votes cast was 6466 of which number

Bill McCollum (REP) received 3710 votes

Walter "Skip" Campbell (DEM) received 2756 votes

For Chief Financial Officer the whole number of votes cast was 6194 of which number

Tom Lee (REP) received 3163 votes

Alex Sink (DEM) received 3031 votes

For Commissioner of Agriculture the whole number of votes cast was 6415 of which number

Charles H. Bronson (REP) received 4076 votes

Eric Copeland (DEM) received 2339 votes

For Board of County Commissioners, District Four the whole number of votes cast was 6552 of which number

Forest "Mel" Jackson (REP) received 2539 votes

Elton A. Langford (DEM) received 4013 votes

Oran Hahn
County Judge

Wanda J. Neagle
Supervisor of Elections

Jimmy H. Hester
Chairman, Board of County Commissioners

** Unofficial **

CERTIFICATE OF COUNTY CANVASSING BOARD

STATE OF FLORIDA

Desoto County

We, the undersigned, DON T. HALL, County Judge,
MARK F. NEALEY, Supervisor of Elections, and
JERRY H. HILL, Chairman of the Board of County
Commissioners, constituting the Board of County Canvassers in and for said
County, do hereby certify that we met on the 8th day of November,
A.D., 2006, and proceeded publicly to canvass the votes given for the several
offices and persons herein specified at the **Nonpartisan Election** held on the 7th
day of November, A.D., 2006 as shown by the returns on file in the office of the
Supervisor of Elections. We do hereby certify from said returns as follows:

Retention of Justice R. Fred Lewis of the Supreme Court

YES 3617 votes
NO 1981 votes

Retention of Justice Barbara Joan Pariente of the Supreme Court

YES 3496 votes
NO 2044 votes

Retention of Justice Peggy A. Quince of the Supreme Court

3614
YES _____ votes
NO 1997 votes

Retention of Judge Darryl C. Casanueva of the Second District Court of Appeal

YES 3617 votes
NO 1933 votes

Retention of Judge Charles A. Davis Jr. of the Second District Court of Appeal

YES 3763 votes
NO 1788 votes

Retention of Judge Edward C. LaRose of the Second District Court of Appeal

YES 3553 votes
NO 1901 votes

Retention of Judge E.J. Salcines of the Second District Court of Appeal

** Unofficial **

YES 3482 votes

NO 1983 votes

Retention of Judge Thomas E. Stringer Sr. of the Second District Court of Appeal

YES 3641 votes

NO 1837 votes

For Circuit Judge, Twelfth Judicial Circuit, Group Twenty-One the whole number of votes cast was 5634 of which number

Rochelle Faylor Curley received 2678 votes

Preston DeVilbiss Jr. received 2956 votes

Dr. Hill
County Judge

Walter J. Negley
Supervisor of Elections

James D. Hill
Chairman, Board of County Commissioners

** Unofficial **

CERTIFICATE OF COUNTY CANVASSING BOARD

STATE OF FLORIDA

Desoto County

We, the undersigned, DON T. HALL, County Judge, MARK F. NEALEY, Supervisor of Elections, and JEFFREY H. HILL, Chairman of the Board of County Commissioners, constituting the Board of County Canvassers in and for said County, do hereby certify that we met on the 8th day of November, A.D., 2006, and proceeded publicly to canvass the votes given for Proposed Amendments to the Constitution of the State of Florida and local referendums on the 7th day of November, A.D., 2006 as shown by the returns on file in the office of the Supervisor of Elections. We do hereby certify from said returns as follows:

NO. 1
CONSTITUTIONAL AMENDMENT
ARTICLE III SECTION 19

STATE PLANNING AND BUDGET PROCESS

Proposing amendments to the State Constitution to limit the amount of nonrecurring general revenue which may be appropriated for recurring purposes in any fiscal year to 3 percent of the total general revenue funds estimated to be available, unless otherwise approved by a three-fifths vote of the Legislature; to establish a Joint Legislative Budget Commission, which shall issue long-range financial outlooks: to provide for limited adjustments in the state budget without the concurrence of the full Legislature, as provided by general law; to reduce the number of times trust funds are automatically terminated; to require the preparation and biennial revision of a long-range state planning document; and to establish a Government Efficiency Task Force and specify its duties.

YES 3261 votes
NO 2575 votes

NO. 3
CONSTITUTIONAL AMENDMENT
ARTICLE XI SECTION 5

REQUIRING BROADER PUBLIC SUPPORT FOR CONSTITUTIONAL AMENDMENTS OR REVISIONS

Proposes an amendment to Section 5 of Article XI of the State Constitution to require that any proposed amendment to or revision of the State Constitution, whether proposed by the Legislature, by initiative, or by any other method, must be approved by at least 60 percent of the voters of the state voting on the measure, rather than by a simple majority. This proposed amendment would not change the current requirement that a proposed constitutional amendment imposing a new state tax or fee be approved by at least 2/3 of the voters of the state voting in the election in which such an amendment is considered.

YES 3694 votes
NO 2411 votes

** Unofficial **

NO. 4
CONSTITUTIONAL AMENDMENT
ARTICLE X, SECTION 27

PROTECT PEOPLE, ESPECIALLY YOUTH, FROM ADDICTION, DISEASE, AND OTHER HEALTH HAZARDS OF USING TOBACCO

To protect people, especially youth, from addiction, disease, and other health hazards of using tobacco, the Legislature shall use some Tobacco Settlement money annually for a comprehensive statewide tobacco education and prevention program using Centers for Disease Control best practices. Specifies some program components, emphasizing youth, requiring one-third of total annual funding for advertising. Annual funding is 15% of 2005 Tobacco Settlement payments to Florida, adjusted annually for inflation. Provides definitions. Effective immediately.

This amendment requires state government to appropriate approximately \$57 million in 2007 for the Comprehensive Statewide Tobacco Education and Prevention Program. Thereafter, this amount will increase annually with inflation. This spending is expected to reduce tobacco consumption. As a result, some long-term savings to state and local government health and insurance programs are probable, but indeterminate. Also, minor revenue loss to state government is probable, but indeterminate.

YES 3902 votes
NO 2232 votes

NO. 6
CONSTITUTIONAL AMENDMENT
ARTICLE VII, SECTION 6, ARTICLE XII SECTION 26

INCREASED HOMESTEAD EXEMPTION

Proposing amendment of the State Constitution to increase the maximum additional homestead exemption for low-income seniors from \$25,000 to \$50,000 and to schedule the amendment to take effect January 1, 2007, if adopted.

YES 4818 votes
NO 1430 votes

NO. 7
CONSTITUTIONAL AMENDMENT
ARTICLE VII, SECTION 6

PERMANENTLY DISABLED VETERANS' DISCOUNT ON HOMESTEAD AD VALOREM TAX

Proposing an amendment to the State Constitution to provide a discount from the amount of ad valorem tax on the homestead of a partially or totally permanently disabled veteran who is age 65 or older who was a Florida resident at the time of entering military service, whose disability was combat-related, and who was honorably discharged; to specify the percentage of the discount as equal to the percentage of the veteran's permanent service-connected disability; to specify qualification requirements for the discount; to authorize the Legislature to waive the annual application requirement in subsequent years by general law; and to specify that the provision takes effect December 7, 2006, is self-executing, and does not require implementing legislation.

YES 5024 votes
NO 1175 votes

1771

Nov 09 06 04:23p

DeSoto Elections

(863)993-4875

P.8

** Unofficial **

NO. 8
CONSTITUTIONAL AMENDMENT
ARTICLE X, SECTION 6

EMINENT DOMAIN

Proposing an amendment to the State Constitution to prohibit the transfer of private property taken by eminent domain to a natural person or private entity; providing that the Legislature may by general law passed by a three-fifths vote of the membership of each house of the Legislature permit exceptions allowing the transfer of such private property; and providing that this prohibition on the transfer of private property taken by eminent domain is applicable if the petition of taking that initiated the condemnation proceeding was filed on or after January 2, 2007

YES 4294 votes

NO 1727 votes

Enter county referendums here

DM: HCU
County Judge

Mark F. Negley
Supervisor of Elections

James W. Hoop
Chairman, Board of County Commissioners

Total ballots cast in Desoto County was 6665 for a 42.52 percent turnout.

1772

Nov 09 06 04:22p

DeSoto Elections

(863)993-4875

P. 1

SUPERVISOR OF ELECTIONS OFFICE
DE SOTO COUNTY, FLORIDA
MARK F. NEGLEY, SOP
PO BOX 89
ARCADIA, FL 34265

FACSIMILE TRANSMITTAL SHEET

TO: FROM: KELLI M JOHNSON

COMPANY: *DOE* PHONE: 863-993-4872

FAX NUMBER: *850-245-6260* DATE: *11-9-2006*

RE: *C. Artz* TOTAL NO. OF PAGES, INCLUDING COVER:

URGENT FOR REVIEW PLEASE COMMENT PLEASE REPLY PLEASE RECYCLE

NOTES/COMMENTS:

A black and white copy of this document is not official.

**STATE OF FLORIDA
DEPARTMENT OF STATE
Division of Elections**

I, Kurt S. Browning, Secretary of State of the State of Florida, do hereby certify that the attached is a true and correct copy of the unofficial Certificate of the Hardee County Canvassing Board for the General Election held on the Seventh day of November, 2006, as shown by the records of this office.



Given under my hand and the Great Seal of the State of Florida, at Tallahassee, the Capitol, this the 3rd day of January, A. D. 2007.

Secretary of State

DSD 99 (3/03)

The original document has a reflective line mark in paper. Hold at an angle to view when checking.

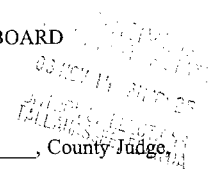
** Unofficial **

CERTIFICATE OF COUNTY CANVASSING BOARD

STATE OF FLORIDA

Hardee County

We, the undersigned, Marcus Ezelle, County Judge, Jeffery Ussery, Supervisor of Elections, and Robert R. Smith Jr., Chairman of the Board of County Commissioners, constituting the Board of County Canvassers in and for said County, do hereby certify that we met on the 9th day of November, A.D., 2006, and proceeded publicly to canvass the votes given for the several offices and persons herein specified at the **General Election** held on the 7th day of November, A.D., 2006 as shown by the returns on file in the office of the Supervisor of Elections. We do hereby certify from said returns as follows:



For United States Senator the whole number of votes cast was 4537 of which number

- Katherine Harris (REP) received 2157 votes
- Bill Nelson (DEM) received 2328 votes
- Floyd Ray Frazier (NPA) received 18 votes
- Belinda Noah (NPA) received 17 votes
- Brian Moore (NPA) received 7 votes
- Roy Tanner (NPA) received 9 votes
- Lawrence Scott (WRI) received 0 votes
- Bernard Senter (WRI) received 0 votes

For United States Representative, Thirteenth Congressional District the whole number of votes cast was 4319 of which number

- Vern Buchanan (REP) received 2632 votes
- Christine Jennings (DEM) received 1687 votes

For Governor and Lieutenant Governor the whole number of votes cast was ~~4539~~ 4539 of which number

- Charlie Crist and Jeff Kottkamp (REP) received ~~2580~~ 2580 votes
- Jim Davis and Daryl L. Jones (DEM) received 1720 votes
- Max Linn and Tom Macklin (REF) received 202 votes
- Richard Paul Dembinsky and Dr. Joe Smith (NPA) received 7 votes
- John Wayne Smith and James J. Kearney (NPA) received 20 votes
- Karl C.C. Behm and Carol Castagnero (NPA) received 7 votes
- Omari Musa and Ellen Brickley (WRI) received 0 votes

1775

** Unofficial **

Piotr Blass and Jinamarie Gallo (WRI) received 0 votes

C. C. Reed and Mr. T (WRI) received 0 votes

For Attorney General the whole number of votes cast was 4420 of which number

Bill McCollum (REP) received 2822 votes

Walter "Skip" Campbell (DEM) received 1598 votes

For Chief Financial Officer the whole number of votes cast was 4293 of which number

Tom Lee (REP) received 2503 votes

Alex Sink (DEM) received 1790 votes

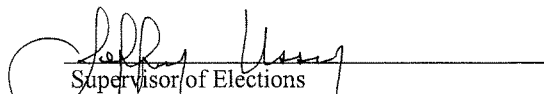
For Commissioner of Agriculture the whole number of votes cast was

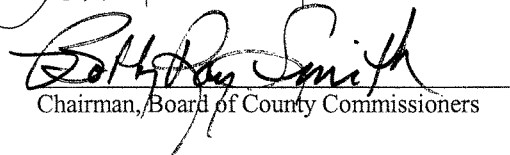
4445 of which number

Charles H. Bronson (REP) received 3168 votes

Eric Copeland (DEM) received 1277 votes


County Judge


Supervisor of Elections


Chairman, Board of County Commissioners

** Unofficial **

CERTIFICATE OF COUNTY CANVASSING BOARD

STATE OF FLORIDA

Hardee County

We, the undersigned, Marcus Ezelle, County Judge,
Jeffery Ussery, Supervisor of Elections, and
Robert R. Smith Jr., Chairman of the Board of
County Commissioners, constituting the Board of County Canvassers in and for
said County, do hereby certify that we met on the 9th day of November,
A.D., 2006, and proceeded publicly to canvass the votes given for the several
offices and persons herein specified at the **Nonpartisan Election** held on the 7th
day of November, A.D., 2006 as shown by the returns on file in the office of the
Supervisor of Elections. We do hereby certify from said returns as follows:

RECEIVED
COUNTY CLERK
HARDEE COUNTY
NOV 14 2006

Retention of Justice R. Fred Lewis of the Supreme Court

YES 2333 votes
NO 1557 votes

Retention of Justice Barbara Joan Pariente of the Supreme Court

YES 2221 votes
NO 1650 votes

Retention of Justice Peggy A. Quince of the Supreme Court

YES 2286 votes
NO 1586 votes

Retention of Judge Darryl C. Casanueva of the Second District Court of Appeal

YES 2266 votes
NO 1531 votes

Retention of Judge Charles A. Davis Jr. of the Second District Court of Appeal

YES 2533 votes
NO 1301 votes

Retention of Judge Edward C. LaRose of the Second District Court of Appeal

YES 2326 votes
NO 1472 votes

Retention of Judge E.J. Salcines of the Second District Court of Appeal

1777

** Unofficial **

YES 2260 votes
NO 1537 votes

Retention of Judge Thomas E. Stringer Sr. of the Second District Court of Appeal

YES 2392 votes
NO 1391 votes

For Circuit Judge, Tenth Judicial Circuit, Group Twenty-Seven the whole number of votes cast was 3498 of which number

Ernest M. Jones received 1679 votes
David R. Carmichael received 1819 votes

For School Board, District One the whole number of votes cast was 4209 of which number

~~Don Herndon received _____ votes~~
Joe H. Jones received 2147 votes
Paul G. Samuels received 2062 votes

For School Board, District Three the whole number of votes cast was _____ of which number


~~Teresa Crawford received _____ votes~~
~~Gina Neuhofer received _____ votes~~

For School Board, District Four the whole number of votes cast was _____ of which number

~~William Glenn Bergens received _____ votes~~
~~Kim Barwick Hanshaw received _____ votes~~
~~Janice Platt received _____ votes~~

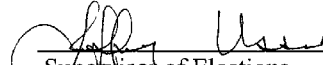
For School Board, District Five the whole number of votes cast was _____ of which number

~~George Wendell Cotton received _____ votes~~
~~Brian D. Pohl received _____ votes~~



County Judge

1778

** Unofficial **



Supervisor of Elections



Chairman, Board of County Commissioners

** Unofficial **

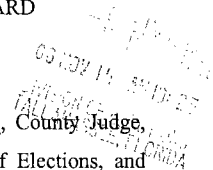
CERTIFICATE OF COUNTY CANVASSING BOARD

STATE OF FLORIDA

Hardee County

We, the undersigned, Marcus Ezelle, County Judge,
Jeffery Ussery, Supervisor of Elections, and
Robert R. Smith Jr., Chairman of the Board of

County Commissioners, constituting the Board of County Canvassers in and for said County, do hereby certify that we met on the 9th day of November, A.D., 2006, and proceeded publicly to canvass the votes given for Proposed Amendments to the Constitution of the State of Florida and local referendums on the 7th day of November, A.D., 2006 as shown by the returns on file in the office of the Supervisor of Elections. We do hereby certify from said returns as follows:



NO. 1
CONSTITUTIONAL AMENDMENT
ARTICLE III, SECTION 19

STATE PLANNING AND BUDGET PROCESS

Proposing amendments to the State Constitution to limit the amount of nonrecurring general revenue which may be appropriated for recurring purposes in any fiscal year to 3 percent of the total general revenue funds estimated to be available, unless otherwise approved by a three-fifths vote of the Legislature; to establish a Joint Legislative Budget Commission, which shall issue long-range financial outlooks; to provide for limited adjustments in the state budget without the concurrence of the full Legislature, as provided by general law; to reduce the number of times trust funds are automatically terminated; to require the preparation and biennial revision of a long-range state planning document; and to establish a Government Efficiency Task Force and specify its duties.

YES 2307 votes
NO 1696 votes

NO. 3
CONSTITUTIONAL AMENDMENT
ARTICLE XI, SECTION 5

REQUIRING BROADER PUBLIC SUPPORT FOR CONSTITUTIONAL AMENDMENTS OR REVISIONS

Proposes an amendment to Section 5 of Article XI of the State Constitution to require that any proposed amendment to or revision of the State Constitution, whether proposed by the Legislature, by initiative, or by any other method, must be approved by at least 60 percent of the voters of the state voting on the measure, rather than by a simple majority. This proposed amendment would not change the current requirement that a proposed constitutional amendment imposing a new state tax or fee be approved by at least 2/3 of the voters of the state voting in the election in which such an amendment is considered.

YES 2414 votes
NO 1786 votes

1780

** Unofficial **

**NO. 4
CONSTITUTIONAL AMENDMENT
ARTICLE X, SECTION 27**

PROTECT PEOPLE, ESPECIALLY YOUTH, FROM ADDICTION, DISEASE, AND OTHER HEALTH HAZARDS OF USING TOBACCO

To protect people, especially youth, from addiction, disease, and other health hazards of using tobacco, the Legislature shall use some Tobacco Settlement money annually for a comprehensive statewide tobacco education and prevention program using Centers for Disease Control best practices. Specifies some program components, emphasizing youth, requiring one-third of total annual funding for advertising. Annual funding is 15% of 2005 Tobacco Settlement payments to Florida, adjusted annually for inflation. Provides definitions. Effective immediately.

This amendment requires state government to appropriate approximately \$57 million in 2007 for the Comprehensive Statewide Tobacco Education and Prevention Program. Thereafter, this amount will increase annually with inflation. This spending is expected to reduce tobacco consumption. As a result, some long-term savings to state and local government health and insurance programs are probable, but indeterminate. Also, minor revenue loss to state government is probable, but indeterminate.

YES 2615 votes
NO 1594 votes

**NO. 6
CONSTITUTIONAL AMENDMENT
ARTICLE VII, SECTION 6, ARTICLE XII, SECTION 26**

INCREASED HOMESTEAD EXEMPTION

Proposing amendment of the State Constitution to increase the maximum additional homestead exemption for low-income seniors from \$25,000 to \$50,000 and to schedule the amendment to take effect January 1, 2007, if adopted.

YES 3080 votes
NO 1290 votes

**NO. 7
CONSTITUTIONAL AMENDMENT
ARTICLE VII, SECTION 6**

PERMANENTLY DISABLED VETERANS' DISCOUNT ON HOMESTEAD AD VALOREM TAX

Proposing an amendment to the State Constitution to provide a discount from the amount of ad valorem tax on the homestead of a partially or totally permanently disabled veteran who is age 65 or older who was a Florida resident at the time of entering military service, whose disability was combat-related, and who was honorably discharged; to specify the percentage of the discount as equal to the percentage of the veteran's permanent service-connected disability; to specify qualification requirements for the discount; to authorize the Legislature to waive the annual application requirement in subsequent years by general law; and to specify that the provision takes effect December 7, 2006, is self-executing, and does not require implementing legislation.

YES 3384 votes
NO 930 votes

1781

** Unofficial **

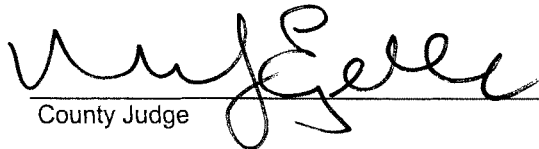
NO. 8
CONSTITUTIONAL AMENDMENT
ARTICLE X, SECTION 6

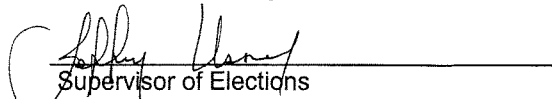
EMINENT DOMAIN

Proposing an amendment to the State Constitution to prohibit the transfer of private property taken by eminent domain to a natural person or private entity; providing that the Legislature may by general law passed by a three-fifths vote of the membership of each house of the Legislature permit exceptions allowing the transfer of such private property; and providing that this prohibition on the transfer of private property taken by eminent domain is applicable if the petition of taking that initiated the condemnation proceeding was filed on or after January 2, 2007.

YES 2801 votes
NO 1418 votes

Enter county referendums here


County Judge


Supervisor of Elections


Chairman, Board of County Commissioners

Total ballots cast in Hardee County was 4,555 for a 41.40 percent turnout.

** Second Unofficial **

CERTIFICATE OF COUNTY CANVASSING BOARD

STATE OF FLORIDA

Hardee County

We, the undersigned, Marcus Ezelle, County Judge,
Jeffery Ussery, Supervisor of Elections, and
Robert R. Smith Jr., County Commissioner,
constituting the Board of County Canvassers in and for said County, do hereby certify
that we met on the 14th day of November, A.D., 2006, and proceeded publicly
to canvass the votes given pursuant to the machine recount conducted for the office and
persons listed below, pursuant to Section 102.141, Florida Statutes, herein specified at the
General Election held on the 7th day of November, A.D., 2006, as shown by the returns
on file in the office of the Supervisor of Elections. We do hereby certify from said
returns as follows:

For United States Representative, Thirteenth Congressional District the whole number of
votes cast was 4312 of which number

Vern Buchanan (REP) received 2628 votes
Christine Jennings (DEM) received 1684 votes

The machine recount indicates there are 0 overvotes and undervotes.

Additionally, there are 0 provisional ballots in this race that have
not been canvassed.

Marcus Ezelle
County Judge
Jeffery Ussery
Supervisor of Elections
Robert R. Smith Jr.
County Commissioner

RECEIVED
03 NOV 17 01:04 PM
TALLAHASSEE, FLORIDA

A black and white copy of this document is not official.

**STATE OF FLORIDA
DEPARTMENT OF STATE
Division of Elections**

I, Kurt S. Browning, Secretary of State of the State of Florida, do hereby certify that the attached is a true and correct copy of the unofficial Certificate of the Manatee County Canvassing Board for the General Election held on the Seventh day of November, 2006, as shown by the records of this office.



Given under my hand and the Great Seal of the State of Florida, at Tallahassee, the Capitol, this the 3rd day of January, A. D. 2007.

A handwritten signature in cursive script, appearing to read "Kurt S. Browning".

Secretary of State

DSDE 99 (3/03)

The original document has a reflective line mark in paper. Hold at an angle to view when checking.

** Unofficial **

CERTIFICATE OF COUNTY CANVASSING BOARD

STATE OF FLORIDA

Manatee County

We, the undersigned, Robert Farrance, County Judge, Robert Sweat, Supervisor of Elections, and Joe Mc Clash, Chairman of the Board of County Commissioners, constituting the Board of County Canvassers in and for said County, do hereby certify that we met on the 7th day of November, A.D., 2006, and proceeded publicly to canvass the votes given for the several offices and persons herein specified at the **General Election** held on the 7th day of November, A.D., 2006 as shown by the returns on file in the office of the Supervisor of Elections. We do hereby certify from said returns as follows:

For United States Senator the whole number of votes cast was 99519 of which number

- Katherine Harris (REP) received 42671 votes
- Bill Nelson (DEM) received 55110 votes
- Floyd Ray Frazier (NPA) received 343 votes
- Belinda Noah (NPA) received 469 votes
- Brian Moore (NPA) received 450 votes
- Roy Tanner (NPA) received 334 votes
- Lawrence Scott (WRI) received _____ votes
- Bernard Senter (WRI) received _____ votes

For United States Representative, Eleventh Congressional District the whole number of votes cast was 3680 of which number

- Eddie Adams Jr. (REP) received 915 votes
- Kathy Castor (DEM) received 2759 votes
- Jim Greenwald (WRI) received _____ votes
- R. J. Spencer (WRI) received _____ votes

For United States Representative, Thirteenth Congressional District the whole number of votes cast was 94388 of which number

- Vern Buchanan (REP) received 50027 votes
- Christine Jennings (DEM) received 44361 votes

1785

** Unofficial **

For Governor and Lieutenant Governor the whole number of votes cast was

100059 of which number

Charlie Crist and Jeff Kottkamp (REP) received 58035 votes
Jim Davis and Daryl L. Jones (DEM) received 38547 votes
Max Linn and Tom Macklin (REF) received 2755 votes
Richard Paul Dembinsky and Dr. Joe Smith (NPA) received 236 votes
John Wayne Smith and James J. Kearney (NPA) received 227 votes
Karl C.C. Behm and Carol Castagnero (NPA) received 174 votes
Omari Musa and Ellen Brickley (WRI) received _____ votes
Piotr Blass and Jinamarie Gallo (WRI) received _____ votes
C. C. Reed and Mr. T (WRI) received _____ votes

For Attorney General the whole number of votes cast was 98269 of which
number

Bill McCollum (REP) received 54424 votes
Walter "Skip" Campbell (DEM) received 43845 votes

For Chief Financial Officer the whole number of votes cast was 96168 of
which number

Tom Lee (REP) received 48701 votes
Alex Sink (DEM) received 47467 votes

For Commissioner of Agriculture the whole number of votes cast was 97169
of which number

Charles H. Bronson (REP) received 60951 votes
Eric Copeland (DEM) received 36218 votes

For State Senator, Eighteenth Senatorial District the whole number of votes cast was
4525 of which number

Arthenia L. Joyner (DEM) received 4403 votes
Eric T. Suntich (WRI) received _____ votes

For State Representative, Sixty-Ninth House District the whole number of votes cast
was 2875 of which number

Laura A. Benson (REP) received 1366 votes
Keith Fitzgerald (DEM) received 1509 votes

1786

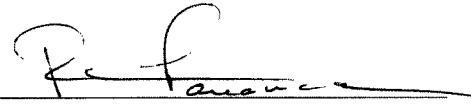
** Unofficial **

For Board of County Commissioners, District Six the whole number of votes cast was

96611 of which number

Carol Whitmore (REP) received 57040 votes

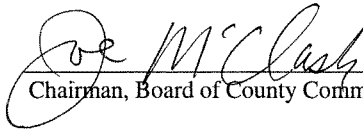
Sarah C. Meaker (DEM) received 39571 votes



County Judge



Supervisor of Elections



Chairman, Board of County Commissioners

10/13/23
10:23 AM
COUNTY CLERK

** Unofficial **

CERTIFICATE OF COUNTY CANVASSING BOARD

STATE OF FLORIDA

Manatee County

We, the undersigned, Robert Farrance, County Judge,
Robert Sweat, Supervisor of Elections, and
Joe Mc Clash, Chairman of the Board of County
Commissioners, constituting the Board of County Canvassers in and for said
County, do hereby certify that we met on the 7th day of November,
A.D., 2006, and proceeded publicly to canvass the votes given for the several
offices and persons herein specified at the **Nonpartisan Election** held on the 7th
day of November, A.D., 2006 as shown by the returns on file in the office of the
Supervisor of Elections. We do hereby certify from said returns as follows:

11:25
NOV 13 5:13:24
E.D. ...

Retention of Justice R. Fred Lewis of the Supreme Court

YES 60821 votes
NO 26496 votes

Retention of Justice Barbara Joan Pariente of the Supreme Court

YES 60878 votes
NO 26107 votes

Retention of Justice Peggy A. Quince of the Supreme Court

YES 61038 votes
NO 25593 votes

Retention of Judge Darryl C. Casanueva of the Second District Court of Appeal

YES 58786 votes
NO 25482 votes

Retention of Judge Charles A. Davis Jr. of the Second District Court of Appeal

YES 61880 votes
NO 23632 votes

Retention of Judge Edward C. LaRose of the Second District Court of Appeal

YES 60576 votes
NO 24501 votes

1788

** Unofficial **

Retention of Judge E.J. Salcines of the Second District Court of Appeal

YES 59220 votes
NO 25995 votes

Retention of Judge Thomas E. Stringer Sr. of the Second District Court of Appeal

YES 60898 votes
NO 23854 votes

For Circuit Judge, Twelfth Judicial Circuit, Group Twenty-One the whole number of votes cast was 85375 of which number

Rochelle Taylor Curley received 46454 votes
Preston DeVilbiss Jr. received 38921 votes

For School Board, District Four the whole number of votes cast was

84370 of which number

Bob C. Gause received 44311 votes
Joseph C. Miller Jr. received 40059 votes

For Palms of Terra Ceia Community Development District, Seat One the whole number of votes cast was 360 of which number

Edwin C. Bennett received 184 votes
Bradford J. Smith received 176 votes

For Palms of Terra Ceia Community Development District, Seat Three the whole number of votes cast was 350 of which number

Jacqueline C. Denton received 182 votes
Rebecca A. Eiss received 168 votes

For Lakewood Ranch Community Development District 4, Seat Two the whole number of votes cast was 541 of which number

Anne Fischer received 232 votes
Carlene M. Smith received 116 votes
Michael H. Spring received 193 votes

For Waterlefe Community Development District, Seat Three the whole number of votes cast was 486 of which number

Richard G. Donoghue received 191 votes
Rosalyn Warner received 295 votes

1789

** Unofficial **

For East Manatee Fire District, Seat Five the whole number of votes cast was

12631 of which number

Glenn A. Davis received 7531 votes

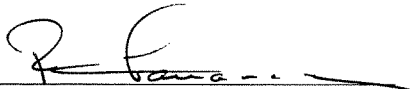
Kevin O'Neill received 5100 votes

For North River Fire District, Seat One the whole number of votes cast was

13275 of which number

Michael P. Browning received 8694 votes

Rhonda J. Denmark received 4581 votes



County Judge



Supervisor of Elections



Chairman, Board of County Commissioners

11/19/13
10:23
RECEIVED
CLERK OF COUNTY
COMMISSIONERS

** Unofficial **

CERTIFICATE OF COUNTY CANVASSING BOARD

STATE OF FLORIDA

Manatee County

We, the undersigned, Robert Farrance, County Judge, Robert Sweat, Supervisor of Elections, and Joe Mc Clash, Chairman of the Board of County Commissioners, constituting the Board of County Canvassers in and for said County, do hereby certify that we met on the 7th day of November, A.D., 2006, and proceeded publicly to canvass the votes given for Proposed Amendments to the Constitution of the State of Florida and local referendums on the 7th day of November, A.D., 2006 as shown by the returns on file in the office of the Supervisor of Elections. We do hereby certify from said returns as follows:

NO. 1
CONSTITUTIONAL AMENDMENT
ARTICLE III, SECTION 19

NOV 13 10 09 23
STATE

STATE PLANNING AND BUDGET PROCESS

Proposing amendments to the State Constitution to limit the amount of nonrecurring general revenue which may be appropriated for recurring purposes in any fiscal year to 3 percent of the total general revenue funds estimated to be available, unless otherwise approved by a three-fifths vote of the Legislature; to establish a Joint Legislative Budget Commission, which shall issue long-range financial outlooks; to provide for limited adjustments in the state budget without the concurrence of the full Legislature, as provided by general law; to reduce the number of times trust funds are automatically terminated; to require the preparation and biennial revision of a long-range state planning document; and to establish a Government Efficiency Task Force and specify its duties.

YES 54193 votes
NO 36358 votes

NO. 3
CONSTITUTIONAL AMENDMENT
ARTICLE XI, SECTION 5

REQUIRING BROADER PUBLIC SUPPORT FOR CONSTITUTIONAL AMENDMENTS OR REVISIONS

Proposes an amendment to Section 5 of Article XI of the State Constitution to require that any proposed amendment to or revision of the State Constitution, whether proposed by the Legislature, by initiative, or by any other method, must be approved by at least 60 percent of the voters of the state voting on the measure, rather than by a simple majority. This proposed amendment would not change the current requirement that a proposed constitutional amendment imposing a new state tax or fee be approved by at least 2/3 of the voters of the state voting in the election in which such an amendment is considered.

YES 52236 votes
NO 42455 votes

1791

** Unofficial **

**NO. 4
CONSTITUTIONAL AMENDMENT
ARTICLE X, SECTION 27**

PROTECT PEOPLE, ESPECIALLY YOUTH, FROM ADDICTION, DISEASE, AND OTHER HEALTH HAZARDS OF USING TOBACCO

To protect people, especially youth, from addiction, disease, and other health hazards of using tobacco, the Legislature shall use some Tobacco Settlement money annually for a comprehensive statewide tobacco education and prevention program using Centers for Disease Control best practices. Specifies some program components, emphasizing youth, requiring one-third of total annual funding for advertising. Annual funding is 15% of 2005 Tobacco Settlement payments to Florida, adjusted annually for inflation. Provides definitions. Effective immediately.

This amendment requires state government to appropriate approximately \$57 million in 2007 for the Comprehensive Statewide Tobacco Education and Prevention Program. Thereafter, this amount will increase annually with inflation. This spending is expected to reduce tobacco consumption. As a result, some long-term savings to state and local government health and insurance programs are probable, but indeterminate. Also, minor revenue loss to state government is probable, but indeterminate.

YES 56563 votes
NO 38465 votes

**NO. 6
CONSTITUTIONAL AMENDMENT
ARTICLE VII, SECTION 6, ARTICLE XII, SECTION 26**

INCREASED HOMESTEAD EXEMPTION

Proposing amendment of the State Constitution to increase the maximum additional homestead exemption for low-income seniors from \$25,000 to \$50,000 and to schedule the amendment to take effect January 1, 2007, if adopted.

YES 67019 votes
NO 29014 votes

**NO. 7
CONSTITUTIONAL AMENDMENT
ARTICLE VII, SECTION 6**

PERMANENTLY DISABLED VETERANS' DISCOUNT ON HOMESTEAD AD VALOREM TAX

Proposing an amendment to the State Constitution to provide a discount from the amount of ad valorem tax on the homestead of a partially or totally permanently disabled veteran who is age 65 or older who was a Florida resident at the time of entering military service, whose disability was combat-related, and who was honorably discharged; to specify the percentage of the discount as equal to the percentage of the veteran's permanent service-connected disability; to specify qualification requirements for the discount; to authorize the Legislature to waive the annual application requirement in subsequent years by general law; and to specify that the provision takes effect December 7, 2006, is self-executing, and does not require implementing legislation.

YES 67973 votes
NO 27202 votes

1792

** Unofficial **

**NO. 8
CONSTITUTIONAL AMENDMENT
ARTICLE X, SECTION 6**

EMINENT DOMAIN

Proposing an amendment to the State Constitution to prohibit the transfer of private property taken by eminent domain to a natural person or private entity; providing that the Legislature may by general law passed by a three-fifths vote of the membership of each house of the Legislature permit exceptions allowing the transfer of such private property; and providing that this prohibition on the transfer of private property taken by eminent domain is applicable if the petition of taking that initiated the condemnation proceeding was filed on or after January 2, 2007.

YES 66080 votes
NO 27124 votes

DUETTE FIRE AND RESCUE DISTRICT CREATION AND AUTHORITY REFERENDUM

In order to obtain a high level of life safety and property protection, Shall the Duette Fire and Rescue District be created and authorized to exercise all powers of independent special fire district as set forth in Chapters 191 and 189 of the Florida Statutes including the authority to levy fees and charges as set forth in Chapter 2006-352, Laws of Florida.

YES 178 votes
NO 47 votes

**A REFERENDUM TO INCREASE IMPACT FEES ON NEW CONSTRUCTION IN THE WEST
MANATEE FIRE & RESCUE DISTRICT**

Shall West Manatee Fire & Rescue District be allowed to increase impact fees on new construction only, to pay for new equipment and facilities as necessary to accommodate new growth?

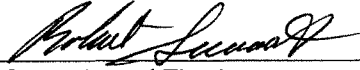
YES 9081 votes
NO 4207 votes

1793


** Unofficial **



County Judge



Supervisor of Elections



Chairman, Board of County Commissioners

Total ballots cast in Manatee County was 100,530 for a 50.52 percent turnout.

A black and white copy of this document is not official.

**STATE OF FLORIDA
DEPARTMENT OF STATE
Division of Elections**

I, Kurt S. Browning, Secretary of State of the State of Florida, do hereby certify that the attached is a true and correct copy of the unofficial Certificate of the Sarasota County Canvassing Board for the General Election held on the Seventh day of November, 2006, as shown by the records of this office.



Given under my hand and the Great Seal of the State of Florida, at Tallahassee, the Capitol, this the 3rd day of January, A. D. 2007.


Secretary of State

DSDE 99 (3/03)

The original document has a reflective line mark in paper. Hold at an angle to view when checking.

** Unofficial **

CERTIFICATE OF COUNTY CANVASSING BOARD

STATE OF FLORIDA

Sarasota County

We, the undersigned, Phyllis Galen, County Judge, Kathy Dent, Supervisor of Elections, and Paul Mercier, County Commissioner, constituting the Board of County Canvassers in and for said County, do hereby certify that we met on the 7th day of November, A.D., 2006, and proceeded publicly to canvass the votes given for the several offices and persons herein specified at the **General Election** held on the 7th day of November, A.D., 2006 as shown by the returns on file in the office of the Supervisor of Elections. We do hereby certify from said returns as follows:

For United States Senator the whole number of votes cast was 140,540 of which number

Katherine Harris (REP) received 58,238 votes
 Bill Nelson (DEM) received 80,038 votes
 Floyd Ray Frazier (NPA) received 549 votes
 Belinda Noah (NPA) received 689 votes
 Brian Moore (NPA) received 604 votes
 Roy Tanner (NPA) received 419 votes
 Lawrence Scott (WRI) received 3 votes
 Bernard Senter (WRI) received 0 votes

For United States Representative, Thirteenth Congressional District the whole number of votes cast was 123,901 of which number

Vern Buchanan (REP) received 58,534 votes
 Christine Jennings (DEM) received 65,367 votes

For Governor and Lieutenant Governor the whole number of votes cast was 140,398 of which number

Charlie Crist and Jeff Kottkamp (REP) received 76,114 votes
 Jim Davis and Daryl L. Jones (DEM) received 60,149 votes
 Max Linn and Tom Macklin (REF) received 2,908 votes
 Richard Paul Dembinsky and Dr. Joe Smith (NPA) received 437 votes
 John Wayne Smith and James J. Kearney (NPA) received 435 votes
 Karl C.C. Behm and Carol Castagnero (NPA) received 354 votes
 Omari Musa and Ellen Brickley (WRI) received 0 votes
 Piotr Blass and Jinamarie Gallo (WRI) received 1 votes

COPY

1796

** Unofficial **

C. C. Reed and Mr. T (WRI) received 0 votes

For Attorney General the whole number of votes cast was 136,077 of which number

Bill McCollum (REP) received 72,101 votes

Walter "Skip" Campbell (DEM) received 63,976 votes

For Chief Financial Officer the whole number of votes cast was 135,984 of which number

Tom Lee (REP) received 66,889 votes

Alex Sink (DEM) received 69,095 votes

For Commissioner of Agriculture the whole number of votes cast was 134,913 of which number

Charles H. Bronson (REP) received 79,320 votes

Eric Copeland (DEM) received 55,593 votes

For State Representative, Sixty-Ninth House District the whole number of votes cast was 43,912 of which number

Laura A. Benson (REP) received 21,502 votes

Keith Fitzgerald (DEM) received 22,410 votes

For State Representative, Seventieth House District the whole number of votes cast was 64,914 of which number

Doug Holder (REP) received 32,835 votes

David Shapiro (DEM) received 32,079 votes

For State Representative, Seventy-First House District the whole number of votes cast was 11,687 of which number

Michael J. Grant (REP) received 11,682 votes

Robert Peter Rice (WRI) received 5 votes

For Charter Review Board, District One the whole number of votes cast was 129,301 of which number

Stefan Butz (REP) received 69,073 votes

Michael E. Keisman (DEM) received 60,228 votes

1797

** Unofficial **

For Charter Review Board District Two the whole number of votes cast was
118,615 of which number

Dan H. McLeroy Jr. (REP) received 76,320 votes
Gaines E. Anderson III (NPA) received 42,295 votes

For Charter Review Board District Three the whole number of votes cast was
128,059 of which number

Adam R. Miller (REP) received 68,622 votes
Bryan K. Worthington (DEM) received 59,437 votes

For Charter Review Board District Four the whole number of votes cast
was 127,867 of which number

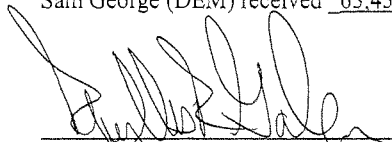
Charles A. Cooper (REP) received 67,995 votes
Wade Matthews (DEM) received 59,872 votes

For Charter Review Board District Five the whole number of votes cast was
128,287 of which number

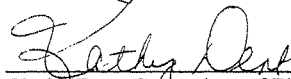
Kevin T. Connelly (REP) received 63,290 votes
Deborah J. (Debbie) Trice (DEM) received 64,997 votes

For Hospital Board Southern District Seat One the whole number of votes cast
was 128,177 of which number

Gerald M. Phillips (REP) received 64,726 votes
Sam George (DEM) received 63,451 votes



Phyllis Galen, County Judge



Kathy Dent, Supervisor of Elections



Paul Mercier, County Commissioner

** Unofficial **

CERTIFICATE OF COUNTY CANVASSING BOARD

STATE OF FLORIDA

Sarasota County

We, the undersigned, Phyllis Galen, County Judge, Kathy Dent, Supervisor of Elections, and Paul Mercier, County Commissioner, constituting the Board of County Canvassers in and for said County, do hereby certify that we met on the 7th day of November, A.D., 2006, and proceeded publicly to canvass the votes given for the several offices and persons herein specified at the **Nonpartisan Election** held on the 7th day of November, A.D., 2006 as shown by the returns on file in the office of the Supervisor of Elections. We do hereby certify from said returns as follows:

Retention of Justice R. Fred Lewis of the Supreme Court

YES 85,949 votesNO 32,211 votes

Retention of Justice Barbara Joan Pariente of the Supreme Court

YES 87,080 votesNO 31,492 votes

Retention of Justice Peggy A. Quince of the Supreme Court

YES 86,843 votesNO 30,309 votes

Retention of Judge Darryl C. Casanueva of the Second District Court of Appeal

YES 85,313 votesNO 29,966 votes

Retention of Judge Charles A. Davis Jr. of the Second District Court of Appeal

YES 7,873 votesNO 27,869 votes

Retention of Judge Edward C. LaRose of the Second District Court of Appeal

YES 87,152 votesNO 28,170 votes

1799

** Unofficial **

Retention of Judge E.J. Salcines of the Second District Court of Appeal

YES 84,270 votes

NO 30,153 votes

Retention of Judge Thomas E. Stringer Sr. of the Second District Court of Appeal

YES 86,455 votes

NO 28,123 votes

For Circuit Judge, Twelfth Judicial Circuit, Group Twenty-One the whole number of votes cast was 119,331 of which number

Rochelle Taylor Curley received 66,769 votes

Preston DeVilbiss Jr. received 52,562 votes

For Bobcat Trail Community Development District, Seat One the whole number of votes cast was 440 of which number

John F. Muller received 218 votes

Louis F. Robbio received 222 votes

For Bobcat Trail Community Development District, Seat Two the whole number of votes cast was 441 of which number

Sandra M. Burns received 226 votes

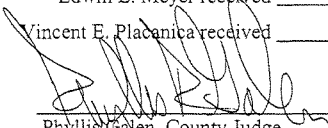
Kenneth R. Cisewski received 215 votes

For Lakeside Plantation Community Development District, Seat Two the whole number of votes cast was 288 of which number

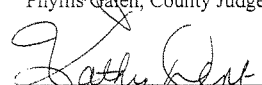
Gwynne Balson received 26 votes

Edwin L. Meyer received 78 votes

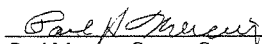
Vincent E. Placanica received 84 votes



Phyllis Galen, County Judge



Kathy Dent, Supervisor of Elections



Paul Mercier, County Commissioner

1800

** Unofficial **

CERTIFICATE OF COUNTY CANVASSING BOARD

STATE OF FLORIDA

Sarasota County

We, the undersigned, Phyllis Galen, County Judge, Kathy Dent, Supervisor of Elections, and Paul Mercier, County Commissioner, constituting the Board of County Canvassers in and for said County, do hereby certify that we met on the 7th day of November, A.D., 2006, and proceeded publicly to canvass the votes given for Proposed Amendments to the Constitution of the State of Florida and local referendums on the 7th day of November, A.D., 2006 as shown by the returns on file in the office of the Supervisor of Elections. We do hereby certify from said returns as follows:

NO. 1
CONSTITUTIONAL AMENDMENT
ARTICLE III, SECTION 19

STATE PLANNING AND BUDGET PROCESS

Proposing amendments to the State Constitution to limit the amount of nonrecurring general revenue which may be appropriated for recurring purposes in any fiscal year to 3 percent of the total general revenue funds estimated to be available, unless otherwise approved by a three-fifths vote of the Legislature; to establish a Joint Legislative Budget Commission, which shall issue long-range financial outlooks; to provide for limited adjustments in the state budget without the concurrence of the full Legislature, as provided by general law; to reduce the number of times trust funds are automatically terminated; to require the preparation and biennial revision of a long-range state planning document; and to establish a Government Efficiency Task Force and specify its duties.

YES 67,174 votes

NO 60,295 votes

NO. 3
CONSTITUTIONAL AMENDMENT
ARTICLE XI, SECTION 5

REQUIRING BROADER PUBLIC SUPPORT FOR CONSTITUTIONAL AMENDMENTS OR REVISIONS

Proposes an amendment to Section 5 of Article XI of the State Constitution to require that any proposed amendment to or revision of the State Constitution, whether proposed by the Legislature, by initiative, or by any other method, must be approved by at least 60 percent of the voters of the state voting on the measure, rather than by a simple majority. This proposed amendment would not change the current requirement that a proposed constitutional amendment imposing a new state tax or fee be approved by at least 2/3 of the voters of the state voting in the election in which such an amendment is considered.

YES 73,422 votes

NO 60,463 votes

1801

** Unofficial **

NO. 4
CONSTITUTIONAL AMENDMENT
ARTICLE X, SECTION 27

PROTECT PEOPLE, ESPECIALLY YOUTH, FROM ADDICTION, DISEASE, AND OTHER HEALTH HAZARDS OF USING TOBACCO

To protect people, especially youth, from addiction, disease, and other health hazards of using tobacco, the Legislature shall use some Tobacco Settlement money annually for a comprehensive statewide tobacco education and prevention program using Centers for Disease Control best practices. Specifies some program components, emphasizing youth, requiring one-third of total annual funding for advertising. Annual funding is 15% of 2005 Tobacco Settlement payments to Florida, adjusted annually for inflation. Provides definitions. Effective immediately.

This amendment requires state government to appropriate approximately \$57 million in 2007 for the Comprehensive Statewide Tobacco Education and Prevention Program. Thereafter, this amount will increase annually with inflation. This spending is expected to reduce tobacco consumption. As a result, some long-term savings to state and local government health and insurance programs are probable, but indeterminate. Also, minor revenue loss to state government is probable, but indeterminate.

YES 84,708 votes

NO 50,870 votes

NO. 6
CONSTITUTIONAL AMENDMENT
ARTICLE VII, SECTION 6, ARTICLE XII, SECTION 26

INCREASED HOMESTEAD EXEMPTION

Proposing amendment of the State Constitution to increase the maximum additional homestead exemption for low-income seniors from \$25,000 to \$50,000 and to schedule the amendment to take effect January 1, 2007, if adopted.

YES 96,002 votes

NO 41,494 votes

NO. 7
CONSTITUTIONAL AMENDMENT
ARTICLE VII, SECTION 6

PERMANENTLY DISABLED VETERANS' DISCOUNT ON HOMESTEAD AD VALOREM TAX

Proposing an amendment to the State Constitution to provide a discount from the amount of ad valorem tax on the homestead of a partially or totally permanently disabled veteran who is age 65 or older who was a Florida resident at the time of entering military service, whose disability was combat-related, and who was honorably discharged; to specify the percentage of the discount as equal to the percentage of the veteran's permanent service-connected disability; to specify qualification requirements for the discount; to authorize the Legislature to waive the annual application requirement in subsequent years by general law; and to specify that the provision takes effect December 7, 2006, is self-executing, and does not require implementing legislation.

YES 94,633 votes

NO 40,484 votes

1802

** Unofficial **

NO. 8
CONSTITUTIONAL AMENDMENT
ARTICLE X, SECTION 6

EMINENT DOMAIN

Proposing an amendment to the State Constitution to prohibit the transfer of private property taken by eminent domain to a natural person or private entity; providing that the Legislature may by general law passed by a three-fifths vote of the membership of each house of the Legislature permit exceptions allowing the transfer of such private property; and providing that this prohibition on the transfer of private property taken by eminent domain is applicable if the petition of taking that initiated the condemnation proceeding was filed on or after January 2, 2007.

YES 84,649 votes

NO 46,429 votes

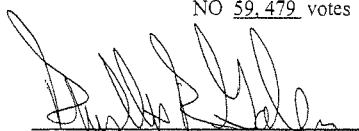
SARASOTA COUNTY CHARTER AMENDMENT

MANDATORY VOTER VERIFIED PAPER BALLOTS; INDEPENDENT RANDOM AUDITS OF ELECTION RESULTS; AUDITS REQUIRED BEFORE CERTIFICATION

Amend the Sarasota County Charter to require that, effective January 1, 2008; (1) all County Voting systems provide a voter verified paper ballot; (2) in addition to election code audits, mandatory independent random audits of elections results be conducted in every election comparing hand counts to machine counts; (3) mandatory manual audit of all paper ballots if audit discrepancies reach specified thresholds; (4) no election certified until all mandatory audits are complete and any inaccuracies resolved.

YES 73,918 votes

NO 59,479 votes



Phyllis Gajen, County Judge



Kathy Dent, Supervisor of Elections



Paul Mercier, County Commissioner

Total ballots cast in Sarasota County was 142,284 for a 56.80 percent turnout.

1803

Unofficial

CERTIFICATE OF COUNTY CANVASSING BOARD

STATE OF FLORIDA Sarasota County

I the undersigned, Kathy Dent, Supervisor of Elections in and for Sarasota County, do hereby certify that the results stated below to be the true and accurate for the City of Venice held on the 7th day of November, A.D., 2006 as shown by the returns on file in this office. I hereby certify from said returns as follows

For City Council Member **SEAT 3**, the whole number of votes cast was 8,932 of which number,

John Simmonds received 4,674 votes

Ernest Zavodnyik received 4,258 votes

Amendment 1

Amendment Regarding the Suspension or Removal of the Police Chief and Fire Chief

Shall the City of Venice Charter be amended to eliminate the requirement that the city manager obtain the advice and consent of city council in order to suspend or remove the police chief and fire chief?

YES, for the charter amendment 3,993 votes

NO, against the charter amendment 5,302 votes

Amendment 2

Amendment to Change the Finance Director from a Charter Officer to a department Head

Shall the City of Venice Charter be amended to change the position of Finance Director from a charter officer who serves at the pleasure of city council to a department head supervised by the city manager?

YES, for the charter amendment 5,026 votes

NO, against the charter amendment 4,028 votes

Amendment 3

Amendment Regarding the Term of Office for Mayor when Filling a Vacancy

Shall the City of Venice Charter be amended to provide that when filling a vacancy in the office of mayor that the person elected to fill the vacancy shall be elected for a term of three years?

YES, for the charter amendment 5,038 votes

NO, against the charter amendment 4,147 votes

1804


Unofficial

Amendment 4

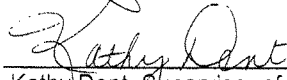
Amendment Regarding Term Limits for the Offices of Mayor and Councilmember

Shall the City of Venice Charter be amended to provide that no person shall serve as mayor for more than three consecutive elected terms; that no person shall serve as councilmember for more than three consecutive elected terms; and that no person shall serve as mayor and as councilmember in any combination for more than six consecutive elected terms?

YES, for the charter amendment 7,346 votes
NO, against the charter amendment 1,889 votes



Phyllis Galen, County Judge



Kathy Dent, Supervisor of Elections



Paul Mercier, County Commissioner

1805

**Unofficial **

CERTIFICATE OF COUNTY CANVASSING BOARD

STATE OF FLORIDA

Sarasota County

We, the undersigned, **PHYLLIS GALEN**, County Judge, **KATHY DENT**, Supervisor of Elections, and **PAUL MERCIER**, County Commissioner, constituting the Board of County Canvassers in and for said County, do hereby certify that we met on the 7th day of November, A.D., 2006, and proceeded publicly to canvass the votes given for the **CITY OF NORTH PORT GENERAL ELECTION** held on the 7th day of September, A.D., 2006, as shown by the returns on file in this office. We do hereby certify from said returns as follows:

For Commissioner **SEAT 4**, the whole number of votes cast was 11,055 of which number,

Jim Blucher received 5,633 votes

David J. Garofalo received 5,422 votes

For Commissioner **SEAT 5**, the whole number of votes cast was 11,094 of which number,

Vanessa Carusone received 6,523 votes

Levko Klos received 4,571 votes

PROPOSED UTILITY BOND REFERENDUM ELECTION

Approval of Utility Revenue Bonds to Finance Improvements of Sewer Treatment and Reclaimed Water Systems.

Shall the City of North Port be authorized to issue revenue bonds maturing not later than 30 years from their issuance in an aggregate principal amount not exceeding \$50,000,000, interest upon which will not exceed the maximum legal rate, to finance sewer treatment plant capacity and other related sewer and reclaimed water improvements, which bonds shall be payable from utility revenues and legally available impact fees and NOT from ad valorem property taxes?

YES FOR BONDS 8,873 votes

NO AGAINST BONDS 2,256 votes

CHARTER AMENDMENT QUESTION ONE

Presently the Canvassing of the Elections for the North Port City Commission is done at 9:30 A.M. on the day following the Special or General Election. As a result of changes in State law, do you favor amending the City Charter to provide the canvassing elections meeting will be held after certification of ballots by the Supervisor of Elections?

YES for Approval 8,683 votes

NO for Rejection 1,977 votes

1806

****Unofficial ****

CHARTER AMENDMENT QUESTION TWO

Presently the assumption of office meeting where new or reelected Commissioners are sworn into office is held at 9:30 AM on the second day following the election. As a result of changes in State law, are you in favor of moving the assumption of office meeting to the day following certification of ballots by the Supervisor of Elections?

YES for Approval 8,930 votes

NO for Rejection 1,864 votes

CHARTER AMENDMENT QUESTION THREE

Presently the City Charter requires the City Commission to meet regularly not less than once each month. It has been the past practice of Cities and Counties in Florida not to meet in the month of August for vacation. Are you in favor of amending the City Charter to require a regular monthly meeting, except in August?

YES for Approval 7,469 votes

NO for Rejection 3,582 votes

CHARTER AMENDMENT QUESTION FOUR

Presently the City Charter provides that all general obligation bonds and revenue bonds issued by the City must be approved by a vote of the majority of the qualified electors of the City. Are you in favor of amending the City Charter to eliminate the referendum requirement for revenue bonds which have an independent source of funding and do not require the pledging of the ad valorem taxing power of the City Commission?

YES for Approval 4,786 votes

NO for Rejection 5,858 votes

CHARTER AMENDMENT QUESTION FIVE

Presently the City Charter provides for that an emergency ordinance may be enacted by a vote of four (4) members of the City Commission when deemed necessary for the public health, safety and welfare of the City. Are you in favor of amending the City Charter to provide that if the City Commission is unable to meet for reasons beyond their control in times of an emergency to enact an emergency ordinance relating to the temporary procurement of goods and services, to delegate that responsibility to the City Manager or to his designee, to be ratified by the Commission at a subsequent meeting?

YES for Approval 6,711 votes

NO for Rejection 4,134 votes

1807

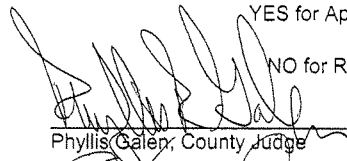
**Unofficial **

CHARTER AMENDMENT QUESTION SIX


Presently the City Charter requires that resolutions be read in total at a public meeting prior to adoption. At meetings with more than one resolution to consider, reading in total can be a time consuming matter. Are you in favor of amending the City Charter to allow resolutions to be read by their title only prior to being proffered for adoption to the City Commission?

YES for Approval 5,796 votes

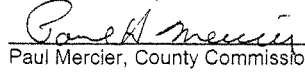
NO for Rejection 5,197 votes



Phyllis Galen, County Judge



Kathy Dent, Supervisor of Elections



Paul Mercier, County Commissioner

Tab 8

A black and white copy of this document is not official.

**STATE OF FLORIDA
DEPARTMENT OF STATE
Division of Elections**

I, Kurt S. Browning, Secretary of State of the State of Florida, do hereby certify that the attached is a true and correct copy of the Certificate of Elections Canvassing Commission order for a machine recount of the Representative in Congress, District 13 race held November 7, 2006, as shown by the records of this office.



Given under my hand and the Great Seal of the State of Florida, at Tallahassee, the Capitol, this the 16th day of January, A. D. 2007.

A handwritten signature in black ink, appearing to read "Kurt S. Browning".

Secretary of State

DSDE 99 (3/03)

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CERTIFICATE OF ELECTIONS CANVASSING COMMISSION

STATE OF FLORIDA

We, the undersigned, Jeb Bush, Governor, Tom Gallagher, Chief Financial Officer, and Daniel Webster, State Senator, constituting the Elections Canvassing Commission in and for said state, do hereby certify that we canvassed the unofficial results from the General Election held on November 7, 2006 in the State of Florida, as shown by the returns on file in the office of the Division of Elections.

Section 102.141(6), Florida Statutes, provides that if the unofficial returns show that a candidate for any office was defeated or eliminated by one-half of a percent or less of the total votes cast for that office, the board responsible for certifying the results of the vote on that race shall order an automatic recount of votes cast in the geographic jurisdiction of such office. The recount process will be conducted pursuant to section 102.141(6), Florida Statutes.

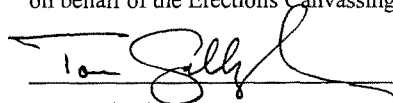
Pursuant to section 102.111, Florida Statutes, the Elections Canvassing Commission is responsible for certifying the returns for all federal, state, and multicounty offices.

Therefore, based on the attached unofficial returns, the Elections Canvassing Commission is ordering that the following race is subject to a machine recount:

Representative in Congress, District 13

Should the second unofficial returns reflect that a manual recount is warranted pursuant to section 102.166, Florida Statutes, the Elections Canvassing Commission directs the Secretary of State, on behalf of the Commission, to order the manual recount to begin immediately.

Signed this 13th day of November 2006, by Tom Gallagher, Chief Financial Officer, on behalf of the Elections Canvassing Commission.


Tom Gallagher

Tab 9

A black and white copy of this document is not official.

**STATE OF FLORIDA
DEPARTMENT OF STATE
Division of Elections**

I, Kurt S. Browning, Secretary of State of the State of Florida, do hereby certify that the attached is a true and correct copy of the second unofficial Certificate of the Charlotte County Canvassing Board for the General Election held on the Seventh day of November, 2006, as shown by the records of this office.



Given under my hand and the Great Seal of the State of Florida, at Tallahassee, the Capitol, this the 3rd day of January, A. D. 2007.


Secretary of State

DSDE 99 (3/03)

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1813

11/14/2006. 16:29

9416372231

SOE CHARLOTTE CTY

PAGE 01/02

FAX COVER SHEET

MAC V. HORTON
SUPERVISOR OF ELECTION
CHARLOTTE COUNTY, FLORIDA

410 Taylor Street
P.O. Box 511229
Punta Gorda, FL 33951-1229
941-637-2232 (Phone)
941-637-2231 (Fax)

Send to: <u>DOK</u>	From: <u>MAC</u>
Attention:	Date: <u>11-14-06</u>
Phone #:	Phone #:
Fax #:	

- Urgent
- Reply ASAP
- Please Comment
- Please Review
- For your information

Total pages, including cover: 2

Comments:

<u>2nd Unofficial Results</u>
<u>CD 13</u>

** Second Unofficial **

CERTIFICATE OF COUNTY CANVASSING BOARD

STATE OF FLORIDA

Charlotte County

We, the undersigned, W. Wayne Woodard, County Judge,
Mac V. Horton, Supervisor of Elections, and
Thomas G. Moore, County Commissioner,
constituting the Board of County Canvassers in and for said County, do hereby certify
that we met on the 14th day of November, A.D., 2006, and proceeded publicly
to canvass the votes given pursuant to the machine recount conducted for the office and
persons listed below, pursuant to Section 102.141, Florida Statutes, herein specified at the
General Election held on the 7th day of November, A.D., 2006, as shown by the returns
on file in the office of the Supervisor of Elections. We do hereby certify from said
returns as follows:

For United States Representative, Thirteenth Congressional District the whole number of
votes cast was 8963 of which number

Vern Buchanan (REP) received 4459 votes
Christine Jennings (DEM) received 4270 votes

The machine recount indicates there are 174 overvotes and undervotes.

Additionally, there are 12 provisional ballots in this race that have
not been canvassed.

County Judge

Mac V. Horton
Supervisor of Elections

Thomas G. Moore
County Commissioner

A black and white copy of this document is not official.

**STATE OF FLORIDA
DEPARTMENT OF STATE
Division of Elections**

I, Kurt S. Browning, Secretary of State of the State of Florida, do hereby certify that the attached is a true and correct copy of the second unofficial Certificate of the Desoto County Canvassing Board for the General Election held on the Seventh day of November, 2006, as shown by the records of this office.



Given under my hand and the Great Seal of the State of Florida, at Tallahassee, the Capitol, this the 3rd day of January, A. D. 2007.


Secretary of State

DSD 99 (3/03)

The original document has a reflective line mark in paper. Hold at an angle to view when checking.

** Second Unofficial **

CERTIFICATE OF COUNTY CANVASSING BOARD

STATE OF FLORIDA

DeSoto County

We, the undersigned, DON T. HALL, County Judge,
MARK F. NEALEY, Supervisor of Elections, and
JERRY H. HILL, County Commissioner,
constituting the Board of County Canvassers in and for said County, do hereby certify
that we met on the 13th day of November, A.D., 2006, and proceeded publicly
to canvass the votes given pursuant to the machine recount conducted for the office and
persons listed below, pursuant to Section 102.141, Florida Statutes, herein specified at the
General Election held on the 7th day of November, A.D., 2006, as shown by the returns
on file in the office of the Supervisor of Elections. We do hereby certify from said
returns as follows:

For United States Representative, Thirteenth Congressional District the whole number of
votes cast was 6671 of which number

Vern Buchanan (REP) received 3467 votes
Christine Jennings (DEM) received 3056 votes

The machine recount indicates there are 148 overvotes and undervotes.

Additionally, there are 0 provisional ballots in this race that have
not been canvassed.

Don T. Hall
County Judge

Mark F. Nealey
Supervisor of Elections

Jerry H. Hill
County Commissioner

A black and white copy of this document is not official.

**STATE OF FLORIDA
DEPARTMENT OF STATE
Division of Elections**

I, Kurt S. Browning, Secretary of State of the State of Florida, do hereby certify that the attached is a true and correct copy of the second unofficial Certificate of the Sarasota County Canvassing Board for the General Election held on the Seventh day of November, 2006, as shown by the records of this office.



Given under my hand and the Great Seal of the State of Florida, at Tallahassee, the Capitol, this the 3rd day of January, A. D. 2007.

A handwritten signature in black ink, appearing to read "Kurt S. Browning".

Secretary of State

DSDE 99 (3/03)

The original document has a reflective line mark in paper. Hold at an angle to view when checking.

**** Second Unofficial ****

CERTIFICATE OF COUNTY CANVASSING BOARD

STATE OF FLORIDA:

Sarasota County

We, the undersigned, Phyllis Galen, County Judge,
Kathy Dent, Supervisor of Elections, and Paul Mercier,
County Commissioner, constituting the Board of County Canvassers in and for said
County, do hereby certify that we met on the 13th day of November, A.D.,
2006, and proceeded publicly to canvass the votes given pursuant to the machine recount
conducted for the office and persons listed below, pursuant to Section 102.141, Florida
Statutes, herein specified at the **General Election** held on the 7th day of November, A.D.,
2006, as shown by the returns on file in the office of the Supervisor of Elections. We do
hereby certify from said returns as follows:

For United States Representative, Thirteenth Congressional District the whole number of
votes cast was 123,901 of which number

Vern Buchanan (REP) received 58,535 votes

Christine Jennings (DEM) received 65,366 votes

The machine recount indicates there are 18,380 overvotes and undervotes.

Additionally, there are 0 * provisional ballots in this race that have not been
canvassed.

Phyllis Galen, County Judge

Kathy Dent
Kathy Dent, Supervisor of Elections

Paul Mercier, County Commissioner

* A total of 161 provisional ballots were canvassed and accepted by the Canvassing Board.

**** Second Unofficial ****

CERTIFICATE OF COUNTY CANVASSING BOARD

STATE OF FLORIDA:

Sarasota County

We, the undersigned, Phyllis Galen, County Judge, Kathy Dent, Supervisor of Elections, and Paul Mercier, County Commissioner, constituting the Board of County Canvassers in and for said County, do hereby certify that we met on the 13th day of November, A.D., 2006, and proceeded publicly to canvass the votes given pursuant to the machine recount conducted for the office and persons listed below, pursuant to Section 102.141, Florida Statutes, herein specified at the **General Election** held on the 7th day of November, A.D., 2006, as shown by the returns on file in the office of the Supervisor of Elections. We do hereby certify from said returns as follows:

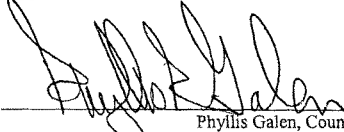
For United States Representative, Thirteenth Congressional District the whole number of votes cast was 123,901 of which number

Vern Buchanan (REP) received 58,535 votes

Christine Jennings (DEM) received 65,366 votes

The machine recount indicates there are 18,380 overvotes and undervotes.

Additionally, there are 0 provisional ballots in this race that have not been canvassed.



Phyllis Galen, County Judge



Kathy Dent, Supervisor of Elections



Paul Mercier, County Commissioner



KATHY DENT
SUPERVISOR OF ELECTIONS
PO BOX 4194
SARASOTA FL 34230-4194

FAX TRANSMISSION COVER SHEET

DATE: 11/15/06 TIME: 10:51

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TO:

ATTENTION: Sara Jane Bradshaw

ORGANIZATION: DIVISION OF ELECTIONS

FAX NUMBER: 850-245-6217/6218 PHONE NUMBER: 850-245-6200

FROM:

NAME: Kathy Dent DEPT: _____

FAX NUMBER: 861-8609 PHONE NUMBER: 861-8600

SPECIAL INSTRUCTIONS:

2nd Unofficial Results for the Nov. 7, 2006
General Election

SIGNATURE: _____ TITLE: _____

Sarasota
Phone 941.861.8600
Fax 941.861.8609

Venice
Phone 941.861.3760
Fax 941.861.3770

North Port
Phone 941.423.9540
Fax 941.423.9256

Tab 10

A black and white copy of this document is not official.

**STATE OF FLORIDA
DEPARTMENT OF STATE
Division of Elections**

I, Kurt S. Browning, Secretary of State of the State of Florida, do hereby certify that the attached is a true and correct copy of the official Certificate of the Charlotte County Canvassing Board for the General Election held on the Seventh day of November, 2006, as shown by the records of this office.



Given under my hand and the Great Seal of the State of Florida, at Tallahassee, the Capitol, this the 3rd day of January, A. D. 2007.

A handwritten signature in cursive script, appearing to read "Kurt S. Browning".

Secretary of State

DSDE 99 (3/03)

The original document has a reflective line mark in paper. Hold at an angle to view when checking.

** Official **

CERTIFICATE OF COUNTY CANVASSING BOARD

STATE OF FLORIDA

Charlotte County

We, the undersigned, W. Wayne Woodard, County Judge, Mac V. Horton
Supervisor of Elections, and Thomas G. Moore, Chairman of the Board of County
Commissioners, constituting the Board of County Canvassers in and for said
 County, do hereby certify that we met on the 17th day of November, A.D., 2006,
 and proceeded publicly to canvass the votes given for the several offices and
 persons herein specified at the **General Election** held on the 7th day of November,
 A.D., 2006 as shown by the returns on file in the office of the Supervisor of
 Elections. We do hereby certify from said returns as follows:

RECEIVED
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 06 NOV 22 AM 11:02
 DIVISION OF ELECTIONS
 TALLAHASSEE, FLORIDA

For United States Senator the whole number of votes cast was
 of which number 55,027

Katherine Harris (REP) received	22,836	votes
Bill Nelson (DEM) received	31,192	votes
Floyd Ray Frazier (NPA) received	240	votes
Belinda Noah (NPA) received	338	votes
Brian Moore (NPA) received	222	votes
Roy Tanner (NPA) received	199	votes
Lawrence Scott (WRI) received	0	votes
Bernard Senter (WRI) received	0	votes

For United States Representative, Thirteenth Congressional District the whole
 number of votes cast was 8,737 of which number

Vern Buchanan (REP) received	4,460	votes
Christine Jennings (DEM) received	4,277	votes

For United States Representative, Fourteenth Congressional District the whole
 number of votes cast was 10,262 of which number

Connie Mack (REP) received	6,305	votes
Robert M. Neeld (DEM) received	3,957	votes
Dan (WRI) received	0	votes
Richard Grayson (WRI) received	0	votes

** Official **

For United States Representative, Sixteenth Congressional District the whole
number of votes cast was 35,683 of which number

Joe Negron (REP) received	17,348	votes
Tim Mahoney (DEM) received	17,309	votes
Emmie Ross (NPA) received	1,026	votes

For Governor and Lieutenant Governor the whole number of votes cast was
55,286 of which number

Charlie Crist and Jeff Kottkamp (REP) received	32,377	votes
Jim Davis and Daryl L. Jones (DEM) received	21,621	votes
Max Linn and Tom Macklin (REF) received	735	votes
Richard Paul Dembinsky and Dr. Joe Smith (NPA) received	205	votes
John Wayne Smith and James J. Kearney (NPA) received	185	votes
Karl C.C. Behm and Carol Castagnero (NPA) received	163	votes
Omari Musa and Ellen Brickley (WRI) received	0	votes
Piotr Blass and Jinamarie Gallo (WRI) received	0	votes
C. C. Reed and Mr. T (WRI) received	0	votes

For Attorney General the whole number of votes cast was 44,124
of which number

Bill McCollum (REP) received	25,386	votes
Walter "Skip" Campbell (DEM) received	18,738	votes

For Chief Financial Officer the whole number of votes cast was 53,565
of which number

Tom Lee (REP) received	27,662	votes
Alex Sink (DEM) received	25,903	votes

For Commissioner of Agriculture the whole number of votes cast was 52,640
of which number

Charles H. Bronson (REP) received	31,374	votes
Eric Copeland (DEM) received	21,266	votes

For State Representative, Seventy-First House District the whole number of votes
24,032 of which number

Michael J. Grant (REP) received	24,025	votes
Robert Peter Rice (WRI) received	7	votes

** Official **

For Board of County Commissioners, District Four the whole number of votes cast was 53,488 of which number

Richard D. Loftus (REP) received	<u>28,285</u>	votes
Joan Fischer (DEM) received	<u>25,203</u>	votes

For County Miscellaneous Boards, Group Two the whole number of votes cast was 48,106 of which number

Don Lee (REP) received	<u>30,803</u>	votes
Robert Hancik (NPA) received	<u>17,303</u>	votes

We certify that pursuant to Section 102.112, Florida Statutes, the canvassing board has reconciled the number of persons who voted with the number of ballots counted and that the certification includes all valid votes cast in the election.

County Judge

Max D. Horton

Supervisor of Elections

Stephen J. Wilson

Chairman, Board of County Commissioners

** Official **

CERTIFICATE OF COUNTY CANVASSING BOARD

STATE OF FLORIDA

Charlotte County

We, the undersigned, W. Wayne Woodard, County Judge, Mac V. Horton, Supervisor of Elections, and Thomas G. Moore, Chairman of the Board of County Commissioners, constituting the Board of County Canvassers in and for said County, do hereby certify that we met on the 17th day of November, A.D., 2006, and proceeded publicly to canvass the votes given for the several offices and persons herein specified at the **Nonpartisan Election** held on the 7th day of November, A.D., 2006 as shown by the returns on file in the office of the Supervisor of Elections. We do hereby certify from said returns as follows:

Retention of Justice R. Fred Lewis of the Supreme Court

YES	33,096	votes
NO	<u>13,888</u>	votes

Retention of Justice Barbara Joan Pariente of the Supreme Court

YES	33,993	votes
NO	<u>13,435</u>	votes

Retention of Justice Peggy A. Quince of the Supreme Court

YES	33,859	votes
NO	<u>13,226</u>	votes

Retention of Judge Darryl C. Casanueva of the Second District Court of Appeal

YES	34,867	votes
NO	<u>12,443</u>	votes

Retention of Judge Charles A. Davis Jr. of the Second District Court of Appeal

YES	34,317	votes
NO	<u>12,371</u>	votes

Retention of Judge Edward C. LaRose of the Second District Court of Appeal

YES	33,556	votes
NO	<u>12,659</u>	votes

Retention of Judge E.J. Salcines of the Second District Court of Appeal

YES	32,694	votes
NO	<u>13,402</u>	votes

** Official **

Retention of Judge Thomas E. Stringer Sr. of the Second District Court of Appeal

YES	33,570	votes
NO	<u>12,544</u>	votes

For Circuit Judge, Twentieth Judicial Circuit, Group Twenty-Nine the whole number of votes cast was 46,131 of which number


Miguel C. Fernandez III received	<u>18,458</u>	votes
Lynne E. Dailey received	<u>27,673</u>	votes

For Circuit Judge, Twentieth Judicial Circuit, Group Thirty the whole number of votes cast was 45,524 of which number

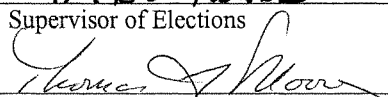
Liz Adams received	<u>28,836</u>	votes
Franklin B. Mann Jr. received	<u>16,688</u>	votes

We certify that pursuant to Section 102.112, Florida Statutes, the canvassing board has reconciled the number of persons who voted with the number of ballots counted and that the certification includes all valid votes cast in the election.

County Judge



Supervisor of Elections



Chairman, Board of County Commissioners

** Official **

CERTIFICATE OF COUNTY CANVASSING BOARD

STATE OF FLORIDA

Charlotte County

We, the undersigned, W. Wayne Woodard, County Judge, Mac V. Horton, Supervisor of Elections, and Thomas G. Moore, Chairman of the Board of County Commissioners, constituting the Board of County Canvassers in and for said County, do hereby certify that we met on the ~~17th~~ day of November, A.D., 2006, and proceeded publicly to canvass the votes given for Proposed Amendments to the Constitution of the State of Florida and local referendums on the 7th day of November, A.D., 2006 as shown by the returns on file in the office of the Supervisor of Elections. We do hereby certify from said returns as follows:

NO. 1
CONSTITUTIONAL AMENDMENT
ARTICLE III, SECTION 19

STATE PLANNING AND BUDGET PROCESS

Proposing amendments to the State Constitution to limit the amount of nonrecurring general revenue which may be appropriated for recurring purposes in any fiscal year to 3 percent of the total general revenue funds estimated to be available, unless otherwise approved by a three-fifths vote of the Legislature; to establish a Joint Legislative Budget Commission, which shall issue long-range financial outlooks; to provide for limited adjustments in the state budget without the concurrence of the full Legislature, as provided by general law; to reduce the number of times trust funds are automatically terminated; to require the preparation and biennial revision of a long-range state planning document; and to establish a Government Efficiency Task Force and specify its duties.

YES	29,582	votes
NO	21,054	votes

NO. 3
CONSTITUTIONAL AMENDMENT
ARTICLE XI, SECTION 5

REQUIRING BROADER PUBLIC SUPPORT FOR CONSTITUTIONAL AMENDMENTS OR REVISIONS

Proposes an amendment to Section 5 of Article XI of the State Constitution to require that any proposed amendment to or revision of the State Constitution, whether proposed by the Legislature, by initiative, or by any other method, must be approved by at least 60 percent of the voters of the state voting on the measure, rather than by a simple majority. This proposed amendment would not change the current requirement that a proposed constitutional amendment imposing a new state tax or fee be approved by at least 2/3 of the voters of the state voting in the election in which such an amendment is considered.

YES	32,311	votes
NO	20,391	votes

** Official **

**NO. 4
CONSTITUTIONAL AMENDMENT
ARTICLE X, SECTION 27**

PROTECT PEOPLE, ESPECIALLY YOUTH, FROM ADDICTION, DISEASE, AND OTHER HEALTH HAZARDS OF USING TOBACCO

To protect people, especially youth, from addiction, disease, and other health hazards of using tobacco, the Legislature shall use some Tobacco Settlement money annually for a comprehensive statewide tobacco education and prevention program using Centers for Disease Control best practices. Specifies some program components, emphasizing youth, requiring one-third of total annual funding for advertising. Annual funding is 15% of 2005 Tobacco Settlement payments to Florida, adjusted annually for inflation. Provides definitions. Effective immediately.

This amendment requires state government to appropriate approximately \$57 million in 2007 for the Comprehensive Statewide Tobacco Education and Prevention Program. Thereafter, this amount will increase annually with inflation. This spending is expected to reduce tobacco consumption. As a result, some long-term savings to state and local government health and insurance programs are probable, but indeterminate. Also, minor revenue loss to state government is probable, but indeterminate.

YES	31,657	votes
NO	21,680	votes

**NO. 6
CONSTITUTIONAL AMENDMENT
ARTICLE VII, SECTION 6, ARTICLE XII, SECTION 26**

INCREASED HOMESTEAD EXEMPTION

Proposing amendment of the State Constitution to increase the maximum additional homestead exemption for low-income seniors from \$25,000 to \$50,000 and to schedule the amendment to take effect January 1, 2007, if adopted.

YES	41,314	votes
NO	12,982	votes

**NO. 7
CONSTITUTIONAL AMENDMENT
ARTICLE VII, SECTION 6**

PERMANENTLY DISABLED VETERANS' DISCOUNT ON HOMESTEAD AD VALOREM TAX

Proposing an amendment to the State Constitution to provide a discount from the amount of ad valorem tax on the homestead of a partially or totally permanently disabled veteran who is age 65 or older who was a Florida resident at the time of entering military service, whose disability was combat-related, and who was honorably discharged; to specify the percentage of the discount as equal to the percentage of the veteran's permanent service-connected disability; to specify qualification requirements for the discount; to authorize the Legislature to waive the annual application requirement in subsequent years by general law; and to specify that the provision takes effect December 7, 2006, is self-executing, and does not require implementing legislation.

YES	41,041	votes
NO	12,537	votes

1830

** Official **

NO. 8
CONSTITUTIONAL AMENDMENT
ARTICLE X, SECTION 6

EMINENT DOMAIN

Proposing an amendment to the State Constitution to prohibit the transfer of private property taken by eminent domain to a natural person or private entity; providing that the Legislature may by general law passed by a three-fifths vote of the membership of each house of the Legislature permit exceptions allowing the transfer of such private property; and providing that this prohibition on the transfer of private property taken by eminent domain is applicable if the petition of taking that initiated the condemnation proceeding was filed on or after January 2, 2007.

YES	<u>37,267</u>	votes
NO	<u>14,936</u>	votes

COUNTY REFERENDUM

ESTABLISH ENVIRONMENTALLY SENSITIVE LANDS PROGRAM AND BOND REFERENDUM FOR THE ACQUISITION OF ENVIRONMENTALLY SENSITIVE LANDS. Shall Charlotte be authorized to issue bonds over the life of an environmentally sensitive lands program in an aggregate principal amount not exceeding seventy-seven million dollars (\$77,000,000) bearing interest not exceeding the maximum lawful rate, to finance the acquisition of environmentally sensitive lands, payable from ad valorem taxes not exceeding 0.20 mills for a period of twenty (20) years from issuance of such bonds.

YES	<u>27,774</u>	FOR BONDS
NO	<u>24,488</u>	AGAINST BONDS

We certify that pursuant to Section 102.112, Florida Statutes, the canvassing board has reconciled the number of persons who voted with the number of ballots counted and that the certification includes all valid votes cast in the election.

County Judge

Mac U. Hester

Supervisor of Elections

Thomas J. Moran

Chairman, Board of County Commissioners

Total ballots cast in Charlotte County was 55,774 for a 47.57% percent turnout.

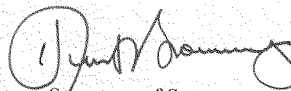
A black and white copy of this document is not official.

**STATE OF FLORIDA
DEPARTMENT OF STATE
Division of Elections**

I, Kurt S. Browning, Secretary of State of the State of Florida, do hereby certify that the attached is a true and correct copy of the official Certificate of the Desoto County Canvassing Board for the General Election held on the Seventh day of November, 2006, as shown by the records of this office.



Given under my hand and the Great Seal of the State of Florida, at Tallahassee, the Capitol, this the 3rd day of January, A. D. 2007.


Secretary of State

DSDE 99 (3/03)

The original document has a reflective line mark in paper. Hold at an angle to view when checking.

** Official **

CERTIFICATE OF COUNTY CANVASSING BOARD

STATE OF FLORIDA

Desoto County

We, the undersigned, DON T. HALL, County Judge,
MARK F. NEALEY, Supervisor of Elections, and
JEFFRY A. HILL, Chairman of the Board of County
Commissioners, constituting the Board of County Canvassers in and for said
County, do hereby certify that we met on the 17th day of November,
A.D., 2006, and proceeded publicly to canvass the votes given for the several
offices and persons herein specified at the **General Election** held on the 7th day of
November, A.D., 2006 as shown by the returns on file in the office of the
Supervisor of Elections. We do hereby certify from said returns as follows:

For United States Senator the whole number of votes cast was 6619 of
which number

Katherine Harris (REP) received 2869 votes
Bill Nelson (DEM) received 3656 votes
Floyd Ray Frazier (NPA) received 19 votes
Belinda Noah (NPA) received 34 votes
Brian Moore (NPA) received 19 votes
Roy Tanner (NPA) received 16 votes
Lawrence Scott (WRI) received 0 votes
Bernard Senter (WRI) received 0 votes

For United States Representative, Thirteenth Congressional District the whole
number of votes cast was 6529 of which number

Vern Buchanan (REP) received 3471 votes
Christine Jennings (DEM) received 3058 votes

For Governor and Lieutenant Governor the whole number of votes cast was
6599 of which number

Charlie Crist and Jeff Kotkamp (REP) received 3785 votes
Jim Davis and Daryl L. Jones (DEM) received 2603 votes
Max Linn and Tom Macklin (REF) received 133 votes
Richard Paul Dembinsky and Dr. Joe Smith (NPA) received 24 votes
John Wayne Smith and James J. Kearney (NPA) received 29 votes
Karl C.C. Behr and Carol Castagnero (NPA) received 19 votes
Omari Musa and Ellen Brickley (WRI) received 0 votes

** Official **

Piotr Blass and Jinamarie Gallo (WRI) received 0 votes

C. C. Reed and Mr. T (WRI) received 0 votes

For Attorney General the whole number of votes cast was 6467 of which number

Bill McCollum (REP) received 3710 votes

Walter "Skip" Campbell (DEM) received 2757 votes

For Chief Financial Officer the whole number of votes cast was 6195 of which number

Tom Lee (REP) received 3163 votes

Alex Sink (DEM) received 3032 votes

For Commissioner of Agriculture the whole number of votes cast was 6416 of which number

Charles H. Bronson (REP) received 4076 votes

Eric Copeland (DEM) received 2340 votes

For Board of County Commissioners, District Four the whole number of votes cast was 6553 of which number

Forest "Mel" Jackson (REP) received 2539 votes

Elton A. Langford (DEM) received 4014 votes

We certify that pursuant to Section 102.112, Florida Statutes, the canvassing board has reconciled the number of persons who voted with the number of ballots counted and that the certification includes all valid votes cast in the election.

County Judge

Mark F. Neely
Supervisor of Elections

James J. Hill
Chairman, Board of County Commissioners

** Official **

CERTIFICATE OF COUNTY CANVASSING BOARD

STATE OF FLORIDA

Desoto County

We, the undersigned, DON T. HALL, County Judge,
MARK F. NEALEY, Supervisor of Elections, and
FERRY H. HILL, Chairman of the Board of County
Commissioners, constituting the Board of County Canvassers in and for said
County, do hereby certify that we met on the 17th day of November,
A.D., 2006, and proceeded publicly to canvass the votes given for the several
offices and persons herein specified at the **Nonpartisan Election** held on the 7th
day of November, A.D., 2006 as shown by the returns on file in the office of the
Supervisor of Elections. We do hereby certify from said returns as follows:

Retention of Justice R. Fred Lewis of the Supreme Court

YES 3617 votes
NO 1981 votes

Retention of Justice Barbara Joan Pariente of the Supreme Court

YES 3496 votes
NO 2044 votes

Retention of Justice Peggy A. Quince of the Supreme Court

YES 3614 votes
NO 1997 votes

Retention of Judge Darryl C. Casanueva of the Second District Court of Appeal

YES 3617 votes
NO 1933 votes

Retention of Judge Charles A. Davis Jr. of the Second District Court of Appeal

YES 3763 votes
NO 1788 votes

Retention of Judge Edward C. LaRose of the Second District Court of Appeal

YES 3553 votes
NO 1901 votes

Retention of Judge E.J. Salcines of the Second District Court of Appeal

** Official **

YES 3482 votes

NO 1983 votes

Retention of Judge Thomas E. Stringer Sr. of the Second District Court of Appeal

YES 3641 votes

NO 1837 votes

For Circuit Judge, Twelfth Judicial Circuit, Group Twenty-One the whole number of votes cast was 5634 of which number

Rochelle Taylor Curley received 2678 votes

Preston DeVilbiss Jr. received 2956 votes

We certify that pursuant to Section 102.112, Florida Statutes, the canvassing board has reconciled the number of persons who voted with the number of ballots counted and that the certification includes all valid votes cast in the election.

County Judge

Mark F. Negley
Supervisor of Elections

James H. Hill
Chairman, Board of County Commissioners

** Official **

CERTIFICATE OF COUNTY CANVASSING BOARD

STATE OF FLORIDA

Desoto County

We, the undersigned, DON T. HALL, County Judge, MARK F. NEALEY, Supervisor of Elections, and JERRY H. HILL, Chairman of the Board of County Commissioners, constituting the Board of County Canvassers in and for said County, do hereby certify that we met on the 17th day of November, A.D., 2006, and proceeded publicly to canvass the votes given for Proposed Amendments to the Constitution of the State of Florida and local referendums on the 7th day of November, A.D., 2006 as shown by the returns on file in the office of the Supervisor of Elections. We do hereby certify from said returns as follows:

NO. 1
CONSTITUTIONAL AMENDMENT
ARTICLE III, SECTION 19

STATE PLANNING AND BUDGET PROCESS

Proposing amendments to the State Constitution to limit the amount of nonrecurring general revenue which may be appropriated for recurring purposes in any fiscal year to 3 percent of the total general revenue funds estimated to be available, unless otherwise approved by a three-fifths vote of the Legislature; to establish a Joint Legislative Budget Commission, which shall issue long-range financial outlooks; to provide for limited adjustments in the state budget without the concurrence of the full Legislature, as provided by general law; to reduce the number of times trust funds are automatically terminated; to require the preparation and biennial revision of a long-range state planning document; and to establish a Government Efficiency Task Force and specify its duties.

YES 3262 votes
NO 2575 votes

NO. 3
CONSTITUTIONAL AMENDMENT
ARTICLE XI, SECTION 5

REQUIRING BROADER PUBLIC SUPPORT FOR CONSTITUTIONAL AMENDMENTS OR REVISIONS

Proposes an amendment to Section 5 of Article XI of the State Constitution to require that any proposed amendment to or revision of the State Constitution, whether proposed by the Legislature, by initiative, or by any other method, must be approved by at least 60 percent of the voters of the state voting on the measure, rather than by a simple majority. This proposed amendment would not change the current requirement that a proposed constitutional amendment imposing a new state tax or fee be approved by at least 2/3 of the voters of the state voting in the election in which such an amendment is considered.

YES 3695 votes
NO 2411 votes

** Official **

NO. 4
CONSTITUTIONAL AMENDMENT
ARTICLE X, SECTION 27

PROTECT PEOPLE, ESPECIALLY YOUTH, FROM ADDICTION, DISEASE, AND OTHER HEALTH
HAZARDS OF USING TOBACCO

To protect people, especially youth, from addiction, disease, and other health hazards of using tobacco, the Legislature shall use some Tobacco Settlement money annually for a comprehensive statewide tobacco education and prevention program using Centers for Disease Control best practices. Specifies some program components, emphasizing youth, requiring one-third of total annual funding for advertising. Annual funding is 15% of 2005 Tobacco Settlement payments to Florida, adjusted annually for inflation. Provides definitions. Effective immediately.

This amendment requires state government to appropriate approximately \$57 million in 2007 for the Comprehensive Statewide Tobacco Education and Prevention Program. Thereafter, this amount will increase annually with inflation. This spending is expected to reduce tobacco consumption. As a result, some long-term savings to state and local government health and insurance programs are probable, but indeterminate. Also, minor revenue loss to state government is probable, but indeterminate.

YES 3903 votes
NO 2232 votes

NO. 6
CONSTITUTIONAL AMENDMENT
ARTICLE VII, SECTION 6, ARTICLE XII, SECTION 26

INCREASED HOMESTEAD EXEMPTION

Proposing amendment of the State Constitution to increase the maximum additional homestead exemption for low-income seniors from \$25,000 to \$50,000 and to schedule the amendment to take effect January 1, 2007, if adopted.

YES 4819 votes
NO 1430 votes

NO. 7
CONSTITUTIONAL AMENDMENT
ARTICLE VII, SECTION 6

PERMANENTLY DISABLED VETERANS' DISCOUNT ON HOMESTEAD AD VALOREM TAX

Proposing an amendment to the State Constitution to provide a discount from the amount of ad valorem tax on the homestead of a partially or totally permanently disabled veteran who is age 65 or older who was a Florida resident at the time of entering military service, whose disability was combat-related, and who was honorably discharged; to specify the percentage of the discount as equal to the percentage of the veteran's permanent service-connected disability; to specify qualification requirements for the discount; to authorize the Legislature to waive the annual application requirement in subsequent years by general law; and to specify that the provision takes effect December 7, 2006, is self-executing, and does not require implementing legislation.

YES 5025 votes
NO 1175 votes

** Official **

NO. 8
CONSTITUTIONAL AMENDMENT
ARTICLE X, SECTION 6

EMINENT DOMAIN

Proposing an amendment to the State Constitution to prohibit the transfer of private property taken by eminent domain to a natural person or private entity; providing that the Legislature may by general law passed by a three-fifths vote of the membership of each house of the Legislature permit exceptions allowing the transfer of such private property; and providing that this prohibition on the transfer of private property taken by eminent domain is applicable if the petition of taking that initiated the condemnation proceeding was filed on or after January 2, 2007.

YES 4295 votes
NO 1727 votes

Enter county referendums here

We certify that pursuant to Section 102.112, Florida Statutes, the canvassing board has reconciled the number of persons who voted with the number of ballots counted and that the certification includes all valid votes cast in the election.

County Judge

Mark F. Negley
Supervisor of Elections

Jimmy D. Hill
Chairman, Board of County Commissioners

Total ballots cast in DeSoto County was 6672 for a 42.55 percent turnout.

1839

Nov 17 06 05:58p

DeSoto Elections

(863)993-4875

p.1

SUPERVISOR OF ELECTIONS OFFICE
DESOTO COUNTY, FLORIDA
MARK F NEGLEY, SOE
PO BOX 89
ARCADIA, FL 34265

FACSIMILE TRANSMITTAL SHEET

TO: FROM: KELLI M JOHNSON

COMPANY: *DOE* PHONE: 863-993-4872

FAX NUMBER: *850-248-6217* DATE: *11-17-06*

RE: *official results* TOTAL NO. OF PAGES, INCLUDING COVER:

URGENT FOR REVIEW PLEASE COMMENT PLEASE REPLY PLEASE RECYCLE

NOTES/COMMENTS:

A black and white copy of this document is not official.

**STATE OF FLORIDA
DEPARTMENT OF STATE
Division of Elections**

I, Kurt S. Browning, Secretary of State of the State of Florida, do hereby certify that the attached is a true and correct copy of the official Certificate of the Hardee County Canvassing Board for the General Election held on the Seventh day of November, 2006, as shown by the records of this office.



Given under my hand and the Great Seal of the State of Florida, at Tallahassee, the Capitol, this the 3rd day of January, A. D. 2007.


Secretary of State

DSD 99 (3/03)

The original document has a reflective line mark in paper. Hold at an angle to view when checking.

** Official **

CERTIFICATE OF COUNTY CANVASSING BOARD

STATE OF FLORIDA

Hardee County

We, the undersigned, Marcus Ezelle County Judge,
Jeffery Ussery Supervisor of Elections, and
Robert R. Smith Jr. Chairman of the Board of County
Commissioners, constituting the Board of County Canvassers in and for said
County, do hereby certify that we met on the 17th day of November,
A.D., 2006, and proceeded publicly to canvass the votes given for the several
offices and persons herein specified at the **General Election** held on the 7th day of
November, A.D., 2006 as shown by the returns on file in the office of the
Supervisor of Elections. We do hereby certify from said returns as follows:

RECEIVED
06 NOV 27 PM 2:32
DIVISION OF ELECTIONS
TALLAHASSEE, FLORIDA

For United States Senator the whole number of votes cast was 4,537 of which number

- Katherine Harris (REP) received 2,157 votes
- Bill Nelson (DEM) received 2,328 votes
- Floyd Ray Frazier (NPA) received 18 votes
- Belinda Noah (NPA) received 17 votes
- Brian Moore (NPA) received 7 votes
- Roy Tanner (NPA) received 9 votes
- Lawrence Scott (WRI) received 0 votes
- Bernard Senter (WRI) received 0 votes

For United States Representative, Thirteenth Congressional District the whole number of votes cast was 4,315 of which number

- * Please see Conduct of * Election Report Vern Buchanan (REP) received 2629 votes
- Christine Jennings (DEM) received 1686 votes

For Governor and Lieutenant Governor the whole number of votes cast was 4,539 of which number

- Charlie Crist and Jeff Kottkamp (REP) received 2,580 votes
- Jim Davis and Daryl L. Jones (DEM) received 1,720 votes
- Max Linn and Tom Macklin (REF) received 202 votes
- Richard Paul Dembinsky and Dr. Joe Smith (NPA) received 7 votes
- John Wayne Smith and James J. Kearney (NPA) received 20 votes
- Karl C.C. Behm and Carol Castagnero (NPA) received 7 votes
- Omari Musa and Ellen Brickley (WRI) received 0 votes

1842

** Official **

Piotr Blass and Jinamarie Gallo (WRI) received 0 votes

C. C. Reed and Mr. T (WRI) received 0 votes

For Attorney General the whole number of votes cast was 4,420 of which number

Bill McCollum (REP) received 2,822 votes

Walter "Skip" Campbell (DEM) received 1,598 votes

For Chief Financial Officer the whole number of votes cast was 4,293 of which number

Tom Lee (REP) received 2,503 votes

Alex Sink (DEM) received 1,790 votes

For Commissioner of Agriculture the whole number of votes cast was

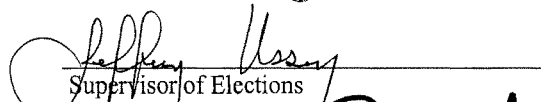
4,445 of which number

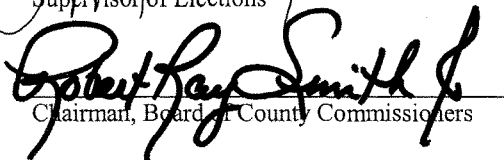
Charles H. Bronson (REP) received 3,168 votes

Eric Copeland (DEM) received 1,277 votes

We certify that pursuant to Section 102.112, Florida Statutes, the canvassing board has reconciled the number of persons who voted with the number of ballots counted and that the certification includes all valid votes cast in the election.


County Judge


Supervisor of Elections


Chairman, Board of County Commissioners

** Official **

CERTIFICATE OF COUNTY CANVASSING BOARD

STATE OF FLORIDA

Hardee County

We, the undersigned, Marcus Ezelle County Judge,
Jeffrey Ussery, Supervisor of Elections, and
Robert R. Smith Jr., Chairman of the Board of County
Commissioners, constituting the Board of County Canvassers in and for said
County, do hereby certify that we met on the 17th day of November,
A.D., 2006, and proceeded publicly to canvass the votes given for the several
offices and persons herein specified at the **Nonpartisan Election** held on the 7th
day of November, A.D., 2006 as shown by the returns on file in the office of the
Supervisor of Elections. We do hereby certify from said returns as follows:

RECEIVED
DEPARTMENT OF STATE
06 NOV 27 PM 2:22
DIVISION OF ELECTIONS
TALLAHASSEE, FLORIDA

Retention of Justice R. Fred Lewis of the Supreme Court

YES 2,333 votes
NO 1,557 votes

Retention of Justice Barbara Joan Pariente of the Supreme Court

YES 2,221 votes
NO 1,650 votes

Retention of Justice Peggy A. Quince of the Supreme Court

YES 2,286 votes
NO 1,586 votes

Retention of Judge Darryl C. Casanueva of the Second District Court of Appeal

YES 2,266 votes
NO 1,531 votes

Retention of Judge Charles A. Davis Jr. of the Second District Court of Appeal

YES 2,533 votes
NO 1,301 votes

Retention of Judge Edward C. LaRose of the Second District Court of Appeal

YES 2,326 votes
NO 1,472 votes

Retention of Judge E.J. Salcines of the Second District Court of Appeal

1844

** Official **

YES 2,260 votes
NO 1,537 votes

Retention of Judge Thomas E. Stringer Sr. of the Second District Court of Appeal

YES 2,392 votes
NO 1,391 votes

For Circuit Judge, Tenth Judicial Circuit, Group Twenty-Seven the whole number of votes cast was 3,498 of which number

Ernest M. Jones received 1,679 votes
David R. Carmichael received 1,819 votes

For School Board, District One the whole number of votes cast was 4,209 of which number

~~Don Herndon received _____ votes~~
~~Joe H. Jones received 2,147 votes~~
~~Paul G. Samuels received 2,062 votes~~

For School Board, District Three the whole number of votes cast was _____ of which number

~~Teresa Crawford received _____ votes~~
~~Gina Neuhofer received _____ votes~~

For School Board, District Four the whole number of votes cast was _____ of which number

~~William Glenn Bergens received _____ votes~~
~~Kim Barwick Hanshaw received _____ votes~~
~~Janice Platt received _____ votes~~

For School Board, District Five the whole number of votes cast was _____ of which number

~~George Wendell Cotton received _____ votes~~
~~Brian D. Pohl received _____ votes~~

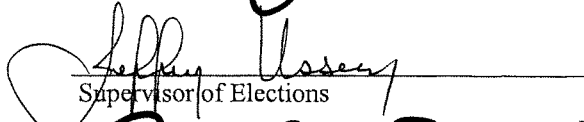
We certify that pursuant to Section 102.112, Florida Statutes, the canvassing board has reconciled the number of persons who voted with the number of

1845

** Official **

ballots counted and that the certification includes all valid votes cast in the election.


County Judge


Supervisor of Elections


Chairman, Board of County Commissioners

** Official **

CERTIFICATE OF COUNTY CANVASSING BOARD

STATE OF FLORIDA

Hardee County

We, the undersigned, Marcus Ezelle County Judge,
Jeffery Ussery, Supervisor of Elections, and
Robert R. Smith Jr., Chairman of the Board of County
Commissioners, constituting the Board of County Canvassers in and for said
County, do hereby certify that we met on the 17th day of November,
A.D., 2006, and proceeded publicly to canvass the votes given for Proposed
Amendments to the Constitution of the State of Florida and local referendums on
the 7th day of November, A.D., 2006 as shown by the returns on file in the office
of the Supervisor of Elections. We do hereby certify from said returns as follows:

RECEIVED
STATE DEPARTMENT OF STATE
06 NOV 27 PM 2:31
JUDICIAL ELECTIONS
TALLAHASSEE, FLORIDA

NO. 1
CONSTITUTIONAL AMENDMENT
ARTICLE III, SECTION 19

STATE PLANNING AND BUDGET PROCESS

Proposing amendments to the State Constitution to limit the amount of nonrecurring general revenue which may be appropriated for recurring purposes in any fiscal year to 3 percent of the total general revenue funds estimated to be available, unless otherwise approved by a three-fifths vote of the Legislature; to establish a Joint Legislative Budget Commission, which shall issue long-range financial outlooks; to provide for limited adjustments in the state budget without the concurrence of the full Legislature, as provided by general law; to reduce the number of times trust funds are automatically terminated; to require the preparation and biennial revision of a long-range state planning document; and to establish a Government Efficiency Task Force and specify its duties.

YES 2,307 votes
NO 1,696 votes

NO. 3
CONSTITUTIONAL AMENDMENT
ARTICLE XI, SECTION 5

REQUIRING BROADER PUBLIC SUPPORT FOR CONSTITUTIONAL AMENDMENTS OR REVISIONS

Proposes an amendment to Section 5 of Article XI of the State Constitution to require that any proposed amendment to or revision of the State Constitution, whether proposed by the Legislature, by initiative, or by any other method, must be approved by at least 60 percent of the voters of the state voting on the measure, rather than by a simple majority. This proposed amendment would not change the current requirement that a proposed constitutional amendment imposing a new state tax or fee be approved by at least 2/3 of the voters of the state voting in the election in which such an amendment is considered.

YES 2,414 votes
NO 1,786 votes

1847

** Official **

NO. 4
CONSTITUTIONAL AMENDMENT
ARTICLE X, SECTION 27

PROTECT PEOPLE, ESPECIALLY YOUTH, FROM ADDICTION, DISEASE, AND OTHER HEALTH HAZARDS OF USING TOBACCO

To protect people, especially youth, from addiction, disease, and other health hazards of using tobacco, the Legislature shall use some Tobacco Settlement money annually for a comprehensive statewide tobacco education and prevention program using Centers for Disease Control best practices. Specifies some program components, emphasizing youth, requiring one-third of total annual funding for advertising. Annual funding is 15% of 2005 Tobacco Settlement payments to Florida, adjusted annually for inflation. Provides definitions. Effective immediately.

This amendment requires state government to appropriate approximately \$57 million in 2007 for the Comprehensive Statewide Tobacco Education and Prevention Program. Thereafter, this amount will increase annually with inflation. This spending is expected to reduce tobacco consumption. As a result, some long-term savings to state and local government health and insurance programs are probable, but indeterminate. Also, minor revenue loss to state government is probable, but indeterminate.

YES 2,615 votes
NO 1,594 votes

NO. 6
CONSTITUTIONAL AMENDMENT
ARTICLE VII, SECTION 6, ARTICLE XII, SECTION 26

INCREASED HOMESTEAD EXEMPTION

Proposing amendment of the State Constitution to increase the maximum additional homestead exemption for low-income seniors from \$25,000 to \$50,000 and to schedule the amendment to take effect January 1, 2007, if adopted.

YES 3,080 votes
NO 1,290 votes

NO. 7
CONSTITUTIONAL AMENDMENT
ARTICLE VII, SECTION 6

PERMANENTLY DISABLED VETERANS' DISCOUNT ON HOMESTEAD AD VALOREM TAX

Proposing an amendment to the State Constitution to provide a discount from the amount of ad valorem tax on the homestead of a partially or totally permanently disabled veteran who is age 65 or older who was a Florida resident at the time of entering military service, whose disability was combat-related, and who was honorably discharged; to specify the percentage of the discount as equal to the percentage of the veteran's permanent service-connected disability; to specify qualification requirements for the discount; to authorize the Legislature to waive the annual application requirement in subsequent years by general law; and to specify that the provision takes effect December 7, 2006, is self-executing, and does not require implementing legislation.

YES 3,384 votes
NO 930 votes

1848

** Official **

NO. 8
CONSTITUTIONAL AMENDMENT
ARTICLE X, SECTION 6

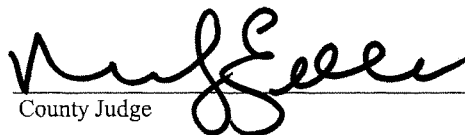
EMINENT DOMAIN

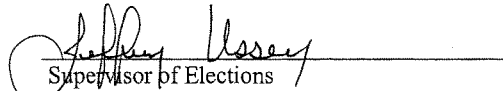
Proposing an amendment to the State Constitution to prohibit the transfer of private property taken by eminent domain to a natural person or private entity; providing that the Legislature may by general law passed by a three-fifths vote of the membership of each house of the Legislature permit exceptions allowing the transfer of such private property; and providing that this prohibition on the transfer of private property taken by eminent domain is applicable if the petition of taking that initiated the condemnation proceeding was filed on or after January 2, 2007.

YES 2,801 votes
NO 1,418 votes

Enter county referendums here

We certify that pursuant to Section 102.112, Florida Statutes, the canvassing board has reconciled the number of persons who voted with the number of ballots counted and that the certification includes all valid votes cast in the election.


County Judge


Supervisor of Elections


Chairman, Board of County Commissioners

Total ballots cast in Hardee County was _____ for a _____ percent turnout.

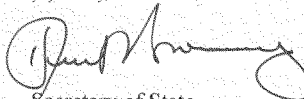
A black and white copy of this document is not official.

**STATE OF FLORIDA
DEPARTMENT OF STATE
Division of Elections**

I, Kurt S. Browning, Secretary of State of the State of Florida, do hereby certify that the attached is a true and correct copy of the official Certificate of the Manatee County Canvassing Board for the General Election held on the Seventh day of November, 2006, as shown by the records of this office.



Given under my hand and the Great Seal of the State of Florida, at Tallahassee, the Capitol, this the 3rd day of January, A. D. 2007.


Secretary of State

DSDE 99 (3/03)

The original document has a reflective line mark in paper. Hold at an angle to view when checking.

** Official **

CERTIFICATE OF COUNTY CANVASSING BOARD

STATE OF FLORIDA

Manatee County

We, the undersigned, Robert Farrance, County Judge,
Robert Sweat, Supervisor of Elections, and
Joe Mc Clash, Chairman of the Board of County
Commissioners, constituting the Board of County Canvassers in and for said
County, do hereby certify that we met on the 17th day of November,
A.D., 2006, and proceeded publicly to canvass the votes given for the several
offices and persons herein specified at the **General Election** held on the 7th day of
November, A.D., 2006 as shown by the returns on file in the office of the
Supervisor of Elections. We do hereby certify from said returns as follows:

For United States Senator the whole number of votes cast was 99623 of
which number

- Katherine Harris (REP) received 42713 votes
- Bill Nelson (DEM) received 55168 votes
- Floyd Ray Frazier (NPA) received 344 votes
- Belinda Noah (NPA) received 471 votes
- Brian Moore (NPA) received 450 votes
- Roy Tanner (NPA) received 334 votes
- Lawrence Scott (WRI) received 1 votes
- Bernard Senter (WRI) received 0 votes

For United States Representative, Eleventh Congressional District the whole
number of votes cast was 3682 of which number

- Eddie Adams Jr. (REP) received 916 votes
- Kathy Castor (DEM) received 2760 votes
- Jim Greenwald (WRI) received 0 votes
- R. J. Spencer (WRI) received 0 votes

For United States Representative, Thirteenth Congressional District the whole
number of votes cast was 94559 of which number

- Vern Buchanan (REP) received 50117 votes
- Christine Jennings (DEM) received 44432 votes

1851

** Official **

For Governor and Lieutenant Governor the whole number of votes cast was

100059 of which number

Charlie Crist and Jeff Kottkamp (REP) received 58035 votes
Jim Davis and Daryl L. Jones (DEM) received 38547 votes
Max Linn and Tom Macklin (REF) received 2755 votes
Richard Paul Dembinsky and Dr. Joe Smith (NPA) received 236 votes
John Wayne Smith and James J. Kearney (NPA) received 227 votes
Karl C.C. Behm and Carol Castagnero (NPA) received 174 votes
Omari Musa and Ellen Brickley (WRI) received 0 votes
Piotr Blass and Jinamarie Gallo (WRI) received 0 votes
C. C. Reed and Mr. T (WRI) received 3 votes

For Attorney General the whole number of votes cast was 98269 of which number

Bill McCollum (REP) received 54424 votes
Walter "Skip" Campbell (DEM) received 43845 votes

For Chief Financial Officer the whole number of votes cast was 96168 of which number

Tom Lee (REP) received 48701 votes
Alex Sink (DEM) received 47467 votes

For Commissioner of Agriculture the whole number of votes cast was

97169 of which number

Charles H. Bronson (REP) received 60951 votes
Eric Copeland (DEM) received 36218 votes

For State Senator, Eighteenth Senatorial District the whole number of votes cast

was 4525 of which number

Arthenia L. Joyner (DEM) received 4403 votes
Eric T. Suntich (WRI) received 0 votes

For State Representative, Sixty-Ninth House District the whole number of votes

cast was 2875 of which number

Laura A. Benson (REP) received 1366 votes
Keith Fitzgerald (DEM) received 1509 votes

1852

** Official **

For Board of County Commissioners, District Six the whole number of votes cast was 96611 of which number

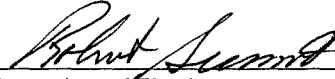
Carol Whitmore (REP) received 57040 votes

Sarah C. Meaker (DEM) received 39571 votes

We certify that pursuant to Section 102.112, Florida Statutes, the canvassing board has reconciled the number of persons who voted with the number of ballots counted and that the certification includes all valid votes cast in the election.



County Judge



Supervisor of Elections



Chairman, Board of County Commissioners

** Official **

CERTIFICATE OF COUNTY CANVASSING BOARD

STATE OF FLORIDA

Manatee County

We, the undersigned, Robert Farrance, County Judge,
Robert Sweat, Supervisor of Elections, and
Joe Mc Clash, Chairman of the Board of County
Commissioners, constituting the Board of County Canvassers in and for said
County, do hereby certify that we met on the 17th day of November,
A.D., 2006, and proceeded publicly to canvass the votes given for the several
offices and persons herein specified at the **Nonpartisan Election** held on the 7th
day of November, A.D., 2006 as shown by the returns on file in the office of the
Supervisor of Elections. We do hereby certify from said returns as follows:

Retention of Justice R. Fred Lewis of the Supreme Court

YES 60821 votes
NO 26496 votes

Retention of Justice Barbara Joan Pariente of the Supreme Court

YES 60878 votes
NO 26107 votes

Retention of Justice Peggy A. Quince of the Supreme Court

YES 61028 votes
NO 25593 votes

Retention of Judge Darryl C. Casanueva of the Second District Court of Appeal

YES 58786 votes
NO 25482 votes

Retention of Judge Charles A. Davis Jr. of the Second District Court of Appeal

YES 61880 votes
NO 23632 votes

Retention of Judge Edward C. LaRose of the Second District Court of Appeal

YES 60576 votes
NO 24501 votes

1854

** Official **

Retention of Judge E.J. Salcines of the Second District Court of Appeal

YES 59220 votes

NO 25995 votes

Retention of Judge Thomas E. Stringer Sr. of the Second District Court of Appeal

YES 60898 votes

NO 23854 votes

For Circuit Judge, Twelfth Judicial Circuit, Group Twenty-One the whole number of votes cast was 85375 of which number

Rochelle Taylor Curley received 46454 votes

Preston DeVilbiss Jr. received 38921 votes

For School Board, District Four the whole number of votes cast was

84370 of which number

Bob C. Gause received 44311 votes

Joseph C. Miller Jr. received 40059 votes

For Palms of Terra Ceia Community Development District, Seat One the whole number of votes cast was 360 of which number

Edwin C. Bennett received 184 votes

Bradford J. Smith received 176 votes

For Palms of Terra Ceia Community Development District, Seat Three the whole number of votes cast was 350 of which number

Jacqueline C. Denton received 182 votes

Rebecca A. Eiss received 168 votes

For Lakewood Ranch Community Development District 4, Seat Two the whole number of votes cast was 541 of which number

Anne Fischer received 232 votes

Carlene M. Smith received 116 votes

Michael H. Spring received 193 votes

For Waterlefe Community Development District, Seat Three the whole number of votes cast was 486 of which number

Richard G. Donoghue received 191 votes

Rosalyn Warner received 295 votes

1855

** Official **

For East Manatee Fire District, Seat Five the whole number of votes cast was

12631 of which number

Glenn A. Davis received 7531 votes

Kevin O'Neill received 5100 votes

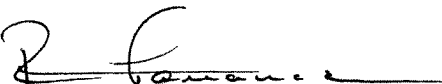
For North River Fire District, Seat One the whole number of votes cast was

13275 of which number


Michael P. Browning received 8694 votes

Rhonda J. Denmark received 4581 votes


We certify that pursuant to Section 102.112, Florida Statutes, the canvassing board has reconciled the number of persons who voted with the number of ballots counted and that the certification includes all valid votes cast in the election.



County Judge



Supervisor of Elections



Chairman, Board of County Commissioners

** Official **

CERTIFICATE OF COUNTY CANVASSING BOARD

STATE OF FLORIDA

Manatee County

We, the undersigned, Robert Farrance, County Judge, Robert Sweat, Supervisor of Elections, and Joe Mc Clash, Chairman of the Board of County Commissioners, constituting the Board of County Canvassers in and for said County, do hereby certify that we met on the 17th day of November, A.D., 2006, and proceeded publicly to canvass the votes given for Proposed Amendments to the Constitution of the State of Florida and local referendums on the 7th day of November, A.D., 2006 as shown by the returns on file in the office of the Supervisor of Elections. We do hereby certify from said returns as follows:

NO. 1
CONSTITUTIONAL AMENDMENT
ARTICLE III, SECTION 19

STATE PLANNING AND BUDGET PROCESS

Proposing amendments to the State Constitution to limit the amount of nonrecurring general revenue which may be appropriated for recurring purposes in any fiscal year to 3 percent of the total general revenue funds estimated to be available, unless otherwise approved by a three-fifths vote of the Legislature; to establish a Joint Legislative Budget Commission, which shall issue long-range financial outlooks; to provide for limited adjustments in the state budget without the concurrence of the full Legislature, as provided by general law; to reduce the number of times trust funds are automatically terminated; to require the preparation and biennial revision of a long-range state planning document; and to establish a Government Efficiency Task Force and specify its duties.

YES 54193 votes
NO 36358 votes

NO. 3
CONSTITUTIONAL AMENDMENT
ARTICLE XI, SECTION 5

REQUIRING BROADER PUBLIC SUPPORT FOR CONSTITUTIONAL AMENDMENTS OR REVISIONS

Proposes an amendment to Section 5 of Article XI of the State Constitution to require that any proposed amendment to or revision of the State Constitution, whether proposed by the Legislature, by initiative, or by any other method, must be approved by at least 60 percent of the voters of the state voting on the measure, rather than by a simple majority. This proposed amendment would not change the current requirement that a proposed constitutional amendment imposing a new state tax or fee be approved by at least 2/3 of the voters of the state voting in the election in which such an amendment is considered.

YES 52236 votes
NO 42455 votes

1857

** Official **

**NO. 4
CONSTITUTIONAL AMENDMENT
ARTICLE X, SECTION 27**

PROTECT PEOPLE, ESPECIALLY YOUTH, FROM ADDICTION, DISEASE, AND OTHER HEALTH HAZARDS OF USING TOBACCO

To protect people, especially youth, from addiction, disease, and other health hazards of using tobacco, the Legislature shall use some Tobacco Settlement money annually for a comprehensive statewide tobacco education and prevention program using Centers for Disease Control best practices. Specifies some program components, emphasizing youth, requiring one-third of total annual funding for advertising. Annual funding is 15% of 2005 Tobacco Settlement payments to Florida, adjusted annually for inflation. Provides definitions. Effective immediately.

This amendment requires state government to appropriate approximately \$57 million in 2007 for the Comprehensive Statewide Tobacco Education and Prevention Program. Thereafter, this amount will increase annually with inflation. This spending is expected to reduce tobacco consumption. As a result, some long-term savings to state and local government health and insurance programs are probable, but indeterminate. Also, minor revenue loss to state government is probable, but indeterminate.

YES 56563 votes
NO 38465 votes

**NO. 6
CONSTITUTIONAL AMENDMENT
ARTICLE VII, SECTION 6, ARTICLE XII, SECTION 26**

INCREASED HOMESTEAD EXEMPTION

Proposing amendment of the State Constitution to increase the maximum additional homestead exemption for low-income seniors from \$25,000 to \$50,000 and to schedule the amendment to take effect January 1, 2007, if adopted.

YES 67019 votes
NO 29014 votes

**NO. 7
CONSTITUTIONAL AMENDMENT
ARTICLE VII, SECTION 6**

PERMANENTLY DISABLED VETERANS' DISCOUNT ON HOMESTEAD AD VALOREM TAX

Proposing an amendment to the State Constitution to provide a discount from the amount of ad valorem tax on the homestead of a partially or totally permanently disabled veteran who is age 65 or older who was a Florida resident at the time of entering military service, whose disability was combat-related, and who was honorably discharged; to specify the percentage of the discount as equal to the percentage of the veteran's permanent service-connected disability; to specify qualification requirements for the discount; to authorize the Legislature to waive the annual application requirement in subsequent years by general law; and to specify that the provision takes effect December 7, 2006, is self-executing, and does not require implementing legislation.

YES 67973 votes
NO 27202 votes

1858

** Official **

**NO. 8
CONSTITUTIONAL AMENDMENT
ARTICLE X, SECTION 6**

EMINENT DOMAIN

Proposing an amendment to the State Constitution to prohibit the transfer of private property taken by eminent domain to a natural person or private entity; providing that the Legislature may by general law passed by a three-fifths vote of the membership of each house of the Legislature permit exceptions allowing the transfer of such private property; and providing that this prohibition on the transfer of private property taken by eminent domain is applicable if the petition of taking that initiated the condemnation proceeding was filed on or after January 2, 2007.

YES 66080 votes

NO 27124 votes

DUETTE FIRE AND RESCUE DISTRICT CREATION AND AUTHORITY REFERENDUM

In order to obtain a high level of life safety and property protection, Shall the Duette Fire and Rescue District be created and authorized to exercise all powers of independent special fire district as set forth in Chapters 191 and 189 of the Florida Statutes including the authority to levy fees and charges as set forth in Chapter 2006-352, Laws of Florida.

YES 178 votes

NO 47 votes

**A REFERENDUM TO INCREASE IMPACT FEES ON NEW CONSTRUCTION IN THE WEST
MANATEE FIRE & RESCUE DISTRICT**

Shall West Manatee Fire & Rescue District be allowed to increase impact fees on new construction only, to pay for new equipment and facilities as necessary to accommodate new growth?

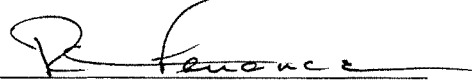
YES 9081 votes

NO 4207 votes


1859

** Official **

We certify that pursuant to Section 102.112, Florida Statutes, the canvassing board has reconciled the number of persons who voted with the number of ballots counted and that the certification includes all valid votes cast in the election.



County Judge



Supervisor of Elections



Chairman, Board of County Commissioners

Total ballots cast in Manatee County was 100637 for a 50.575 percent turnout.

A black and white copy of this document is not official.

**STATE OF FLORIDA
DEPARTMENT OF STATE
Division of Elections**

I, Kurt S. Browning, Secretary of State of the State of Florida, do hereby certify that the attached is a true and correct copy of the official Certificate of the Sarasota County Canvassing Board for the General Election held on the Seventh day of November, 2006, as shown by the records of this office.



Given under my hand and the Great Seal of the State of Florida, at Tallahassee, the Capitol, this the 3rd day of January, A. D. 2007.


Secretary of State

DSD 99 (3/03)

The original document has a reflective line mark in paper. Hold at an angle to view when checking.

1861

Kathy Dent
Supervisor of Elections
Sarasota County Florida

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DIVISION OF ELECTIONS
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DIVISION OF ELECTIONS
TALLAHASSEE, FLORIDA

MEMORANDUM

To: Dawn K. Roberts, Director
Division of Elections

From: *KD* Kathy Dent, Supervisor of Elections

Date: November 18, 2006

Re: Official Election Results and Conduct of Election Report

Pursuant to § 102.141 Fla. Stat. enclosed are the Certificates of the County Canvassing Board certifying the official results for the General, Municipal and Special Elections held on November 7 2006, in Sarasota County and the Conduct of Election Report.

KD/lw

Enclosures

** Official **

CERTIFICATE OF COUNTY CANVASSING BOARD

STATE OF FLORIDA

Sarasota County

We, the undersigned, Phyllis Galen, County Judge, Kathy Dent, Supervisor of Elections, and Paul Mercier, County Commissioner, constituting the Board of County Canvassers in and for said County, do hereby certify that we met on the 17th day of November, A.D., 2006, and proceeded publicly to canvass the votes given for the several offices and persons herein specified at the **General Election** held on the 7th day of November, A.D., 2006 as shown by the returns on file in the office of the Supervisor of Elections. We do hereby certify from said returns as follows:

For United States Senator the whole number of votes cast was 140,787 of which number

Katherine Harris (REP) received	<u>58,339</u>	votes
Bill Nelson (DEM) received	<u>80,177</u>	votes
Floyd Ray Frazier (NPA) received	<u>549</u>	votes
Belinda Noah (NPA) received	<u>692</u>	votes
Brian Moore (NPA) received	<u>604</u>	votes
Roy Tanner (NPA) received	<u>423</u>	votes
Lawrence Scott (WRI) received	<u>3</u>	votes
Bernard Senter (WRI) received	<u>0</u>	votes

For United States Representative, Thirteenth Congressional District the whole number of votes cast was 124,119 of which number

Vern Buchanan (REP) received	<u>58,632</u>	votes
Christine Jennings (DEM) received	<u>65,487</u>	votes

For Governor and Lieutenant Governor the whole number of votes cast was 140,557 of which number

Charlie Crist and Jeff Kottkamp (REP) received	<u>76,198</u>	votes
Jim Davis and Daryl L. Jones (DEM) received	<u>60,214</u>	votes
Max Linn and Tom Macklin (REF) received	<u>2,911</u>	votes
Richard Paul Dembinsky and Dr. Joe Smith (NPA) received	<u>440</u>	votes
John Wayne Smith and James J. Kearney (NPA) received	<u>438</u>	votes
Karl C.C. Behm and Carol Castagnero (NPA) received	<u>355</u>	votes
Omari Musa and Ellen Brickley (WRI) received	<u>0</u>	votes
Piotr Blass and Jinamarie Gallo (WRI) received	<u>1</u>	votes

1863

** Official **

C. C. Reed and Mr. T (WRI) received 0 votes

For Attorney General the whole number of votes cast was 136,232 of which number

Bill McCollum (REP) received 72,185 votes

Walter "Skip" Campbell (DEM) received 64,047 votes

For Chief Financial Officer the whole number of votes cast was 136,134 of which number

Tom Lee (REP) received 66,965 votes

Alex Sink (DEM) received 69,169 votes

For Commissioner of Agriculture the whole number of votes cast was 135,059 of which number

Charles H. Bronson (REP) received 79,406 votes

Eric Copeland (DEM) received 55,653 votes

For State Representative, Sixty-Ninth House District the whole number of votes cast was 43,973 of which number

Laura A. Benson (REP) received 21,539 votes

Keith Fitzgerald (DEM) received 22,434 votes

For State Representative, Seventieth House District the whole number of votes cast was 64,987 of which number

Doug Holder (REP) received 32,868 votes

David Shapiro (DEM) received 32,119 votes

For State Representative, Seventy-First House District the whole number of votes cast was 11,692 of which number

Michael J. Grant (REP) received 11,687 votes

Robert Peter Rice (WRI) received 5 votes

For Charter Review Board, District One the whole number of votes cast was 129,452 of which number

Stefan Butz (REP) received 69,151 votes

Michael E. Keisman (DEM) received 60,301 votes

1864

** Official **

For Charter Review Board District Two the whole number of votes cast was
118,745 of which number

Dan H. McLeroy Jr. (REP) received 76,405 votes
Gaines E. Anderson III (NPA) received 42,340 votes

For Charter Review Board District Three the whole number of votes cast was
128,202 of which number

Adam R. Miller (REP) received 68,697 votes
Bryan K. Worthington (DEM) received 59,505 votes

For Charter Review Board District Four the whole number of votes cast
was 128,013 of which number

Charles A. Cooper (REP) received 68,071 votes
Wade Matthews (DEM) received 59,942 votes

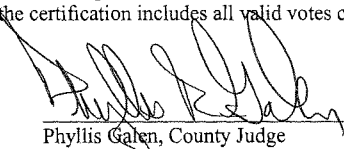
For Charter Review Board District Five the whole number of votes cast was
128,432 of which number

Kevin T. Connelly (REP) received 63,361 votes
Deborah J. (Debbie) Trice (DEM) received 65,071 votes

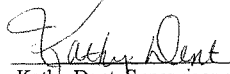
For Hospital Board Southern District Seat One the whole number of votes cast
was 128,323 of which number

Gerald M. Phillips (REP) received 64,799 votes
Sam George (DEM) received 63,524 votes

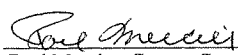
We certify that pursuant to Section 102.112, Florida Statutes, the canvassing board has reconciled the number of persons who voted with the number of ballots counted and that the certification includes all valid votes cast in the election.



Phyllis Gaten, County Judge



Kathy Dent, Supervisor of Elections



Paul Mercier, County Commissioners

** Official **

CERTIFICATE OF COUNTY CANVASSING BOARD

STATE OF FLORIDA

Sarasota County

We, the undersigned, Phyllis Galen, County Judge, Kathy Dent, Supervisor of Elections, and Paul Mercier, County Commissioner, constituting the Board of County Canvassers in and for said County, do hereby certify that we met on the 17th day of November, A.D., 2006, and proceeded publicly to canvass the votes given for the several offices and persons herein specified at the **Nonpartisan Election** held on the 7th day of November, A.D., 2006 as shown by the returns on file in the office of the Supervisor of Elections. We do hereby certify from said returns as follows:

Retention of Justice R. Fred Lewis of the Supreme Court

YES 86,046 votesNO 32,246 votes

Retention of Justice Barbara Joan Pariente of the Supreme Court

YES 87,182 votesNO 31,522 votes

Retention of Justice Peggy A. Quince of the Supreme Court

YES 86,940 votesNO 30,338 votes

Retention of Judge Darryl C. Casanueva of the Second District Court of Appeal

YES 85,403 votesNO 29,999 votes

Retention of Judge Charles A. Davis Jr. of the Second District Court of Appeal

YES 87,969 votesNO 27,897 votes

Retention of Judge Edward C. LaRose of the Second District Court of Appeal

YES 87,245 votesNO 28,201 votes

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** Official **

Retention of Judge E.J. Salcines of the Second District Court of Appeal

YES 84,358 votes
NO 30,185 votes

Retention of Judge Thomas E. Stringer Sr. of the Second District Court of Appeal

YES 86,550 votes
NO 28,155 votes

For Circuit Judge, Twelfth Judicial Circuit, Group Twenty-One the whole number of votes cast was 119,464 of which number

Rochelle Taylor Curley received 66,847 votes
Preston DeVilbiss Jr. received 52,617 votes

For Bobcat Trail Community Development District, Seat One the whole number of votes cast was 440 of which number

John F. Muller received 218 votes
Louis F. Robbio received 222 votes

For Bobcat Trail Community Development District, Seat Two the whole number of votes cast was 441 of which number

Sandra M. Burns received 226 votes
Kenneth R. Cisewski received 215 votes

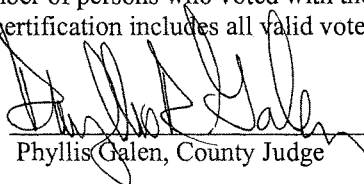
For Lakeside Plantation Community Development District, Seat Two the whole number of votes cast was 288 of which number

Gwynne Balson received 126 votes
Edwin L. Meyer received 78 votes
Vincent E. Placanica received 84 votes

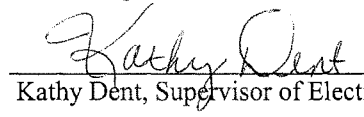
1867

** Official **

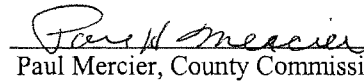
We certify that pursuant to Section 102.112, Florida Statutes, the canvassing board has reconciled the number of persons who voted with the number of ballots counted and that the certification includes all valid votes cast in the election.



Phyllis Galen, County Judge



Kathy Dent, Supervisor of Elections



Paul Mercier, County Commissioner

** Official **

CERTIFICATE OF COUNTY CANVASSING BOARD

STATE OF FLORIDA

Sarasota County

We, the undersigned, Phyllis Galen, County Judge, Kathy Dent, Supervisor of Elections, and Paul Mercier, County Commissioner, constituting the Board of County Canvassers in and for said County, do hereby certify that we met on the 17th day of November, A.D., 2006, and proceeded publicly to canvass the votes given for Proposed Amendments to the Constitution of the State of Florida and local referendums on the 7th day of November, A.D., 2006 as shown by the returns on file in the office of the Supervisor of Elections. We do hereby certify from said returns as follows:

RECORDED
DEPARTMENT OF STATE
06 NOV 22 AM 11:03
DIVISION OF ELECTIONS
TALLAHASSEE, FLORIDA

NO. 1
CONSTITUTIONAL AMENDMENT
ARTICLE III, SECTION 19

STATE PLANNING AND BUDGET PROCESS

Proposing amendments to the State Constitution to limit the amount of nonrecurring general revenue which may be appropriated for recurring purposes in any fiscal year to 3 percent of the total general revenue funds estimated to be available, unless otherwise approved by a three-fifths vote of the Legislature; to establish a Joint Legislative Budget Commission, which shall issue long-range financial outlooks; to provide for limited adjustments in the state budget without the concurrence of the full Legislature, as provided by general law; to reduce the number of times trust funds are automatically terminated; to require the preparation and biennial revision of a long-range state planning document; and to establish a Government Efficiency Task Force and specify its duties.

YES 67,266 votes
NO 60,353 votes

NO. 3
CONSTITUTIONAL AMENDMENT
ARTICLE XI, SECTION 5

REQUIRING BROADER PUBLIC SUPPORT FOR CONSTITUTIONAL AMENDMENTS OR REVISIONS

Proposes an amendment to Section 5 of Article XI of the State Constitution to require that any proposed amendment to or revision of the State Constitution, whether proposed by the Legislature, by initiative, or by any other method, must be approved by at least 60 percent of the voters of the state voting on the measure, rather than by a simple majority. This proposed amendment would not change the current requirement that a proposed constitutional amendment imposing a new state tax or fee be approved by at least 2/3 of the voters of the state voting in the election in which such an amendment is considered.

YES 73,515 votes
NO 60,525 votes

1869

** Official **

NO. 4
CONSTITUTIONAL AMENDMENT
ARTICLE X, SECTION 27

PROTECT PEOPLE, ESPECIALLY YOUTH, FROM ADDICTION, DISEASE, AND OTHER HEALTH HAZARDS OF USING TOBACCO

To protect people, especially youth, from addiction, disease, and other health hazards of using tobacco, the Legislature shall use some Tobacco Settlement money annually for a comprehensive statewide tobacco education and prevention program using Centers for Disease Control best practices. Specifies some program components, emphasizing youth, requiring one-third of total annual funding for advertising. Annual funding is 15% of 2005 Tobacco Settlement payments to Florida, adjusted annually for inflation. Provides definitions. Effective immediately.

This amendment requires state government to appropriate approximately \$57 million in 2007 for the Comprehensive Statewide Tobacco Education and Prevention Program. Thereafter, this amount will increase annually with inflation. This spending is expected to reduce tobacco consumption. As a result, some long-term savings to state and local government health and insurance programs are probable, but indeterminate. Also, minor revenue loss to state government is probable, but indeterminate.

YES 84,810 votes

NO 50,923 votes

NO. 6
CONSTITUTIONAL AMENDMENT
ARTICLE VII, SECTION 6, ARTICLE XII, SECTION 26

INCREASED HOMESTEAD EXEMPTION

Proposing amendment of the State Constitution to increase the maximum additional homestead exemption for low-income seniors from \$25,000 to \$50,000 and to schedule the amendment to take effect January 1, 2007, if adopted.

YES 96,122 votes

NO 41,532 votes

NO. 7
CONSTITUTIONAL AMENDMENT
ARTICLE VII, SECTION 6

PERMANENTLY DISABLED VETERANS' DISCOUNT ON HOMESTEAD AD VALOREM TAX

Proposing an amendment to the State Constitution to provide a discount from the amount of ad valorem tax on the homestead of a partially or totally permanently disabled veteran who is age 65 or older who was a Florida resident at the time of entering military service, whose disability was combat-related, and who was honorably discharged; to specify the percentage of the discount as equal to the percentage of the veteran's permanent service-connected disability; to specify qualification requirements for the discount; to authorize the Legislature to waive the annual application requirement in subsequent years by general law; and to specify that the provision takes effect December 7, 2006, is self-executing, and does not require implementing legislation.

YES 94,753 votes

NO 40,521 votes

1870

** Official **

NO. 8
CONSTITUTIONAL AMENDMENT
ARTICLE X, SECTION 6

EMINENT DOMAIN

Proposing an amendment to the State Constitution to prohibit the transfer of private property taken by eminent domain to a natural person or private entity; providing that the Legislature may by general law passed by a three-fifths vote of the membership of each house of the Legislature permit exceptions allowing the transfer of such private property; and providing that this prohibition on the transfer of private property taken by eminent domain is applicable if the petition of taking that initiated the condemnation proceeding was filed on or after January 2, 2007.

YES 84,753 votes
NO 46,474 votes

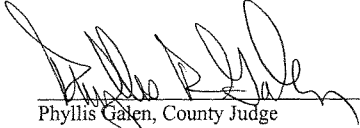
SARASOTA COUNTY CHARTER AMENDMENT

MANDATORY VOTER VERIFIED PAPER BALLOTS; INDEPENDENT RANDOM AUDITS OF ELECTION RESULTS; AUDITS REQUIRED BEFORE CERTIFICATION

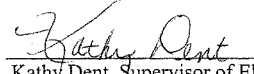
Amend the Sarasota County Charter to require that, effective January 1, 2008; (1) all County Voting systems provide a voter verified paper ballot; (2) in addition to election code audits, mandatory independent random audits of elections results be conducted in every election comparing hand counts to machine counts; (3) mandatory manual audit of all paper ballots if audit discrepancies reach specified thresholds; (4) no election certified until all mandatory audits are complete and any inaccuracies resolved.

YES 74,026 votes
NO 59,525 votes

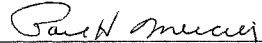
We certify that pursuant to Section 102.112, Florida Statutes, the canvassing board has reconciled the number of persons who voted with the number of ballots counted and that the certification includes all valid votes cast in the election.



Phyllis Galen, County Judge



Kathy Dent, Supervisor of Elections



Paul Mercier, County Commissioner

Total ballots cast in Sarasota County was 142,532 for a 56.90 percent turnout.

1871

Official

CERTIFICATE OF COUNTY CANVASSING BOARD

STATE OF FLORIDA
Sarasota County

RECEIVED
OFFICE OF THE
08 NOV 22 AM 11:04
SUPERVISOR OF ELECTIONS
TALLAHASSEE, FLORIDA

We, the undersigned, **PHYLLIS GALEN**, County Judge, **KATHY DENT**, Supervisor of Elections, and **PAUL MERCIER**, County Commissioner, constituting the Board of County Canvassers in and for said County, do hereby certify that we met on the 17th day of November, A.D., 2006, and proceeded publicly to canvass the votes given for the **CITY OF VENICE GENERAL ELECTION** held on the 7th day of November, A.D., 2006, as shown by the returns on file in the office of the Supervisor of Elections. We do hereby certify from said returns as follows:

For City Council Member **SEAT 3**, the whole number of votes cast was 8,945 of which number,

John Simmonds received 4,680 votes

Ernest Zavodnyik received 4,265 votes

Amendment 1

Amendment Regarding the Suspension or Removal of the Police Chief and Fire Chief

Shall the City of Venice Charter be amended to eliminate the requirement that the city manager obtain the advice and consent of city council in order to suspend or remove the police chief and fire chief?

YES, for the charter amendment 4,002 votes

NO, against the charter amendment 5,307 votes

Amendment 2

Amendment to Change the Finance Director from a Charter Officer to a department Head

Shall the City of Venice Charter be amended to change the position of Finance Director from a charter officer who serves at the pleasure of city council to a department head supervised by the city manager?

YES, for the charter amendment 5,035 votes

NO, against the charter amendment 4,033 votes

Amendment 3

Amendment Regarding the Term of Office for Mayor when Filling a Vacancy

Shall the City of Venice Charter be amended to provide that when filling a vacancy in the office of mayor that the person elected to fill the vacancy shall be elected for a term of three years?

YES, for the charter amendment 5,050 votes

NO, against the charter amendment 4,149 votes

1872

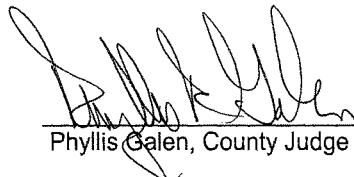
Official

Amendment 4

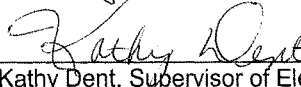
Amendment Regarding Term Limits for the Offices of Mayor and Councilmember

Shall the City of Venice Charter be amended to provide that no person shall serve as mayor for more than three consecutive elected terms; that no person shall serve as councilmember for more than three consecutive elected terms; and that no person shall serve as mayor and as councilmember in any combination for more than six consecutive elected terms?

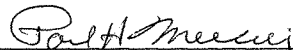
YES, for the charter amendment 7,357 votes
NO, against the charter amendment 1,892 votes



Phyllis Galen, County Judge



Kathy Dent, Supervisor of Elections



Paul Mercier, County Commissioner

1873

****Official****

CERTIFICATE OF COUNTY CANVASSING BOARD

RECEIVED
06 NOV 22 AM 11:04
DIVISION OF ELECTIONS
TALLAHASSEE, FLORIDA

STATE OF FLORIDA
Sarasota County

We, the undersigned, **PHYLLIS GALEN**, County Judge, **KATHY DENT**, Supervisor of Elections, and **PAUL MERCIER**, County Commissioner, constituting the Board of County Canvassers in and for said County, do hereby certify that we met on the 17th day of November, A.D., 2006, and proceeded publicly to canvass the votes given for the **CITY OF NORTH PORT GENERAL ELECTION** held on the 7th day of November, A.D., 2006, as shown by the returns on file in the office the Supervisor of Elections. We do hereby certify from said returns as follows:

For Commissioner **SEAT 4**, the whole number of votes cast was 11,064 of which number,

Jim Blucher received 5,639 votes
David J. Garofalo received 5,425 votes

For Commissioner **SEAT 5**, the whole number of votes cast was 11,104 of which number,

Vanessa Carusone received 6,530 votes
Levko Klos received 4,574 votes

PROPOSED UTILITY BOND REFERENDUM ELECTION

Approval of Utility Revenue Bonds to Finance Improvements of Sewer Treatment and Reclaimed Water Systems.

Shall the City of North Port be authorized to issue revenue bonds maturing not later than 30 years from their issuance in an aggregate principal amount not exceeding \$50,000,000, interest upon which will not exceed the maximum legal rate, to finance sewer treatment plant capacity and other related sewer and reclaimed water improvements, which bonds shall be payable from utility revenues and legally available impact fees and NOT from ad valorem property taxes?

YES FOR BONDS 8,883 votes
NO AGAINST BONDS 2,256 votes

CHARTER AMENDMENT QUESTION ONE

Presently the Canvassing of the Elections for the North Port City Commission is done at 9:30 A.M. on the day following the Special or General Election. As a result of changes in State law, do you favor amending the City Charter to provide the canvassing elections meeting will be held after certification of ballots by the Supervisor of Elections?

YES for Approval 8,686 votes
NO for Rejection 1,978 votes

1874

****Official ****

CHARTER AMENDMENT QUESTION TWO

Presently the assumption of office meeting where new or reelected Commissioners are sworn into office is held at 9:30 AM on the second day following the election. As a result of changes in State law, are you in favor of moving the assumption of office meeting to the day following certification of ballots by the Supervisor of Elections?

YES for Approval 8,936 votes

NO for Rejection 1,864 votes

CHARTER AMENDMENT QUESTION THREE

Presently the City Charter requires the City Commission to meet regularly not less than once each month. It has been the past practice of Cities and Counties in Florida not to meet in the month of August for vacation. Are you in favor of amending the City Charter to require a regular monthly meeting, except in August?

YES for Approval 7,474 votes

NO for Rejection 3,586 votes

CHARTER AMENDMENT QUESTION FOUR

Presently the City Charter provides that all general obligation bonds and revenue bonds issued by the City must be approved by a vote of the majority of the qualified electors of the City. Are you in favor of amending the City Charter to eliminate the referendum requirement for revenue bonds which have an independent source of funding and do not require the pledging of the ad valorem taxing power of the City Commission?

YES for Approval 4,791 votes

NO for Rejection 5,862 votes

CHARTER AMENDMENT QUESTION FIVE

Presently the City Charter provides for that an emergency ordinance may be enacted by a vote of four (4) members of the City Commission when deemed necessary for the public health, safety and welfare of the City. Are you in favor of amending the City Charter to provide that if the City Commission is unable to meet for reasons beyond their control in times of an emergency to enact an emergency ordinance relating to the temporary procurement of goods and services, to delegate that responsibility to the City Manager or to his designee, to be ratified by the Commission at a subsequent meeting?

YES for Approval 6,715 votes

NO for Rejection 4,139 votes

1875

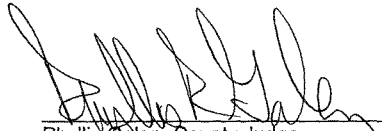
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CHARTER AMENDMENT QUESTION SIX

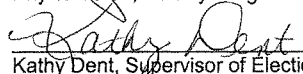
Presently the City Charter requires that resolutions be read in total at a public meeting prior to adoption. At meetings with more than one resolution to consider, reading in total can be a time consuming matter. Are you in favor of amending the City Charter to allow resolutions to be read by their title only prior to being proffered for adoption to the City Commission?

YES for Approval 5,801 votes

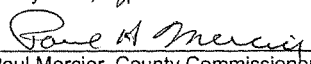
NO for Rejection 5,200 votes



Phyllis Galen, County Judge



Kathy Dent, Supervisor of Elections



Paul Mercier, County Commissioner

1876

Tab 11

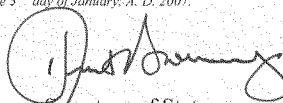
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**STATE OF FLORIDA
DEPARTMENT OF STATE
Division of Elections**

I, Kurt S. Browning, Secretary of State of the State of Florida, do hereby certify that the attached is a true and correct copy of the official Certificate of the State Elections Canvassing Commission for the General Election held on the Seventh day of November, 2006, as shown by the records of this office.



Given under my hand and the Great Seal of the State of Florida, at Tallahassee, the Capitol, this the 3rd day of January, A. D. 2007.


Secretary of State

DSDE 99 (3/03)

The original document has a reflective line mark in paper. Hold at an angle to view when checking.

OFFICIAL CERTIFICATE OF THE STATE ELECTIONS
CANVASSING COMMISSION OF THE GENERAL
ELECTION HELD ON THE SEVENTH DAY
OF NOVEMBER, A. D., 2006

We, JEB BUSH, Governor, TOM GALLAGHER, Chief Financial Officer, and DANIEL WEBSTER, State Senator, constituting the State Elections Canvassing Commission, hereby certify the election returns of the general election held in the State of Florida on the Seventh day of November, A.D., 2006, as shown by the returns of said general election on file in the office of the Secretary of State from all the counties in Florida and herewith give below the results of said canvass:

For United States Senator, the whole number of votes cast was 4,793,534 of which number

Katherine Harris (REP)	received	<u>1,826,127</u>	votes
Bill Nelson (DEM)	received	<u>2,890,548</u>	votes
Floyd Ray Frazier (NPA)	received	<u>16,628</u>	votes
Belinda Noah (NPA)	received	<u>24,880</u>	votes
Brian Moore (NPA)	received	<u>19,695</u>	votes
Roy Tanner (NPA)	received	<u>15,562</u>	votes
Lawrence Scott (WRI)	received	<u>78</u>	votes
Bernard Senter (WRI)	received	<u>16</u>	votes

For United States Representative, First District, the whole number of votes cast was 198,126 of which number

Jeff Miller (REP)	received	<u>135,786</u>	votes
Joe Roberts (DEM)	received	<u>62,340</u>	votes

For United States Representative, Fourth District, the whole number of votes cast was 203,479 of which number

Ander Crenshaw (REP)	received	<u>141,759</u>	votes
Robert J. Harms (DEM)	received	<u>61,704</u>	votes
John Blade (WRI)	received	<u>16</u>	votes

For United States Representative, Fifth District, the whole number of votes cast was 271,380 of which number

Virginia "Ginny" Brown-Waite (REP)	received	<u>162,421</u>	votes
John Russell (DEM)	received	<u>108,959</u>	votes

For United States Representative, Sixth District, the whole number of votes cast was 228,129 of which number

Clifford (Cliff) B. Stearns (REP)	received	<u>136,601</u>	votes
David E. Bruderly (DEM)	received	<u>91,528</u>	votes

For United States Representative, Seventh District, the whole number of votes cast was 237,240 of which number

John L. Mica (REP)	received	<u>149,656</u> votes
John F. Chagnon (DEM)	received	<u>87,584</u> votes

For United States Representative, Eighth District, the whole number of votes cast was 180,444 of which number

Ric Keller (REP)	received	<u>95,258</u> votes
Charlie Stuart (DEM)	received	<u>82,526</u> votes
Wes Hoaglund (NPA)	received	<u>2,640</u> votes
Clay O. Hill (WRI)	received	<u>0</u> votes
D. J. Mauro (WRI)	received	<u>17</u> votes
Larry Sapp (WRI)	received	<u>3</u> votes

For United States Representative, Ninth District, the whole number of votes cast was 220,013 of which number

Gus Michael Bilirakis (REP)	received	<u>123,016</u> votes
Phyllis Busansky (DEM)	received	<u>96,978</u> votes
Andrew Pasayan (WRI)	received	<u>19</u> votes

For United States Representative, Tenth District, the whole number of votes cast was 199,445 of which number

C. W. Bill Young (REP)	received	<u>131,488</u> votes
Samm Simpson (DEM)	received	<u>67,950</u> votes
Salvatore A. Fiorella (WRI)	received	<u>7</u> votes

For United States Representative, Eleventh District, the whole number of votes cast was 139,942 of which number

Eddie Adams Jr. (REP)	received	<u>42,454</u> votes
Kathy Castor (DEM)	received	<u>97,470</u> votes
Jim Greenwald (WRI)	received	<u>13</u> votes
R. J. Spencer (WRI)	received	<u>5</u> votes

For United States Representative, Twelfth District, the whole number of votes cast was 180,064 of which number

Adam H. Putnam (REP)	received	<u>124,452</u> votes
Joe Viscusi (NPA)	received	<u>34,976</u> votes
Ed Bowlin (NPA)	received	<u>20,636</u> votes

For United States Representative, Thirteenth District, the whole number of votes cast was 238,249 of which number

Vern Buchanan (REP)	received	<u>119,309</u> votes
Christine Jennings (DEM)	received	<u>118,940</u> votes

For United States Representative, Fourteenth District, the whole number of votes cast was 235,539 of which number

Connie Mack (REP)	received	<u>151,615</u> votes
Robert M. Neeld (DEM)	received	<u>83,920</u> votes
Dan (WRI)	received	<u>1</u> votes
Richard Grayson (WRI)	received	<u>3</u> votes

For United States Representative, Fifteenth District, the whole number of votes cast was 223,799 of which number

Dave Weldon (REP)	received	<u>125,965</u> votes
Bob Bowman (DEM)	received	<u>97,834</u> votes

For United States Representative, Sixteenth District, the whole number of votes cast was 233,773 of which number

Joe Negron (REP)	received	<u>111,415</u> votes
Tim Mahoney (DEM)	received	<u>115,832</u> votes
Emmie Ross (NPA)	received	<u>6,526</u> votes

For United States Representative, Seventeenth District, the whole number of votes cast was 90,686 of which number

Kendrick B. Meek (DEM)	received	<u>90,663</u> votes
Eric Simpson (WRI)	received	<u>23</u> votes

For United States Representative, Eighteenth District, the whole number of votes cast was 128,132 of which number

Ileana Ros-Lehtinen (REP)	received	<u>79,631</u> votes
David "Big Dave" Patlak (DEM)	received	<u>48,499</u> votes
Margaret Trowe (WRI)	received	<u>2</u> votes

For United States Representative, Twenty-First District, the whole number of votes cast was 112,306 of which number

Lincoln Diaz-Balart (REP)	received	<u>66,784</u> votes
Frank J. Gonzalez (DEM)	received	<u>45,522</u> votes

For United States Representative, Twenty-Second District, the whole number of votes cast was 213,605 of which number

Clay Shaw (REP)	received	<u>100,663</u>	votes
Ron Klein (DEM)	received	<u>108,688</u>	votes
Neil Evangelista (NPA)	received	<u>4,254</u>	votes

For United States Representative, Twenty-Fourth District, the whole number of votes cast was 213,658 of which number

Tom Feeney (REP)	received	<u>123,795</u>	votes
Clint Curtis (DEM)	received	<u>89,863</u>	votes

For United States Representative, Twenty-Fifth District, the whole number of votes cast was 103,933 of which number

Mario Diaz-Balart (REP)	received	<u>60,765</u>	votes
Michael Calderin (DEM)	received	<u>43,168</u>	votes

For Governor and Lieutenant Governor, the whole number of votes cast was 4,829,270 of which number

Charlie Crist / Jeff Kottkamp (REP)	received	<u>2,519,845</u>	votes
Jim Davis / Daryl L. Jones (DEM)	received	<u>2,178,289</u>	votes
Max Linn / Tom Macklin (REF)	received	<u>92,595</u>	votes
Richard Paul Dembinsky / Dr. Joe Smith (NPA)	received	<u>11,921</u>	votes
John Wayne Smith / James J. Kearney (NPA)	received	<u>15,987</u>	votes
Karl C.C. Behm / Carol Castagnero (NPA)	received	<u>10,486</u>	votes
Omari Musa / Ellen Brickley (WRI)	received	<u>76</u>	votes
Piotr Blass / Jinamarie Gallo (WRI)	received	<u>18</u>	votes
C. C. Reed / Mr. T (WRI)	received	<u>53</u>	votes

For Attorney General, the whole number of votes cast was 4,645,967 of which number

Bill McCollum (REP)	received	<u>2,448,008</u>	votes
Walter "Skip" Campbell (DEM)	received	<u>2,197,959</u>	votes

For Chief Financial Officer, the whole number of votes cast was 4,631,093 of which number

Tom Lee (REP)	received	<u>2,151,232</u>	votes
Alex Sink (DEM)	received	<u>2,479,861</u>	votes

For Commissioner of Agriculture, the whole number of votes cast was 4,654,297 of which number

Charles H. Bronson (REP)	received	<u>2,651,833</u>	votes
Eric Copeland (DEM)	received	<u>2,002,464</u>	votes

**For State Senator, Eighth District, the whole number of votes cast was
116,819 of which number**

James E. "Jim" King Jr. (REP)	received	<u>116,475</u> votes
Joseph Ellyson (WRI)	received	<u>72</u> votes
Marsha L. Morrison (WRI)	received	<u>272</u> votes

**For State Senator, Tenth District, the whole number of votes cast was
130,941 of which number**

Ronda Storms (REP)	received	<u>68,175</u> votes
Stephen Gorham (DEM)	received	<u>62,756</u> votes
Victoria Brake (WRI)	received	<u>10</u> votes

**For State Senator, Twelfth District, the whole number of votes cast was
120,730 of which number**

Victor Crist (REP)	received	<u>85,835</u> votes
C. Burt Linthicum (CPF)	received	<u>34,895</u> votes

**For State Senator, Fourteenth District, the whole number of votes cast was
120,335 of which number**

Steve Oelrich (REP)	received	<u>64,714</u> votes
Ed Jennings Jr. (DEM)	received	<u>55,621</u> votes

**For State Senator, Sixteenth District, the whole number of votes cast was
124,991 of which number**

Kimberly "Kim" Berfield (REP)	received	<u>60,978</u> votes
Charlie Justice (DEM)	received	<u>64,013</u> votes

**For State Senator, Eighteenth District, the whole number of votes cast was
63,047 of which number**

Arthenia L. Joyner (DEM)	received	<u>63,023</u> votes
Eric T. Suntich (WRI)	received	<u>24</u> votes

**For State Senator, Twenty-Second District, the whole number of votes cast
was 109,962 of which number**

Lee Constantine (REP)	received	<u>65,538</u> votes
Jeremiah Jaspon (DEM)	received	<u>44,424</u> votes

**For State Senator, Twenty-Eighth District, the whole number of votes cast
was 164,642 of which number**

Ken Pruitt (REP)	received	<u>101,558</u> votes
Stan Smilan (DEM)	received	<u>63,084</u> votes

For State Senator, Thirtieth District, the whole number of votes cast was 128,418 of which number

Ted Deutch (DEM)	received	<u>112,733</u> votes
Karl Dickey (LIB)	received	<u>15,683</u> votes
George Harageones (WRI)	received	<u>2</u> votes

For State Senator, Thirty-Second District, the whole number of votes cast was 80,707 of which number

Jeremy Ring (DEM)	received	<u>80,667</u> votes
Kenneth S. Lunkins (WRI)	received	<u>40</u> votes

For State Senator, Thirty-Sixth District, the whole number of votes cast was 50,909 of which number

Alex Diaz de la Portilla (REP)	received	<u>50,879</u> votes
Angie Rodriguez (WRI)	received	<u>30</u> votes

For State Senator, Thirty-Eighth District, the whole number of votes cast was 71,234 of which number

J. Alex Villalobos (REP)	received	<u>55,592</u> votes
Leighton W. Lang (NPA)	received	<u>15,642</u> votes
Alejandro Rizo (WRI)	received	<u>0</u> votes

For State Representative, Third District, the whole number of votes cast was 37,879 of which number

Holly Benson (REP)	received	<u>23,655</u> votes
Elizabeth Campbell (DEM)	received	<u>14,224</u> votes

For State Representative, Fifth District, the whole number of votes cast was 32,923 of which number

Don Brown (REP)	received	<u>32,804</u> votes
Toreatha J. Hayes-Mitchell (WRI)	received	<u>119</u> votes

For State Representative, Sixth District, the whole number of votes cast was 42,738 of which number

Jimmy Patronis (REP)	received	<u>28,688</u> votes
Janice L. Lucas (DEM)	received	<u>14,049</u> votes
George Mac Brogdon (WRI)	received	<u>1</u> votes

For State Representative, Eleventh District, the whole number of votes cast was 47,250 of which number

David Pope (REP)	received	<u>23,353</u> votes
Debbie Boyd (DEM)	received	<u>23,897</u> votes

For State Representative, Fourteenth District, the whole number of votes cast was 32,648 of which number

Donald R. Foy (REP)	received	<u>10,700</u> votes
Terry L. Fields (DEM)	received	<u>21,948</u> votes

For State Representative, Fifteenth District, the whole number of votes cast was 21,179 of which number

Audrey Gibson (DEM)	received	<u>21,155</u> votes
Cheryl R. Waters (WRI)	received	<u>24</u> votes

For State Representative, Twenty-Second District, the whole number of votes cast was 56,059 of which number

Larry Cretul (REP)	received	<u>31,438</u> votes
Macky Thurman (DEM)	received	<u>24,621</u> votes

For State Representative, Twenty-Third District, the whole number of votes cast was 33,235 of which number

Cain Davis (REP)	received	<u>11,910</u> votes
Charles S. "Chuck" Chestnut IV (DEM)	received	<u>21,325</u> votes

For State Representative, Twenty-Fourth District, the whole number of votes cast was 45,482 of which number

Dennis Baxley (REP)	received	<u>25,593</u> votes
James Walker (DEM)	received	<u>19,889</u> votes

For State Representative, Twenty-Sixth District, the whole number of votes cast was 54,351 of which number

Pat Patterson (REP)	received	<u>30,093</u> votes
Ronald Cahen (DEM)	received	<u>24,258</u> votes

For State Representative, Twenty-Seventh District, the whole number of votes cast was 32,359 of which number

Dave Hood (REP)	received	<u>12,707</u> votes
Joyce Cusack (DEM)	received	<u>19,652</u> votes

For State Representative, Twenty-Eighth District, the whole number of votes cast was 52,204 of which number

Dorothy L. Hukill (REP)	received	<u>29,767</u> votes
William Smalley (DEM)	received	<u>22,437</u> votes

For State Representative, Thirty-First District, the whole number of votes cast was 47,587 of which number

Mitch Needelman (REP)	received	<u>28,486</u> votes
Tim Shipe (DEM)	received	<u>19,101</u> votes

For State Representative, Thirty-Second District, the whole number of votes cast was 39,864 of which number

Bob Allen (REP)	received	<u>39,828</u> votes
Edward Brown (WRI)	received	<u>36</u> votes

For State Representative, Thirty-Third District, the whole number of votes cast was 45,437 of which number

Sandra "Sandy" Adams (REP)	received	<u>28,031</u> votes
Ernie Langdon (DEM)	received	<u>16,170</u> votes
Franklin Perez (NPA)	received	<u>1,236</u> votes

For State Representative, Thirty-Fifth District, the whole number of votes cast was 23,375 of which number

Dean Cannon (REP)	received	<u>23,334</u> votes
David Odom (WRI)	received	<u>41</u> votes

For State Representative, Thirty-Sixth District, the whole number of votes cast was 22,585 of which number

Sheri McInvale (REP)	received	<u>8,798</u> votes
Scott Randolph (DEM)	received	<u>13,787</u> votes

For State Representative, Thirty-Ninth District, the whole number of votes cast was 16,849 of which number

Geraldine F. Thompson (DEM)	received	<u>16,829</u> votes
Earl Olden (WRI)	received	<u>20</u> votes

For State Representative, Fortieth District, the whole number of votes cast was 35,129 of which number

Andy Gardiner (REP)	received	<u>22,103</u> votes
Darren Soto (DEM)	received	<u>13,026</u> votes

For State Representative, Forty-First District, the whole number of votes cast was 48,347 of which number

Steve Precourt (REP)	received	<u>28,077</u> votes
Bill McManus (DEM)	received	<u>20,270</u> votes

For State Representative, Forty-Second District, the whole number of votes cast was 69,960 of which number

Hugh Gibson (REP)	received	<u>40,761</u> votes
Robert Thompson (DEM)	received	<u>29,199</u> votes

For State Representative, Forty-Fourth District, the whole number of votes cast was 53,783 of which number

Robert Schenck (REP)	received	<u>27,401</u> votes
Glenn A. Claytor (DEM)	received	<u>26,382</u> votes

For State Representative, Forty-Fifth District, the whole number of votes cast was 47,234 of which number

Tom Anderson (REP)	received	<u>27,890</u> votes
Chris Hrabovsky (DEM)	received	<u>19,344</u> votes

For State Representative, Forty-Seventh District, the whole number of votes cast was 41,733 of which number

Kevin Ambler (REP)	received	<u>24,837</u> votes
Daniel Suarez (DEM)	received	<u>16,896</u> votes

For State Representative, Forty-Eighth District, the whole number of votes cast was 45,408 of which number

Peter Nehr (REP)	received	<u>23,452</u> votes
Carl "Z" Zimmermann (DEM)	received	<u>21,956</u> votes

For State Representative, Forty-Ninth District, the whole number of votes cast was 24,340 of which number

John "Q" Quinones (REP)	received	<u>13,032</u> votes
Ruth Ann Raia (DEM)	received	<u>11,308</u> votes

For State Representative, Fiftieth District, the whole number of votes cast was 38,663 of which number

Ed Hooper (REP)	received	<u>21,138</u> votes
Candice Jovan (DEM)	received	<u>17,525</u> votes

For State Representative, Fifty-First District, the whole number of votes cast was 43,495 of which number

Dottie Reeder (REP)	received	<u>21,467</u> votes
Janet C. Long (DEM)	received	<u>22,028</u> votes

For State Representative, Fifty-Second District, the whole number of votes cast was 39,747 of which number

Angelo Cappelli (REP)	received	<u>18,277</u> votes
Bill Heller (DEM)	received	<u>21,470</u> votes

For State Representative, Fifty-Third District, the whole number of votes cast was 32,610 of which number

Thomas Piccolo (REP)	received	<u>12,950</u> votes
Rick Kriseman (DEM)	received	<u>19,660</u> votes

For State Representative, Fifty-Fourth District, the whole number of votes cast was 47,104 of which number

James C. "Jim" Frishe (REP)	received	<u>25,048</u> votes
Betsy Valentine (DEM)	received	<u>22,056</u> votes

For State Representative, Fifty-Sixth District, the whole number of votes cast was 43,888 of which number

Trey Traviesa (REP)	received	<u>25,475</u> votes
Lee Nelson (DEM)	received	<u>18,413</u> votes

For State Representative, Fifty-Seventh District, the whole number of votes cast was 42,212 of which number

Faye Culp (REP)	received	<u>23,069</u> votes
Deborah Cope (DEM)	received	<u>17,530</u> votes
Brian Becker (GRE)	received	<u>1,613</u> votes

For State Representative, Fifty-Eighth District, the whole number of votes cast was 23,797 of which number

Alfred Ruiz (REP)	received	<u>7,404</u> votes
Michael Scionti (DEM)	received	<u>16,393</u> votes

For State Representative, Fifty-Ninth District, the whole number of votes cast was 20,100 of which number

Willis "K. C." Bowick (REP)	received	<u>3,293</u> votes
Betty Reed (DEM)	received	<u>16,807</u> votes

For State Representative, Sixtieth District, the whole number of votes cast was 37,517 of which number

Ed Homan (REP)	received	<u>21,260</u> votes
Karen Perez (DEM)	received	<u>16,257</u> votes

For State Representative, Sixty-First District, the whole number of votes cast was 57,654 of which number

Will Weatherford (REP)	received	<u>34,661</u> votes
Donovan Brown (DEM)	received	<u>22,993</u> votes

For State Representative, Sixty-Second District, the whole number of votes cast was 39,844 of which number

Richard Glorioso (REP)	received	<u>26,994</u> votes
Jeremy Zelanis (DEM)	received	<u>12,850</u> votes

For State Representative, Sixty-Third District, the whole number of votes cast was 39,536 of which number

Seth McKeel (REP)	received	<u>23,861</u> votes
James (Jim) Davis (DEM)	received	<u>15,675</u> votes

For State Representative, Sixty-Ninth District, the whole number of votes cast was 46,848 of which number

Laura A. Benson (REP)	received	<u>22,905</u> votes
Keith Fitzgerald (DEM)	received	<u>23,943</u> votes

For State Representative, Seventieth District, the whole number of votes cast was 64,987 of which number

Doug Holder (REP)	received	<u>32,868</u> votes
David Shapiro (DEM)	received	<u>32,119</u> votes

For State Representative, Seventy-First District, the whole number of votes cast was 39,397 of which number

Michael J. Grant (REP)	received	<u>39,385</u> votes
Robert Peter Rice (WRI)	received	<u>12</u> votes

For State Representative, Seventy-Third District, the whole number of votes cast was 34,596 of which number

Nick Thompson (REP)	received	<u>18,324</u> votes
Pete Burkert (DEM)	received	<u>16,272</u> votes

For State Representative, Seventy-Sixth District, the whole number of votes cast was 49,720 of which number

Garrett Richter (REP)	received	<u>38,564</u> votes
Ken MacPherson (CPF)	received	<u>11,156</u> votes

For State Representative, Seventy-Seventh District, the whole number of votes cast was 35,368 of which number

Denise Grimsley (REP)	received	<u>21,288</u> votes
Zane R. Thomas (DEM)	received	<u>14,080</u> votes

For State Representative, Seventy-Ninth District, the whole number of votes cast was 34,609 of which number

Frank C. Attkisson (REP)	received	<u>22,419</u> votes
Beulah Farquharson (DEM)	received	<u>12,190</u> votes

For State Representative, Eighty-First District, the whole number of votes cast was 56,970 of which number

Gayle Harrell (REP)	received	<u>30,907</u> votes
Bill Ramos (DEM)	received	<u>26,063</u> votes

For State Representative, Eighty-Second District, the whole number of votes cast was 50,622 of which number

William D. Snyder (REP)	received	<u>27,362</u> votes
Catherine Hilton (DEM)	received	<u>23,260</u> votes

For State Representative, Eighty-Third District, the whole number of votes cast was 55,999 of which number

Carl J. Domino (REP)	received	<u>28,313</u> votes
Frederick W. "Rick" Ford (DEM)	received	<u>27,686</u> votes

For State Representative, Eighty-Fifth District, the whole number of votes cast was 47,576 of which number

Rob Siedlecki (REP)	received	<u>19,955</u> votes
Shelley Vana (DEM)	received	<u>27,621</u> votes

For State Representative, Eighty-Sixth District, the whole number of votes cast was 37,339 of which number

Maria Sachs (DEM)	received	<u>37,331</u> votes
Kathleen Faherty-Ruby (WRI)	received	<u>8</u> votes

For State Representative, Eighty-Seventh District, the whole number of votes cast was 44,079 of which number

Adam Hasner (REP)	received	<u>24,282</u> votes
Ed Kopf (DEM)	received	<u>19,797</u> votes

For State Representative, Ninety-First District, the whole number of votes cast was 48,314 of which number

Ellyn Bogdanoff (REP)	received	<u>26,455</u> votes
Christian Chiari (DEM)	received	<u>21,859</u> votes

For State Representative, Ninety-Third District, the whole number of votes cast was 24,781 of which number

Perry E. Thurston Jr. (DEM)	received	<u>20,318</u> votes
Nick "James' Dad" Sakhnovsky (NPA)	received	<u>4,462</u> votes
Henry Bonner (WRI)	received	<u>1</u> votes

For State Representative, Ninety-Seventh District, the whole number of votes cast was 41,793 of which number

Susan K. Goldstein (REP)	received	<u>19,646</u> votes
Martin David Kiar (DEM)	received	<u>22,147</u> votes

For State Representative, Ninety-Ninth District, the whole number of votes cast was 29,316 of which number

Juan Selaya (REP)	received	<u>7,455</u> votes
Elaine J. Schwartz (DEM)	received	<u>21,857</u> votes
Andrew J. Housman (WRI)	received	<u>4</u> votes

For State Representative, One Hundred and Second District, the whole number of votes cast was 11,123 of which number

Eddy Gonzalez (REP)	received	<u>11,114</u> votes
Manuel Riera (WRI)	received	<u>9</u> votes

For State Representative, One Hundred and Fourth District, the whole number of votes cast was 18,412 of which number

Yolly Roberson (DEM)	received	<u>18,412</u> votes
Jie Wells (WRI)	received	<u>0</u> votes

For State Representative, One Hundred and Seventh District, the whole number of votes cast was 24,008 of which number

Frank Carollo (REP)	received	<u>11,518</u> votes
Luis Garcia (DEM)	received	<u>12,490</u> votes

For State Representative, One Hundred and Eighth District, the whole number of votes cast was 21,570 of which number

Prospero G. Herrera II (REP)	received	<u>4,033</u> votes
Ronald A. Brisé (DEM)	received	<u>17,537</u> votes

For State Representative, One Hundred and Ninth District, the whole number of votes cast was 17,870 of which number

Dorothy Bendross-Mindingall (DEM)	received	<u>17,867</u> votes
Sarah Ruth Robinett (WRI)	received	<u>3</u> votes

For State Representative, One Hundred and Tenth District, the whole number of votes cast was 14,309 of which number

Rene Garcia (REP)	received	<u>14,306</u> votes
Alex Dueso (WRI)	received	<u>3</u> votes

For State Representative, One Hundred and Eleventh District, the whole number of votes cast was 17,759 of which number

Marco Rubio (REP)	received	<u>17,749</u> votes
Brenda Hernandez (WRI)	received	<u>10</u> votes

For State Representative, One Hundred and Twelfth District, the whole number of votes cast was 18,167 of which number

David M. Rivera (REP)	received	<u>18,141</u> votes
Christina Sanchez (WRI)	received	<u>26</u> votes

For State Representative, One Hundred and Thirteenth District, the whole number of votes cast was 13,078 of which number

Carlos Lopez-Cantera (REP)	received	<u>13,076</u> votes
Nicole Abrante (WRI)	received	<u>2</u> votes

For State Representative, One Hundred and Nineteenth District, the whole number of votes cast was 16,488 of which number

Juan C. Zapata (REP)	received	<u>16,487</u> votes
Roy J. Bustillo (WRI)	received	<u>1</u> votes


For State Representative, One Hundred and Twentieth District, the whole number of votes cast was 33,849 of which number

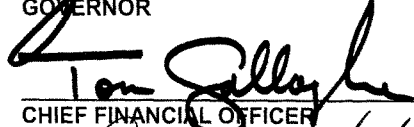
David Rice (REP)	received	<u>14,687</u> votes
Ron Saunders (DEM)	received	<u>19,161</u> votes
Bob (WRI)	received	<u>1</u> votes


1892



IN TESTIMONY WHEREOF, we have hereunto set
our hands and official signatures this
Twentieth day of November, A. D., 2006


GOVERNOR


CHIEF FINANCIAL OFFICER


STATE SENATOR

1893

Tab 12

1894



STATE OF FLORIDA
DEPARTMENT OF STATE

JEB BUSH
Governor

SUE M. COBB
Secretary of State

November 9, 2006

The Honorable Kathy Dent
Sarasota County Supervisor of Elections
101 South Washington Blvd.
Sarasota, FL 34236-6940

Dear Supervisor Dent:

As Division of Elections Director Roberts discussed with you today, pursuant to the Department of State's authority under Sections 101.5607(1)(c) and 101.58(2), Florida Statutes, I am directing members of my staff to conduct an audit of Sarasota County's voting system and attendant procedures with regard to the United States Congressional District 13 race.

The Secretary's Chief of Staff Heidi Hughes and Chief of the Division of Elections Bureau of Voting Systems Certification will be in Sarasota today for discussion and preliminary conversations.

We appreciate your invitation for our staff to observe any recount of this race, should one be ordered, along with you and your staff's full cooperation as we conduct the audit.

At this time it is expected that the members of our audit team will include:

David Drury, Chief of the Bureau of Voting Systems Certification
Danielle Scoggins, Senior Management Analyst
Richard Harvey, Government Operations Consultant
Sharon D. Larson, Deputy General Counsel

Sincerely,

Sue M. Cobb

Sue M. Cobb
Secretary of State

1895



JEB BUSH
Governor

STATE OF FLORIDA
DEPARTMENT OF STATE

SUE M. COBB
Secretary of State

November 11, 2006

The Honorable Kathy Dent
Sarasota County Supervisor of Elections
101 South Washington Blvd.
Sarasota, FL 34236-6940

Dear Supervisor Dent:

We thank you for your continued commitment and cooperation in the process of examining Sarasota County's voting systems and procedures with regard to the United States Congressional District 13 race. Given our level of concern about this race and the number of voters who did not choose a candidate, we are paying very serious attention to the matter. An exacting and thorough audit is mandated and will be executed in an expeditious manner. The Department, working with you and your staff, will look into all possibilities to understand whether the number of undervotes in this race is indicative of an anomaly. Our shared goal is to ensure the integrity and accuracy of voting systems and elections in Florida.

Certain audit activities can be commenced immediately, including manual review of all relevant records and parallel testing to simulate election day conditions using Sarasota County direct recording electronic (DRE) touchscreens prepared for, but not used in, the general election. Based on preliminary discussions between you and Department staff, we have determined to proceed with the audit in the following manner: Florida Division of Elections, Bureau of Voting Systems Certification personnel will conduct an audit of the Sarasota County voting system beginning on November 13, 2006. The audit team, led by Mr. David Drury, Bureau Chief, may be supplemented by additional personnel as the need arises. The structure of this audit will not interfere with the conduct of any recount in the 13th Congressional District.

In addition, the audit team will conduct at least two parallel tests of the iVotronic voting equipment. The first of these tests will utilize at least four of the iVotronic DRE touchscreens that were held in reserve and not deployed on Election Day. The second such test will utilize actual touchscreens used during the election once the recount is complete. Each of these tests will require 14 hours to complete and it is anticipated that the first test will be conducted and completed on Wednesday, November 15, 2006. Each parallel test will utilize the actual ballot images and event logs from the Sarasota County general election as the test script. These items will be extracted from the Election Day audit data of those iVotronic touchscreens identified by

R. A. Gray Building • 500 South Bronough Street • Tallahassee, Florida 32399-0250
Telephone: (850) 245-6500 • Facsimile: (850) 245-6125 • <http://www.dos.state.fl.us>

The Honorable Kathy Dent
November 11, 2006
Page 2

the team based on precinct demographics and the magnitude of undervotes in the 13th Congressional District. Results from the first parallel test should reveal the presence of an anomaly within the touchscreen if such an anomaly is present. The second parallel test is intended to confirm the results of the first parallel test.

The audit plan includes elements that encompass the election process, ballot accounting, tabulator performance, and forensic analysis. The audit will focus on the following areas: the precinct count equipment, the central count (absentee) equipment, the ES&S Unity System (election definition and tabulation), the installed iVotronic firmware and source code, the Sarasota County elections security procedures, event logs, and the logic and accuracy records. The intent of this portion of the audit is to ascertain whether a process error or malicious action influenced the number of undervotes.

Our audit team has extensive expertise. We have enclosed biographical information on the Division of Elections technical staff participating in the audit. Information on further staffing will be forthcoming.

We all agree that the audit and testing procedures are critical steps in determining accuracy of the election and assuring voters that they can be confident in the results.

Sincerely,

Sue M. Cobb

Sue M. Cobb
Secretary of State

Attachment

1897



FLORIDA DEPARTMENT OF STATE

Sue M. Cobb
Secretary of State

Florida Department of State Audit Team
~Sarasota County, November 13, 2006~

David R. Drury is the Bureau Chief of the Bureau of Voting Systems Certification for the Florida Division of Elections. As such, Mr. Drury serves as the team leader in both voting system certifications and auditing. Mr. Drury holds Bachelor degrees in Mechanical Engineering, History and Political Science along with a Masters in Business Administration. Mr. Drury has thirteen years of research, design and development experience with Boeing and GE Aircraft Engines which included computer modeling and an extensive hardware testing background. Mr. Drury earned several "GE Outstanding Achievement Awards" and was nominated for "GE Aircraft Engines Product Quality Award" during 1990 at the Evendale, OH facility. Mr. Drury also acquired experience in the electronics industry while at General Dynamics Tallahassee Operations where he served as a Sr. Industrial Engineer - ISO 9000 Management Representative, and Lead Auditor. During that time, Mr. Drury also served as an adjunct professor at the FAMU - FSU College of Engineering where he taught statistical quality control. Immediately prior to joining state government, Mr. Drury was Director of Quality Assurance for Martin Electronics, Inc. In March 2004, Mr. Drury joined the Bureau of Voting Systems Certification as a Sr. Management Analyst and was promoted to Bureau Chief in December, 2005. Mr. Drury is experienced with process audits, performance audits, and voting system audits.

Danielle Scoggins earned her Bachelor of Science Degree in Management Information Systems from Florida State University's College of Business in 2002. Prior to joining the Bureau of Voting Systems Certification, Ms. Scoggins worked for the Florida Department of Revenue for five years in the SUNTAX program and Internet Service Provider department. During that time Ms. Scoggins gained experience with auditing system reports, establishing user requirements, developing prototypes, testing system integrity, and performing analytical reviews of software requirements and design documents. Additionally, Ms. Scoggins has experience with program planning and evaluation. Ms. Scoggins assumed the Sr. Management Analyst position in March, 2006. Ms. Scoggins' current responsibility is managing the functional test activities during certification events.

Richard Harvey holds a Bachelors degree from Florida State University. Mr. Harvey joined the Division of Elections in 2004 working with voter registration and voter assistance groups. Mr. Harvey was promoted in 2005 and again in 2006 to a Government Operations Consultant position. Mr. Harvey is responsible for reviewing and maintaining voting system acquisition filings, reviewing voting system applications, and researching new technology voting systems. Mr. Harvey has considerable experience with precinct tabulation devices and is considered a

Precinct Equipment Specialist. Mr. Harvey provides technical support to Florida's 67 counties and has conducted training classes on the various precinct voting equipment. Mr. Harvey is a member of the Florida voting system certification test team.

Rosetta Cade has a Bachelors degree in Computer Information Systems with a background in MS Windows 2000 and XP. During her college years, Ms. Cade was involved with software development, network administration and troubleshooting system problems. Upon graduation, Ms. Cade worked for the Florida Department of Management Services and worked as a computer system specialist at the Florida Department of Health. In that position, Ms. Cade was responsible for configuring new and existing systems and maintaining the test database. Ms. Cade joined the Bureau of Voting Systems Certification in May 2006 and is a member of the voting system certification test team. Ms. Cade's primary responsibility is focused on the election management system software.

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Tab 13

**IN THE CIRCUIT COURT OF THE TWELFTH JUDICIAL
CIRCUIT OF FLORIDA, IN AND FOR SARASOTA COUNTY**

CIVIL DIVISION

CASE NO.

**CHRISTINE JENNINGS, Democratic
Candidate for United States House of
Representatives, Florida Congressional
District 13,**

Plaintiff,

vs.

**HON. KATHY DENT, Sarasota
County Supervisor of Elections,
Defendant.**

**EMERGENCY PETITION FOR INJUNCTIVE RELIEF TO
SECURE/SEGREGATE ELECTRONIC VOTING SYSTEM
MACHINES AND DATA TO PROTECT SANCTITY OF
EVIDENCE PENDING ELECTION CERTIFICATION AND
ALLOWABLE LEGAL CHALLENGES; REQUEST FOR
EXPEDITED CONSIDERATION; SUPPORTING
MEMORANDUM OF LAW**

I. INTRODUCTION.

1. Plaintiff Christine Jennings, the Democratic Candidate for United States House of Representatives, Florida Congressional District 13, asks this court to issue an expedited injunction to protect and prevent any

tampering with, alteration of, or destruction of, all vital and pertinent voting machinery and data utilized in Sarasota County during the November 7, 2006 general election (including the early voting process). This action is needed to safeguard all voting systems, instruments, and data including software and firmware, so as to facilitate the correct and orderly canvassing of voting returns; to ensure an accurate recount of every intended vote that was cast; and to accurately record, preserve and safeguard every intended vote that was cast as required by Florida law; as well as the preservation of evidence pending the outcome of any election contest that follows certification of the vote totals.

2. This complaint proceeds in accordance with principles of due process, fundamental fairness, equal protection, the Florida Election Code, the Help America Vote Act ("HAVA"), and the Voting Rights Act. The pervasive problems manifest in the Sarasota County voting mechanisms for Congressional District 13 can only be remedied through judicial protection in order to secure the safety and efficacy of the vote. The conduct of the Sarasota County elections department throughout this general election raises serious questions about its ability to accurately record, preserve and safeguard every intended vote that was cast, and

causes grave concerns for the preservation of all indicia of the vote. The recent announcement by the Florida Secretary of State to conduct an audit of Sarasota County's voting system and attendant procedures follows from the significant and alarming aberrations in undervotes in the voting totals for Congressional District 13, in Sarasota County. Expedited relief is required due to the impending voting canvass, the limited time allowed for a manual recount, and the deadline for filing an election contest. Without expedited relief, the safeguarding and counting of all ballots cast, to determine the intentions of the voters, is in significant jeopardy, thereby infringing on the right of Florida citizens within Florida Congressional District 13 to have all intended votes accurately counted.

II. PARTIES.

3. Christine Jennings is the Democratic Party candidate for the United States House of Representatives, Florida Congressional District 13, appearing on the November 7, 2006 ballot in Sarasota County.
4. Kathy Dent is the Sarasota County Supervisor of Elections, charged with the responsibility of conducting elections in Sarasota County. See § 98.015, Fla. Stat. (2006).

III. RELEVANT FACTS.

5. On November 7, 2006, the Sarasota County Supervisor of Elections conducted a general election.
6. Sarasota County uses an electronic voting machine system for all Election Day and early voting. This voting system is manufactured by Electronic Systems & Software of Omaha.
7. Absentee ballots utilized in Sarasota County are in the form of optical scan paper ballots.
8. Among the elective offices appearing on the November 7, 2006 general election ballot (including the early voting period) was the election for U.S. Representative in Congress, 13th Congressional District. On that ballot item, Christine Jennings was the Democratic Party Candidate, while Vern Buchanan was the Republican Party Candidate.

A. Significant Undervotes Reported in Sarasota County.

9. The total unofficial general election results for Congressional District 13 in Sarasota County recorded 65,367 votes (52.76%) for Christine Jennings, and 58,534 votes (47.24%) for Vern Buchanan. Additionally, there were a total of 18,382 "undervotes" reported in that race in Sarasota County. (§97.021(37) Fla. Stat. states: "Undervote" means that

the elector does not properly designate any choice for an office or ballot question, and the tabulator records no vote for the office or question.) Therefore, out of a total of 142,284 ballots cast in that race, in Sarasota County, there was a 12.92% rate of undervotes, which is a statistical aberration.

B. Machine Undervotes Are Significantly Greater.

10. Of the votes cast in this race on Election Day in Sarasota County, on the electronic voting machines, there were a total of 88,927 ballots cast. Christine Jennings received 39,930 votes, and Vern Buchanan received 36,619 votes. However on Election Day, in this race, in Sarasota County there were 12,378 undervotes. Therefore, the total undervote rate in Sarasota County in this race on Election Day, on the electronic voting machines, represents 13.92% of the ballots cast, which is a statistical aberration.

11. In the early voting process, in Sarasota County, on the electronic voting machines, in this race, there were a total of 30,832 ballots cast. Christine Jennings received 14,509 votes, and Vern Buchanan received 10,890 votes. However in the early voting process, in this race, in Sarasota County, there were 5,433 undervotes. Therefore the undervote

rate for the early voting on the electronic voting machines in Sarasota County represents 17.62% of the total ballots cast, which is a statistical aberration.

12. By combining the total electronic voting machine totals, in this race, in Sarasota County, both early voting and on Election Day, 14.87% of the total ballots cast, more than 1 out of every 7, were undervotes, which constitutes a significant statistical aberration.

13. In this race, in Sarasota County, there were a total of 22,525 absentee ballots cast. Christine Jennings received 10,928 votes, and Vern Buchanan received 11,025 votes. There were only 571 undervotes in those absentee ballots, for this race, which equals 2.53% of such absentee ballots cast, and does not constitute a statistical aberration.

14. The total undervote rate for the 13th Congressional District in all other counties is only 2.52% the total ballots cast in those counties, in this race, and such an undervote rate is not a statistical aberration.

15. According to the unofficial election results for the entire 13th Congressional District, Christine Jennings is behind by less than 380 votes, representing less than one-quarter of one percent of the total votes cast and counted. The 17,811 undervotes recorded on the electronic voting

machines, for the 13th Congressional District in Sarasota County alone are more than sufficient to change or place in doubt the result of the election, thus warranting sufficient grounds for an election contest if the election results are certified. Even more significant is that the number of undervotes in the Congressional 13th District race (18,382) dwarfs the undervotes in every other partisan, contested race on the ballot in Sarasota County:

RACE	UNDERVOTES	BALLOTS CAST	% Undervote
US Senator	1,617	142,284	1.14%
Governor	1,821	142,284	1.28%
Attorney General	6,203	142,284	4.36%
CFO	6,299	142,284	4.43%
Agriculture Commissioner	7,371	142,284	5.18%
State Rep 69	1,173	45,086	2.60%
State Rep 70	1,971	66,885	2.95%
TOTALS	26,455	82,3391	3.21%

16. The undervotes reported in Congressional District 13 arose, at least in significant part, from electronic voting system and machine irregularities, breakdowns, and inadequate maintenance, resulting in votes that were cast but were not counted for that race.

C. Manual Recount Is Required By Statute.

17. According to § 102.166(1), Florida Statutes (2006), a *manual recount* is required by law whenever the unofficial returns indicate "a candidate for any office was defeated or eliminated by one-quarter of a percent or less of the votes cast for such office, ... [and] the board responsible for certifying the results of the vote on such race or measure shall order a manual recount of the overvotes and undervotes cast in the entire geographic jurisdiction of such office or ballot measure. A manual recount may not be ordered, however, if the number of overvotes, undervotes, and provisional ballots is fewer than the number of votes needed to change the outcome of the election."

18. In the case of Congressional District 13, the difference between the two candidates' vote totals is less than 1/4 of one percent, and the number of undervotes in Sarasota County alone is more than sufficient to change the outcome of the election. Consequently, a manual recount is required in this case.

19. A manual recount can only be effective if all voting machines, voting systems, ballots, and data, including software and firmware used for the 13th Congressional District election are preserved in the identical state immediately following the closing of the polls. Any manipulation of the

machines, systems, or the ballots could alter the integrity of the vote and the subsequent recount.

**D. An Election Contest Is The Remedy For
Rejection Of Legal Votes.**

20. In accordance with § 102.168, Florida Statutes (2006), the outcome of an election "may be contested in the circuit court by any unsuccessful candidate for such office or nomination thereto" by filing a complaint within ten days after a certification of the election results. A basis for an election contest is the rejection of a number of legal votes sufficient to change or place in doubt the outcome of the election. § 102.168(3)(c), Fla. Stat. (2006).

21. The Sarasota County undervotes represent legal votes cast that should have been counted.

22. Voters in Sarasota County were required to utilize electronic voting machines. That because the machines and related systems and software or firmware were faulty and defective, they did not count all valid votes for the 13th Congressional District or failed to include the 13th Congressional District votes cast for Jennings on the summary screen.

E. Preserving Evidence Is Essential To Counting Votes.

23. Securing the voting machines, instruments and data including software and firmware, is essential to preserve ballots for the manual recount, and to enable forensic evaluation of the election process for any subsequent election contest. Florida law advances a policy of preservation of ballots in order to promote the sanctity of elections. See *State ex rel. Peacock v. Latham*, 125 Fla. 779, 170 So. 469, 472 (1936). Because the "ballots cast in an election are the primary and best evidence of the voters' will as expressed therein," the integrity of the ballots must be maintained for preservation of the votes. See *Burke v. Beasley*, 75 So. 2d 7, 9 (Fla. 1954). The preservation of ballots extends to ballot boxes and the contents thereof. *State ex rel. Miller v. Carmichael*, 144 Fla. 319, 197 So. 857 (1940).

24. The electronic voting machines, instruments and data including software and firmware, used in Sarasota County are responsible for the aberrant undervoting and are therefore necessary components of the vote, thus mandating the protection, sequestration, and preservation of the electronic voting machines, instruments and data including software and firmware, pending the outcome of the statutory recount and any contest action. As the Florida Supreme Court acknowledged in *Gore v. Harris*, 772

So. 2d 1243, 1253-1254 (Fla. 2000)¹, the presence of a significant undervote, reflected by ballots for which no vote was registered by the electronic counting mechanism, may well have resulted in the rejection of a number of legal votes sufficient to change or place in doubt the outcome of an election, one of the statutory grounds for an election contest. In the present situation, a contest action, if pursued by either candidate, will seek to examine and count all undervotes cast in the Congressional District 13 election, including those in Sarasota County.

IV. LEGAL AUTHORITY.

25. Courts have the authority to order the preservation of relevant evidence even prior to the filing of an action, once a defendant reasonably anticipates an action may be forthcoming. See *Silvestri v. General Motors*, 271 F.3d 583, 590 (4th Cir. 2001); *Kronisch v. United States*, 150 F.3d 112, 126 (2nd Cir. 1998); see also *Beck v. Haik*, 377 F.3d 624, 641 (6th Cir. 2004). In the remarkably relevant case of *King Lincoln Bronzeville*

¹ The United States Supreme Court reversed the Florida Supreme Court's order directing a manual recount of a portion of the undervotes in *Bush v. Gore*, 531 U.S. 98, 121 S. Ct. 525 (2000). Plaintiff will seek a recount of all undervotes, but only the Sarasota County electronic voting machines are in need of preservation because of their likely manipulation or corruption, in view of the statistically significant

Neighborhood Association v. Blackwell, 448 F. Supp.2d 876, 2006 WL 2591393 (S.D. Ohio 2006), District Judge Marbley held the court had the inherent power to issue an order directing the preservation of election ballots in order to preserve the subject matter of an election law suit.

26. Plaintiff is entitled to the full protection of Florida's election code, including the ability to count all votes (including undervotes) and contest the outcome of an election in which the rejection of a sufficient number of legal votes occurred to change or place in doubt the election outcome. Principles of due process and fundamental fairness mandate the preservation of all evidence needed to prove that legal votes were rejected. In the case of electronic voting systems, preserving the electronic voting apparatus is essential to a determination of whether all valid votes were counted. Constitutional principles of equal protection mandate that each valid vote cast by every elector be counted. The federal Help America Vote Act, intended to preserve the integrity of every vote, supports plaintiff's efforts to preserve all evidence needed to insure that every vote is counted.

V. NEED FOR EXPEDITED CONSIDERATION.

27. As the court held in *Adams v. Canvassing Board of Broward*

undervotes.

County, 421 So. 2d 34, 35 (Fla. 4th DCA 1982), “[p]art of the purpose of the protest and contest provisions of the election code is to effect a speedy resolution of such conflicts, with minimal disruption of the electoral process.” This court thus has the obligation to expedite this matter to insure the prompt preservation of evidence for ultimate adjudication.

VI. GROUNDS FOR INJUNCTIVE RELIEF SATISFIED.

28. As required by Rule 1.610 of the Florida Rules of Civil Procedure, this injunctive request is needed to avoid the irreparable harm that will occur if the electronic voting systems are not sequestered and secured, thus making unavailable the evidence needed for a recount and contest. Plaintiff has no adequate remedy at law, as the preservation of the electronic voting systems, instruments, and data including software and firmware is essential to the ability to mount a meaningful manual recount and a statutory contest. Plaintiff has a sufficient likelihood of success on the merits, in view of the narrow margin between the two candidates (less than 380 votes) and the statistically significant number of unexplained undervotes. The compelling need of the public for an immediate preservation of all evidence in order to preserve the sanctity of a complete count of all eligible votes favors the grant of injunctive relief.

VII. CONCLUSION.

29. For the reasons set forth, the plaintiff asks this court to direct the immediate sequestering and preservation of the electronic voting machines, voting cartridges, electronic voting systems, instruments, and data including software and firmware used in Sarasota County in the election for Congressional District 13.

VIII. VERIFICATION.

Under penalties of perjury, we the undersigned declare that we have read the foregoing petition and that the facts stated in it are true to the best of our information and belief.

Respectfully submitted,

COFFEY & WRIGHT, LLP
2665 South Bayshore Dr.
PH-2, Grand Bay Plaza
Miami, FL 33133
Telephone: 305.857.9797
Fax: 305.859.9919

By: _____

KENDALL COFFEY
Florida Bar No. 259861

SALE & KUEHNE, P.A.
Bank of America Tower, Suite 3550
100 S.E. 2nd St.
Miami, FL 33131-2154
Telephone: 305.789.5989
Fax: 305.789.5987
Email: ben.kuehne@sk-lawyers.com

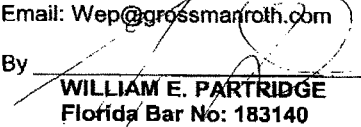
By: _____
BENEDICT P. KUEHNE
Florida Bar No. 233293

LIGGIO BENRUBI & WILLIAMS
1615 Forum Place
Suite 3B
West Palm Beach, FL 33401
Telephone: 561.616.3333
Fax: 561.616.3266
Email: Jliggio@liggiolaw.com

By: 

JEFFREY M. LIGGIO
Florida Bar No.: 357741

GROSSMAN ROTH AND PARTRIDGE
Attorneys for Plaintiff
SouthTrust Bank Building
1800 Second Street, Suite 777
Sarasota, Florida 34236
Telephone: 941.365.8666
Fax: 941.316.0963
Email: Wep@grossmanroth.com

By: 

WILLIAM E. PARTRIDGE
Florida Bar No: 183140

1915

Tab 14

COPY

1 IN THE CIRCUIT COURT OF THE TWELFTH JUDICIAL CIRCUIT
2 IN AND FOR SARASOTA COUNTY

3 CHRISTINE JENNINGS, Democratic
4 Candidate for United States House
5 of Representatives, Florida
6 Congressional District 13,

7 Plaintiff,

Case No.
2006 CA 010848 NC

8 vs.

9 HON. KATHY DENT, Sarasota County
10 Supervisor of Elections,

11 Defendant.

12 TRANSCRIPT OF HEARING

13
14 BEFORE: HONORABLE DENO G. ECONOMOU, CIRCUIT JUDGE

15
16 DATE TAKEN: November 14, 2006

17 TIME: 12:09 p.m. - 12:41 p.m.

18 PLACE: Sarasota County Judicial
19 Center
20 2002 Ringling Boulevard
21 Sarasota, Florida

22
23 Stenographically Reported by:
24 Donna L. Peterson
25 Registered Diplomate Reporter
Certified Realtime Reporter

1 APPEARANCES:

2

3 Counsel for Plaintiff:

4 JEFFREY M. LIGGIO, ESQUIRE
5 Liggio, Benrubi & Williams
6 Barristers Building, Suite 3-B
7 1615 Forum Place
8 West Palm Beach, Florida 33401

9 Co-Counsel for Plaintiff:

10 WILLIAM E. PARTRIDGE, ESQUIRE
11 Grossman, Roth & Partridge
12 1800 2nd Street, Suite 777
13 Sarasota, Florida 34236

14 Counsel for Defendant:

15 RONALD A. LABASKY, ESQUIRE
16 Young Van Assenderp, P.A.
17 Gallie's Hall
18 225 South Adams Street, Suite 200
19 Tallahassee, Florida 32302

20 Counsel for Intervenor Vern Buchanan:

21 HAYDEN R. DEMPSEY, ESQUIRE
22 Greenberg Traurig, P.A.
23 101 East College Avenue
24 Tallahassee, Florida 32301

25 Counsel for Florida Secretary of State:

MORGAN R. BENTLEY, ESQUIRE
Williams, Parker, Harrison, Dietz & Getzen
200 South Orange Avenue
Sarasota, Florida 34236

1 PROCEEDINGS

2 THE COURT: Good morning, everyone. Thank you.
3 You may be seated.

4 Everyone get here on short notice.

5 MR. LIGGIO: Yes, Your Honor.

6 MR. DEMPSEY: Thank you.

7 THE COURT: Everybody notified, everybody, all
8 of the parties?

9 MR. LIGGIO: Yes, Your Honor.

10 THE COURT: Okay. Including Supervisor of
11 Elections.

12 MR. LABASKY: Yes, Your Honor.

13 MR. LIGGIO: Yes, Your Honor.

14 MR. DEMPSEY: Yes, Your Honor.

15 THE COURT: Why don't we do this. Why don't
16 you, for the record, identify yourselves so we will
17 have everyone present.

18 MR. LIGGIO: Your Honor, for the petitioner,
19 here with co-counsel William Partridge. And my name
20 is Jeffrey Liggio.

21 THE COURT: All right, sir. Thank you.

22 MR. LABASKY: Your Honor, on behalf of the
23 defendant, Kathy Dent, Supervisor of Elections, I am
24 Ron Labasky.

25 THE COURT: Thank you, sir.

1 MR. DEMPSEY: Your Honor, my name is
2 Hayden Dempsey. I am here on behalf of
3 Vern Buchanan.

4 We filed a motion to intervene, and it is my
5 understanding the plaintiffs have no objection to
6 our intervention.

7 THE COURT: Okay. Thank you. That was the
8 first thing. No objection by any of the parties?

9 MR. LIGGIO: None whatsoever.

10 THE COURT: Good. I was going to grant it
11 anyway. Okay.

12 MR. DEMPSEY: Thank you, sir.

13 THE COURT: Sure. Motion granted.

14 All right. What brings us here?

15 MR. LIGGIO: Your Honor, would you prefer me to
16 speak from the podium or --

17 THE COURT: Whatever is easier for you. If you
18 have got a lot of papers that you have at the table,
19 you can stand there, sir.

20 MR. LIGGIO: Your Honor, we are here after a
21 very unusual situation, unless the Court has any
22 questions as to how we arrived with the situation
23 the election.

24 There are recounts that are ongoing as we
25 speak. The various supervisors of elections in the

1 affected counties have been working diligently with
2 the canvassing teams on the provisional ballots.
3 And the machine recount is occurring. The manual
4 recount is scheduled to take place. Nothing we are
5 doing here is meant to slow down or to stop those
6 statutorily mandated recounts. There, of course,
7 are statutory time frames.

8 If at the end of the recounts there is -- there
9 is, on either party, an intention or a need to file
10 an election contest, that also has a rigid statutory
11 time frame of 10 days after the certification of the
12 election. I believe as we looked at it that the
13 certification pending the recounts should take place
14 Sunday or Monday of this coming week, so there is a
15 10-day window at that time.

16 We felt it was important to come to see you
17 because something unusual outside of the normal
18 recounts is taking place. As you know, Secretary of
19 State Cobb is sending or has sent an audit team
20 here. They are doing some audits or they are going
21 to do audits, and I am not sure whether they have
22 begun already or they are going to, including
23 something called parallel election testing.

24 If I can approach.

25 THE COURT: Yes, sir.

1 MR. LIGGIO: I made -- I made copies of a
2 couple of generic charts for you to see, just to
3 help familiarize you, Your Honor, with the way these
4 elections systems work. And the reason we did this
5 is that we tend to think of the user interface,
6 which is the machine that the voters vote at, as the
7 system. And sometimes we have been imprecise in our
8 marriage -- in our language. And I would never
9 criticize the press, but sometimes they are a little
10 bit imprecise.

11 As you can see from these flowcharts, this is a
12 rather complicated system. The manual, and the
13 machine and manual recount, doesn't look at a number
14 of the aspects of the system.

15 So when this situation arose, we contacted an
16 expert from Rice University, Professor Wallach. As
17 you know, we filed an affidavit from Professor
18 Wallach. Attached to that was a list of things that
19 in a good forensic investigation we feel that we
20 would like to see and have access to.

21 This is not any different than any other
22 spoliation of evidence sort of motion where we want
23 to protect and preserve evidence. We have no reason
24 to believe that Ms. Dent's office would do anything
25 to tamper with evidence, and we are not suggesting

1 that. But we want to make sure, in an abundance of
2 caution, we do have some Court scrutiny.

3 Now, before we came in here today, we have
4 litigated -- Mr. Labasky and I have litigated
5 against each other for years. He wins a lot of
6 them, and I win one once in a while. And we have
7 also spoken to --

8 THE COURT: Is that all right, Mr. Labasky?

9 MR. LABASKY: I agree with that, Your Honor.

10 MR. LIGGIO: That characterization.

11 THE COURT: We had to put that on the record.

12 MR. LIGGIO: Judge, we are never lawyers that
13 think we win everything. Those are the wrong kind
14 of lawyers.

15 We have also spoken with Mr. Dempsey. And I
16 know here with us, just monitoring today, but not
17 appearing yet, is Mr. Bentley on behalf of
18 Ms. Cobb's office.

19 What we suggest is, as far as what relief we
20 would ask the Court is as follows: No. 1, an order
21 making sure just with Court scrutiny that the
22 various aspects of this rather complicated voting
23 system be maintained and preserved and protected so
24 that there can be a forensic examination. It is
25 vitally important because if in fact there would be

1 an election contest, because it's a machine-driven
2 voting system, a software computer-driven system,
3 that forensic examination is going to be vitally
4 important under the provisions of Florida Statute
5 102.168.

6 We spoke in the hallway and we suggested -- and
7 I think we are on the way to an accord. We all
8 want, all of us, for all the parties, we want a good
9 and comprehensive forensic audit and parallel
10 election. We have got -- bringing in independent
11 experts. I know the other parties are.

12 What I would ask you to do as the rest of the
13 relief -- and I think we've got -- we don't have --
14 we don't have approval from the clients yet. Give
15 us 24 or 48 hours. And of course the reason I
16 suggest that time frame is because of that window
17 for a contest if it's going to happen.

18 Give us 24 to 48 hours to come back and visit
19 with you. And we are going to try to agree that
20 we -- we have asked that our experts and any experts
21 that the Buchanan campaign has, any experts that
22 Secretary Cobb have, they all get together and
23 participate in the audit and the parallel election
24 together. So we come out with a good, comprehensive
25 product, so that the voters of Sarasota County know

1 that we are all looking to get to the bottom of what
2 happened without any partisan rancor and without any
3 shading of things.

4 Each of the lawyers -- and if I say it wrong,
5 fellas, just tell me. I think we each have to go
6 back and chat with our clients. But I think we are
7 in agreement that if you would give us 24 or 48
8 hours to come back and report to you, as to the
9 status of our stipulation about our participating
10 together, I think we are going to go a long way
11 towards getting this thing done and getting it
12 moving.

13 So again, we would ask for the protective order
14 to make sure we have Court scrutiny. And give us
15 some time to stipulate together that maybe we can
16 develop a process together in a fair and open
17 fashion for the voters.

18 THE COURT: All right. So let me ask you. You
19 had mentioned you are seeking an order to make sure
20 some aspects -- I'm trying to read my handwriting
21 but I can't because I wrote too fast -- making sure
22 some aspects or all aspects for the voting system be
23 maintained and preserved and protected.

24 Are there specific -- what do you mean by
25 aspects, is my question.

1 MR. LIGGIO: This is what we said in the
2 petition and we have parroted in what we are going
3 to suggest as an order; that the respondent,
4 Ms. Dent's office, shall take immediate steps to
5 sequester and preserve -- and I know they have
6 already sequestered and preserved the voting
7 apparatus, the electronic voting machine --

8 THE COURT: I'm sorry. Someone coughed. I
9 didn't hear that. Say that again.

10 MR. LIGGIO: They have already got --

11 THE COURT: Sequestered and preserved what? I
12 didn't hear you.

13 MR. LIGGIO: The electronic voting machines.
14 Pardon me, voting cartridges. On those charts,
15 those are called PEBs. The electronic voting
16 systems. And as you can see from the chart, there
17 is a number of computer systems and software
18 packages involved. And data including the software
19 and firmware used in Sarasota County in the election
20 for Congressional District 13.

21 And that does not slow down or stop either the
22 machine recount or the manual recount in any way.

23 THE COURT: All right, sir. And secondly,
24 since you are seeking injunctive relief, for what
25 period of time are you seeking said injunctive

1 relief?

2 MR. LIGGIO: Judge, I would suggest that it be
3 for at least that 10-day period after the
4 certification of the election, in which the parties
5 have an opportunity to decide if they are going to
6 conduct an election contest.

7 So if we assume the election will be certified,
8 let's say this coming Monday. For an additional
9 10 days. And I do believe that the parties, all of
10 us, are going to be able to agree on a -- I hope I
11 am not speaking out of school -- agree to an agreed
12 audit and parallel testing protocol in that time.

13 THE COURT: All right, sir. Thank you.

14 Mr. Labasky or Mr. Dempsey, who wishes to go?

15 MR. LABASKY: I think I will got first, Your
16 Honor.

17 THE COURT: Mr. Dempsey.

18 MR. LABASKY: Provided we have an
19 understanding -- and I understand the plaintiff's
20 presentation to you. The issue of their
21 participation in the audit, the State of Florida,
22 the Department of State is going to pursue and which
23 has been requested by the Supervisor of Elections,
24 that's really not very much our issue.

25 There are several statutes, and one in 98.015

1 and one in 101.34, that provide that the Supervisor
2 of Elections is to maintain the voting equipment and
3 the voting records and not -- and to ensure that
4 nothing improper occurs with those.

5 And I think Mr. Liggiro has already indicated
6 that really is not the principal concern here. Just
7 to advise you where we are -- and I think you had a
8 question.

9 THE COURT: Go ahead.

10 MR. LABASKY: We are in the process now and
11 will -- and expect to complete the State-directed --

12 The election canvassing commission has on
13 Monday directed that the counties involved in this
14 congressional district begin a machine recount. And
15 that's running the paper ballots, the absentee
16 ballots back through the equipment, and checking all
17 the vote tallies in the electronic voting equipment.
18 We will be finished with that this afternoon, and we
19 are then required to certify those results to the
20 election canvassing commission in Tallahassee by
21 noon on Wednesday. It is anticipated --

22 THE COURT: Wednesday of?

23 MR. LABASKY: Tomorrow.

24 THE COURT: Tomorrow?

25 MR. LABASKY: Yes, sir.

1 THE COURT: Okay.

2 MR. LABASKY: Then I think everyone
3 anticipates, absent something very unusual
4 occurring, that we will still be within one-quarter
5 of one percent on the vote separation of these
6 candidates, and we will go into the manual recount.
7 Again, as I understand the plaintiffs, they want
8 that to proceed and for us to use the equipment as
9 appropriate and necessary for us to complete that
10 task, which we must complete by Saturday at noon,
11 Saturday at noon when we will again certify those
12 final manual recount totals. And that will be the
13 completion of the Sarasota County canvassing board's
14 duties with respect to the vote tally in Sarasota,
15 along with the other adjoining counties that
16 participate in this congressional district.

17 The issue as I see it, Your Honor, is the
18 plaintiffs getting in accord with the Department of
19 State, who is doing something separate and apart
20 from the canvassing board at this point in
21 undertaking their audit.

22 We from through the Supervisor's office, in
23 conjunction with the approval of the canvassing
24 board, have agreed to provide the information
25 necessary, none of the original documents, only

1 copies of documents, so that they can begin
2 preparation.

3 We -- I don't believe -- I have to talk to my
4 client, of course. But I don't believe there would
5 be any reason for us to raise an objection of a
6 participation with the Department of State, and that
7 really is something that I think the plaintiffs need
8 to work out with the Department of State so it fits
9 into their efforts in undertaking this audit that
10 they will do.

11 The only concern I would have, Your Honor, is
12 that there is a clear understanding that when and if
13 the language is used of sequestering/maintaining,
14 it's not in opposition to what we must do in order
15 to complete the machine recount and the manual
16 recount by Saturday and get all of those votes in.
17 And that whatever order we have, if it goes in this
18 direction, that the equipment is not tied up for
19 some abnormal period of time. We can print records
20 but the way -- based upon the fact that people are
21 still asking for ballots from the 2000 election, I
22 would hate to have this voting equipment sitting in
23 a warehouse locked up for the next whatever period
24 of time, although apparently it's going to be that
25 way anyway so -- very soon.

1 So, Your Honor, from our position, as long as
2 we can continue to do our task at the canvassing
3 board level, the Supervisor level, and complete the
4 recounts that in all likelihood -- well, one
5 is done -- one is going to be done, one will follow
6 up, in likelihood be undertaken. We are -- I think
7 we are going to be fine. And we will provide the
8 data, because we have already agreed, I think, to
9 provide what is necessary for the audit. And they
10 want to participate in the audit, and it's really
11 the Department of State, I think, that has to be
12 interfaced with at this point.

13 THE COURT: All right, sir. I appreciate that.
14 Thank you.

15 Mr. Dempsey.

16 MR. DEMPSEY: Thank you, Your Honor. I would
17 like to repeat what Mr. Labasky said. We, to a
18 large extent, we would agree with that.
19 Representative -- excuse me, Congressman-Elect
20 Buchanan would.

21 It seems like the issue really is whether or
22 not the State goes forward with this parallel
23 testing tomorrow and whether or not, you know, the
24 parties are allowed to. And it's my understanding
25 from Mr. Liggio's argument that basically, to sum it

1 up, that they object to the State going forward with
2 this parallel testing tomorrow, that they want to
3 preserve these machines for some time after
4 tomorrow.

5 We don't necessarily have a position on that
6 issue other than, you know, we agree, I think we are
7 all in agreement here that we don't want anything to
8 happen between now and Monday when certification has
9 to occur to stop that process, the manual recount.

10 So I think to the extent that, as Mr. Labasky
11 said, that the plaintiffs would like to get with the
12 Secretary of State's office to talk about what the
13 testing is going to encompass, just like any other
14 scientific case, and that both parties are afforded
15 an opportunity to know what that is and to
16 participate, I don't know that we have an objection.
17 I guess I almost wish that the Secretary of State's
18 office was here to better explain for Your Honor
19 what it is they propose to do. Because I almost
20 feel like there is a bit of incomplete information
21 in large regard.

22 But anything to, you know, assure this Court
23 that, you know, this was a fair election, you know,
24 both for the process that's ongoing and later in the
25 contest which may or may not be filed, we would not

1 object to it.

2 MR. LIGGIO: Thank you.

3 THE COURT: All right. I -- yes, sir.

4 MR. LIGGIO: Maybe -- and I had forgotten that
5 the parallel testing was scheduled for tomorrow. We
6 would prefer, give us some time, and I think we are
7 all going to be able to work this out. I honestly
8 do.

9 THE COURT: All right.

10 MR. LIGGIO: But before anything outside of the
11 recounts. The recounts must go forward in
12 accordance with the statute, and there is no
13 opposition by anybody to that. Audits and parallel
14 testing are the things we are concerned about.

15 And I would ask Your Honor to -- I don't know
16 if we need, but in an abundance of caution maybe we
17 need a 24- or 48-hour injunction or stay for that to
18 see if we all can get on one page on that.

19 THE COURT: All right. My only concern that I
20 have, truly, is I think someone from the Secretary
21 of State, a representative should be here, and that
22 is why I am a little reluctant.

23 And Mr. Bentley is standing.

24 MR. BENTLEY: You asked. You --

25 THE COURT: Kind of like Perry Mason where

1 someone from the back of the courtroom comes forward
2 and confesses.

3 MR. BENTLEY: That's right. I'm sorry.

4 THE COURT: Mr. Bentley, maybe you have the
5 answer to all this.

6 MR. BENTLEY: I wish I did.

7 THE COURT: That is a question. Obviously we
8 need some input from their -- they have a vested
9 interest in this.

10 MR. BENTLEY: Morgan Bentley on behalf of the
11 Secretary of State.

12 THE COURT: All right, sir.

13 MR. BENTLEY: The problem here really is a
14 procedural one. We don't know what it is they want
15 to do in the participation. I don't know actually
16 whether this court at the -- well, certainly at the
17 moment the Court doesn't have jurisdiction over the
18 Secretary of State to order an injunction that we
19 can't do a parallel audit.

20 The thing the Court has got to keep in mind --
21 I think Mr. Liggio made this clear but it's worth
22 repeating -- is the audit has nothing to do with the
23 recount per se. The recount kind of -- it has its
24 own life. And the challenge to that has its own
25 life. And there is even some question, as I

1 understand it, as to this is a federal election so I
2 think the federal rules are going to control. But
3 that is not my -- not my fight.

4 Our issue is we have been requested by a
5 constitutional officer to perform an audit pursuant
6 to certain statutes. I don't -- since I don't know
7 what it is they are asking to participate in, I
8 can't say we are against it per se. But I just
9 don't think an order at this point is appropriate
10 for two reasons. One is they are not a party; and
11 No. 2 is it's a statutory procedure. It is what it
12 is. And unless there is some reason --

13 THE COURT: Okay. I don't think that I have
14 the authority at this point to make that -- that
15 leap at this point. I may down the road. And
16 obviously I am amenable. We can do emergency
17 hearings any time, as was proved this morning.

18 MR. BENTLEY: Absolutely.

19 THE COURT: It sounds to me like we are truly
20 on the same page, though, and I agree. I think we
21 are all on the same page. I think we are all after
22 the truth, whatever it is.

23 MR. LIGGIO: Sure.

24 THE COURT: So I don't think that is an issue.
25 So what I am -- I'm sorry. Go ahead.

1 MR. BENTLEY: Procedurally speaking, you are on
2 the trial docket this week as I understand it so --

3 THE COURT: Yes, sir. I have got trials.

4 MR. BENTLEY: -- this middle of the day is
5 going to be good if --

6 THE COURT: Probably my lunch hour is going to
7 be your lunch hour.

8 MR. BENTLEY: Okay.

9 THE COURT: That's probably -- so don't go too
10 far from the -- don't be taking lunch somewhere in
11 Naples or somewhere else or Tampa.

12 MR. BENTLEY: Perfect.

13 THE COURT: But that's probably the best for
14 me, too, for emergency.

15 MR. LIGGIO: Maybe in an abundance of
16 caution -- I know we are going to be talking. We'll
17 do an amended petition, emergency petition to make
18 sure that everybody is in. And -- but I am hoping
19 we won't have to come before you. I am hoping we
20 are all going to meet as reasonable people here.

21 THE COURT: If so, I am here. But it does
22 sound like everyone truly has the same intent and
23 purposes about this, so I think we are all on the
24 same page in that regard.

25 So what I shall do then is I will, for the

1 purposes of the temporary injunction or the
2 injunction itself -- and I will need info. But
3 obviously just order/direct the sequestration/
4 preservation of the electronic voting machines,
5 voting cartridges, electronic voting systems,
6 instruments, and data, including software and
7 firmware used in the Sarasota County election for
8 the Congressional District 13.

9 However, said injunction shall not in any way
10 impede or inhibit the continued recounts by the
11 Supervisor of Elections.

12 Yes, sir.

13 MR. LABASKY: Could I get -- refer to the
14 continuation of the machine recount?

15 THE COURT: Yes, sir.

16 MR. LABASKY: And any manual recount ordered?

17 THE COURT: Exactly. Whatever it is that
18 allows you to continue what you are doing,
19 absolutely. If that is the wording you need, then I
20 will adopt that and put that as my words.

21 MR. LIGGIO: Then we have no objection to that
22 wording at all, Your Honor.

23 THE COURT: Okay. Now, do you want the
24 transcript as I have dictated the order, just to
25 make that part of the order itself?

1 MR. LIGGIO: Yes, Your Honor.

2 THE COURT: All right. While we are all
3 together, then, is there anything else I have left
4 out or that any party feels needs to be added or
5 deleted, from anyone?

6 MR. BENTLEY: Well, just to be -- since this is
7 important, you said the machines, et cetera, that
8 were used in the election for the 13th Congressional
9 District.

10 THE COURT: Yes, sir.

11 MR. BENTLEY: The testing, as I understand it
12 is going to proceed tomorrow, involves machines that
13 were not used in the election. So as I understand
14 your order, it would not apply to those machines.

15 THE COURT: Any reason why it should or should
16 not?

17 MR. LIGGIO: I understand they are talking
18 about doing some things with spare machines. But
19 because this is a much more complicated system than
20 just those machine units, it is going to require
21 some programming and some transferring of data and
22 adding of votes. And I -- we would rather not have
23 it done till we all agree, make sure we are doing it
24 right.

25 MR. BENTLEY: Okay. Well, that's --

1 MR. LIGGIO: That is what I am saying.

2 MR. BENTLEY: That's our problem, Your Honor,
3 is that interferes, then, with things outside the
4 scope of the recount. That interferes with an audit
5 request by a constitutional officer to another
6 constitutional officer. And that, I don't think --
7 heck, we are not even a party here. So, I mean, I
8 don't think it applies to us regardless.

9 But these are spare machines. I agree that we
10 have no reason to touch -- and we don't want to,
11 frankly, touch the machines that were used in
12 election until after the appeals are exhausted. But
13 the spare machines have nothing --

14 THE COURT: What is the prejudice? Where is
15 the prejudice for their -- to continue with this
16 procedure?

17 MR. LIGGIO: The prejudice is, is that there
18 is -- there is ways to do the audit appropriately
19 and ways not to do the audit appropriately. And we
20 have our expert, Professor Wallach here. Maybe he
21 can explain it better than I can.

22 THE COURT: No, we are not.

23 MR. LIGGIO: Is this is involving things
24 outside, as counsel admitted, the recount. They are
25 going to be a party very shortly. We are going

1 to --

2 THE COURT: This injunction also includes what
3 you are saying, as far as these other machines.
4 Does that stop them from proceeding?

5 MR. LIGGIO: I think in effect it does, Your
6 Honor. And that is why I am trying to get everybody
7 together.

8 THE COURT: Well..

9 MR. LIGGIO: Those machines are in the custody
10 of Ms. Dent's office.

11 THE COURT: I saw that.

12 MR. LIGGIO: Those machines aren't in
13 Tallahassee.

14 THE COURT: Let me hear from Mr. Labasky.

15 MR. LABASKY: Your Honor, I'm -- to be very
16 candid, I am not real clear about the procedures on
17 the audit, exactly what the department would be
18 utilizing or not utilizing. As Mr. Bentley pointed
19 out, obviously, if the order is going to extend to
20 all of equipment, that it may very well impair their
21 ability to move on their audit as we stand here and
22 as they anticipate doing tomorrow.

23 But again, I think that as it relates to the
24 Supervisor, we will maintain all the records and the
25 equipment with the integrity that is required. The

1 issue of how the plaintiffs would participate in the
2 audit that the state is going to undertake I think
3 is something that they kind of -- they need to
4 tailor themselves. And we might be a peripheral
5 party at that point.

6 MR. LIGGIO: And, Judge, while the recount
7 process is occurring, there is no mandating those
8 statutes that the audit has to be done in 48 hours
9 or 50 hours or a week. We are just trying to get an
10 audit that we can all agree to that is fair. So if
11 the State has announced without the parties'
12 participation, we are doing this parallel testing
13 which is part of an audit tomorrow, we -- we -- we
14 would like to make sure that it's done right. We
15 want to make sure it's done so that the independent
16 experts --

17 THE COURT: Mr. Bentley, let me ask you this.
18 At what point do these outside machines enter into
19 the process?

20 MR. BENTLEY: There you are testing the limits
21 of my knowledge. What I understand the --

22 THE COURT: Because I have no idea. I truly
23 am --

24 MR. BENTLEY: There is a thing called parallel
25 testing which I -- as I gather it in my complete

1 ignorance as of 11:15 this morning, was it's
2 essentially getting a baseline of, you know, here is
3 how the machine -- trying to recreate on a spare
4 machine what may or may not have occurred in the
5 election.

6 THE COURT: I know that. Let me ask all of you
7 this. If I were to include this other issue that
8 you are talking about, then I use the word "outside
9 machines" for lack of a better phrase, and delay
10 that include the outside machines for a period of 24
11 hours, do you think that is an issue you all can
12 deal with and address and take care of in the next
13 24 hours?

14 MR. LIGGIO: And then we will come back and see
15 you on Friday.

16 THE COURT: Well, I don't want -- seriously, I
17 don't want to bring everything to a grinding halt
18 for the next two weeks while we are arguing over
19 these outside machines so --

20 MR. DEMPSEY: Judge, if I may, we would be
21 concerned on behalf of Ms. Buchanan on conducting --

22 I think what the plaintiffs would like to do is
23 to participate in the testing. We agree with that.
24 To the extent that they object and feel they have to
25 have an expert there, you know, I don't know that we

1 are, you know, concerned about that. We would like
2 to have an expert also. As of right now we do not
3 have an expert who would be ready to begin the
4 testing within 24 or 48 hours.

5 In addition, over the next 48 hours we are
6 going to be doing the recounts, the manual recounts
7 both in Sarasota County and Manatee County. And so
8 in terms of just logistics and resources, it becomes
9 difficult to do that. And if we do have concerns --
10 I mean, it does so happen that experts tend not to
11 agree about what the correct procedures are going to
12 be. I guess I would be concerned about running back
13 into court on emergency hearings to rectify and have
14 Your Honor decide what procedures have to take
15 place.

16 It seems to me the issue is whether or not this
17 parallel testing that the state wants to do goes
18 forward tomorrow or not. And I would suggest that
19 if the answer is not, then we look towards not
20 trying to force it within this week when we have so
21 much else going on.

22 MR. LIGGIO: And we will work together with the
23 parties, Your Honor, if necessary. It's not going
24 to slow down filing a contest unless it -- we can
25 file a generic thing, a generic petition and amend

1 it as necessary.

2 We want to work together with everybody here.
3 And if this thing is ongoing tomorrow, which is part
4 of the audit and -- I want to be clear. These are
5 not outside machines from a vendor or from
6 Tallahassee. These are spare machines in Ms. Dent's
7 office that they plan to utilize tomorrow. So
8 whether it's -- I'm hoping we can agree on a
9 protocol where we -- where we all can sit down over
10 the weekend or tomorrow or Friday, and let's all
11 agree on the parallel testing and audit protocol, so
12 that nobody can come in afterwards and say this
13 wasn't done right. And that's why we don't want
14 this to happen tomorrow.

15 THE COURT: I understand.

16 MR. LIGGIO: But it will not affect the
17 recount. We want that to continue in accordance
18 with the statutory --

19 MR. BENTLEY: Your Honor --

20 THE COURT: Mr. Labasky. Hold your thought,
21 please. He was raising his hand.

22 MR. LABASKY: We would suggest that perhaps if
23 the Court does have time tomorrow at noon, give us
24 24 hours, let the plaintiffs amend their complaint
25 to bring the Department in, and let the Department

1 get a feel for where they are. Because I think they
2 are the critical party at this point.

3 THE COURT: Pardon me. I am reluctant to
4 really start meeting making a lot of rulings without
5 the Department having their say in this matter as
6 well. I don't think it's appropriate for me to do
7 so.

8 MR. BENTLEY: That was my thought. That's all
9 I was going to say. Let's just come back tomorrow
10 after we have been joined and we know what it is
11 they want.

12 THE COURT: I agree, I agree. Because I gave
13 you an hour and a half notice, and I don't think
14 it's fair to drag all of you from whatever you are
15 doing to --

16 MR. LIGGIO: I wonder if we could do it
17 48 hours instead of 24, guys. Is it going to hurt
18 to stop one day? I have something I needed to do
19 back home, if I could get back for one day.

20 MR. BENTLEY: Well, frankly, I didn't know it
21 was going forward tomorrow anyway. So I assume so.
22 But I -- I will have to check with Secretary Cobb's
23 office. I just -- I will try to do it the minute we
24 leave here.

25 THE COURT: Mr. Labasky? Mr. Dempsey?

1 MR. LABASKY: Your Honor, I am fine through
2 Thursday afternoon. I have got to be in federal
3 court on Friday so if we -- I am not going to be
4 able to participate. I request we not schedule
5 anything for Friday.

6 THE COURT: Is it on a voting election matter
7 that you are going to be in federal court?

8 MR. LABASKY: Yes, Your Honor.

9 THE COURT: Mr. Dempsey.

10 MR. LABASKY: Since Judge King had it for
11 almost two years and this is, I think, we are
12 bringing it in for a landing, I don't think I would
13 probably get a continuance at this point.

14 THE COURT: So two years from now I am still
15 going to be hearing this, is that what you are
16 saying?

17 MR. LABASKY: It's a possibility.

18 THE COURT: Mr. Dempsey.

19 MR. DEMPSEY: Again, Your Honor, as a practical
20 matter, I think on Friday we are going to be in the
21 middle of doing the manual recounts and tomorrow we
22 will be -- or, excuse me, Thursday we would be.

23 MR. LABASKY: Right.

24 MR. DEMPSEY: And so I guess, you know, in
25 terms of where we expect to end up with this: As a

1 practical matter, you know, I think the impact of
2 this is going to be we are talking about this next
3 week in terms of getting the experts together, which
4 is, you know, I think what Mr. Liggio ultimately
5 would like to do.

6 THE COURT: All right. So 48 hours from today,
7 which is no later than 1:00 o'clock, Thursday, which
8 is the 16th, correct?

9 MR. LIGGIO: Yes, Your Honor.

10 MR. BENTLEY: Fair, Your Honor.

11 THE COURT: How is that?

12 MR. LIGGIO: And we will be talking amongst
13 ourselves in the interim, Your Honor.

14 THE COURT: I hope so. All right. What else
15 while we are all together? Because I know it's hard
16 to get you all together. I appreciate you coming in
17 on short notice. What else do we need regarding
18 this order of the court? Anything else we need to
19 address, anything I have overlooked?

20 MR. LIGGIO: I don't believe so, Your Honor.

21 THE COURT: Anything we need to add?

22 MR. LABASKY: No, Your Honor. Just so -- just
23 to recap the --

24 THE COURT: Yes, sir.

25 MR. LABASKY: The order is going to indicate

1 that the equipment will be kept safe and secure,
2 sequestered, the language the court is going to use.

3 THE COURT: Yes, sir.

4 MR. LABASKY: The recounts will go forward.
5 That will not impede those recounts.

6 THE COURT: Yes, sir.

7 MR. LABASKY: And we will be back together in
8 48 hours.

9 MR. LIGGIO: And we have agreed that your --
10 from the ruling from the bench, the transcript will
11 suffice as the order as opposed to a written order.

12 THE COURT: Right. I would. Is that all right
13 since this is on an emergency basis?

14 MR. LABASKY: So the practical matter of this
15 is, I think, until Thursday afternoon there won't be
16 any possibility of any kind of audit or testing --

17 MR. LIGGIO: That's right.

18 MR. LABASKY: -- going forward.

19 MR. LIGGIO: To give us a chance to talk
20 amongst ourselves.

21 THE COURT: Okay.

22 MR. BENTLEY: One last thing. If there is an
23 issue, I will set it tomorrow, then.

24 THE COURT: All right. Between now and --
25 seriously, if there is an emergency, I will find the

1 time. If something comes up between now and
2 Thursday, let me know and I will give you the time
3 tomorrow.

4 MR. LIGGIO: Judge, of course, Mr. Partridge is
5 here locally. And if I need to be in Palm Beach
6 tomorrow, could I appear by phone if necessary?

7 THE COURT: Absolutely. Mr. Partridge, just
8 let my judicial assistant know, sir. We will make
9 time available. Tomorrow I have got a trial in the
10 morning starting, but I will just take some time out
11 of that trial and we will address whatever emergency
12 issues arise.

13 MR. LIGGIO: Thank you, Your Honor.

14 THE COURT: All right, folks. Thank you for
15 being here in such short time.

16 MR. DEMPSEY: Thank you, Judge.

17 MR. LABASKY: Thank you.

18 THE COURT: All right. Thank you.

19 THE BAILIFF: Court is adjourned.

20 (Proceedings concluded at 12:41 p.m.)
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CERTIFICATE OF REPORTER

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STATE OF FLORIDA
COUNTY OF SARASOTA

I, Donna L. Peterson, Registered Diplomate Reporter and Certified Realtime Reporter, do hereby certify that I was authorized to and did report in Stenotypy and electronically the foregoing proceedings and evidence in the captioned case and that the foregoing pages constitute a true and correct transcription of my recordings thereof.

IN WITNESS WHEREOF, I have hereunto affixed my hand this NOV 14 2006, at Sarasota, Sarasota County, Florida.

Donna L. Peterson

Donna L. Peterson, RDR, CRR
SCLAFANI WILLIAMS COURT REPORTERS, INC.

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IN THE CIRCUIT COURT OF THE
SECOND JUDICIAL CIRCUIT, IN AND
FOR LEON COUNTY, FLORIDA.

CHRISTINE JENNINGS, nominee of the
Democratic Party for Representative in
Congress from the State of Florida's
Thirteenth Congressional District,

Plaintiff,

vs

CASE NO. 2006-CA-2973

ELECTIONS CANVASSING COMMISSION
OF THE STATE OF FLORIDA, consisting of
Governor Jeb Bush, Chief Financial Officer
Tom Gallagher, and State Senator Daniel
Webster; SARASOTA COUNTY CANVASSING
BOARD, consisting of Supervisor of Elections
Kathy Dent, Judge Phyllis Galen, and
Commissioner Paul Mercier; KATHY DENT
as Sarasota County Supervisor of Elections;
SUE M. COBB as Secretary of State of the
State of Florida; DAWN K. ROBERTS as Director
of the Division of Elections of the State of Florida;
and VERN BUCHANAN, as nominee of the
Republican Party for Representative in Congress
from the State of Florida's Thirteenth Congressional
District,

Defendants.

ORDER ON MOTION TO COMPEL EXPEDITED DISCOVERY

This cause came on for hearing on the Motion To Compel Expedited Discovery filed
by Plaintiff, Christine Jennings, nominee of the Democratic Party for Representative in
Congress from the State of Florida's Thirteenth Congressional District. The Court having

considered said motion, argument of counsel, and being otherwise advised, it is

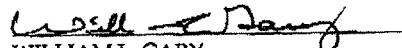
ORDERED AND ADJUDGED as follows:

1. The Defendants shall respond to Plaintiff's Request For Production of Documents and Inspection of Tangible Things within fifteen (15) days of the date of this order.

2. The tests to be conducted on Tuesday, November 28, 2006, on the voting machines by Defendants, Kathy Dent, as Sarasota County Supervisor of Elections, and Sue M. Cobb, as Secretary of State of the State of Florida, shall be conducted in such a fashion that allows the experts of the Plaintiff, Christine Jennings, and Defendant, Vern Buchanan, to observe said testing.

3. The request for production of the "source code" is denied without prejudice.

DONE AND ORDERED in Chambers at Tallahassee, Leon County, Florida, this 21st day of November, 2006.


WILLIAM L. GARY
Circuit Judge

copies to:

KENDALL COFFEY
Coffey & Wright, LLP
2665 South Bayshore Drive
PH-2, Grand Bay Plaza
Miami, FL 33133

and

MARK HERRON
Messer, Caparelo & Self, PA
2618 Centennial Place
Tallahassee, FL 32308
Attorneys for Plaintiff

PETER ANTONACCI
ALLEN C. WINSOR
Gray Robinson, PA
301 South Bronough Street
Suite 600
Tallahassee, FL 32301
(PO Box 11189
Tallahassee, FL 32302)
Attorneys for Defendant, Elections Canvassing
Commission of the State of Florida,
Sue Cobb, Secretary of State, and Dawn K.
Roberts, Director, Division of Elections

HAYDEN R. DEMPSEY
Greenberg Traurig, PA
101 East College Avenue
Tallahassee, FL 32301
Attorneys for Defendant, Vern Buchanan

RONALD A. LABASKY
Young Van Assenderp, PA
225 South Adams Street
Tallahassee, FL 32302
Attorneys for Defendant, Kathy Dent

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Tab 15

M E M O R A N D U M

DATE: November 21, 2006
TO: Interested Media
FROM: Jenny Nash
RE: AUDIT PLAN FOR SARASOTA COUNTY

As announced yesterday, the Florida Department of State will begin parallel testing in Sarasota on Tuesday, November 28, 2006. This is the first testing phase of an ongoing, comprehensive audit the Department is conducting of the voting systems and election administrative procedures used in the U.S. Congressional District 13 race in Sarasota County. The first parallel test will be conducted on touchscreen voting machines which were prepared for Election Day but not deployed.

The Department will continue to review all documents and data relevant to the audit. On Friday, December 1st the second parallel test will take place. This round of testing will be conducted on touchscreen machines utilized in Sarasota County for precinct voting in the November General Election. Both parallel tests will be videotaped. The Department has conferred with outside experts and experts retained by both candidates in advance of the testing.

The public and representatives of the candidates are invited to observe. The testing will take place from 6:30 a.m. to 7:30 p.m. at:

The Interim Government Operations Center
1001 Sarasota Center Boulevard
Sarasota, FL 34240

Jenny Nash
Deputy Chief of Staff for Communications
Florida Department of State
Sue M. Cobb, Secretary of State
850.245.6518
Make a Difference - Mentor!

Please note: Florida has a very broad public records law. Most written communications to or from state officials regarding state business are considered to be public records and will be made available to the public and the media upon request. Therefore, your e-mail message may be subject to public disclosure.

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Tab 16

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Parallel Test
DOE Audit for
Sarasota County FL
2006 General Election

Purpose:

Sarasota County, Florida experienced an unexpected number of undervotes for the 13th Congressional District race during the 2006 General Election. Although a number of factors may have contributed to this undervote total, interested parties are concerned that the undervote for this race suggests that the voting equipment may not have correctly captured the voters' selection.

The Florida Division of Elections (DOE) has developed an extensive audit plan to ascertain if a process, definition, machine, or tabulation anomaly contributed to this contest's undervote total. As part of DOE's extensive audit, the Bureau of Voting Systems Certification (BVSC) will utilize a test activity that has become known as a "parallel test". Typically, a parallel test involves a random selection of voting devices from the population of voting devices destined for deployment on election day. This test sample would be segregated from the actual deployed devices, but otherwise would undergo the same election day activities in "parallel" with the deployed voting devices, except the voters would consist of a test team and the ballots cast would be defined by a predetermined test script. The intent of this parallel activity is to ascertain the accuracy and reliability of the deployed voting devices with consideration given to ballot style, layout, coding, demographics, and operation.

Scope:

The application of the parallel test technique for this audit will deviate from the classical parallel test in that the test script will be based on the audit data extracted from a sample of iVotronic touchscreen devices. In addition, the test script will also take into consideration the voting experience of several voters that were described in various news articles. The audit data for each iVotronic touchscreen consists of two records: the event log and the ballot images. The event log contains the timing element for when each ballot was cast. The ballot image file contains the voter selections as they appeared on the review screen at the time the voter pressed the "VOTE" button. However, the arrangement of the ballot images is random. Therefore, these ballot images cannot be associated with the time that the ballot was cast.

BVCS requested each candidate to provide a list of two to four precincts that they believed warrant close examination. From this list of precincts, BVSC staff identified four iVotronic touchscreens (two from Jennings' list and two from Buchanan's list) that experienced the highest undervote within their respective precinct. This selection should enhance the probability of revealing the undervote anomaly should it exist. BVSC personnel then developed a test script from the audit data extracted from each of these machines. The four iVotronic touchscreens and their precinct are:

<u>iVotronic SN #</u>	<u>Precinct</u>	<u>Precinct selected by:</u>
V0105192	105	Jennings' organization
V0106437	118	Jennings' organization
V0117973	76*	Buchanan's organization
V0106866	113*	Buchanan's organization

** Note: The Buchanan organization recommended a random selection. BVSC performed this random selection utilizing MS Excel. The Jennings' organization also identified precincts 118 and 31 in their initial selection and later added precincts 44 and 74.*

Tests:

BVSC will conduct two parallel tests each consisting of four iVotronic touchscreens that will follow a predetermined test script and a fifth iVotronic machine that will undergo an "ad hoc" vote selection process focused on the 13th Congressional District race. The test script is based on the event log and ballot images from the four iVotronic touchscreens identified above. The first parallel test will utilize a random selection of touchscreens from the pool of touchscreens that were not deployed during the general election. BVSC randomly selected one ADA iVotronic touchscreen and four non-ADA iVotronic touchscreen from this pool. The one ADA touchscreen and three non-ADA touchscreens will be tested using the predetermined script and the remaining touchscreen will be the ad hoc touchscreen.

The second parallel test will utilize the actual iVotronic touchscreens identified above plus a fifth touchscreen from precinct 117 (SN # V0106366) for the ad hoc exercise. An alternate consideration would be precinct 31 (SN # V0106117). In addition, BVSC will also utilize the same master PEBs and compact flash cards that were used by these machines for the second parallel test. BVSC will consider suggestions from both candidates' technical experts for testing the ad hoc devices, but this information must allow at least a 30 minute lag in order to coordinate their suggestions into the test procedure and must include an equal number of suggestions from both candidates's representatives. The five randomly selected touchscreens are:

iVotronic SN #
 V0106549
 V0105124
 V0106923
 V0105917
 V0106978 (ADA)

Key Elements:

A number of media reports have described the problems that several Sarasota voters encounter in making their selections and/or in making corrections to their selections as presented on the review screens. BVSC will utilize one or more test scripts and/or the ad hoc touchscreens in an effort to replicate the published anomalies. Although a number of these voters indicated a problem with their initial and final selection for the 13th Congressional District race, the primary focus of the parallel tests concerns the review screens. The review screens present the voter with the voter's selections. It is this review screens' list of voter selections that the iVotronic records when the voter presses the "VOTE" button to cast the ballot. The chief question concerns whether the review screen as presented to the voter and ultimately verified and cast by the voter is in fact what was stored as the ballot image within the three redundant EEPROM memory chips. Thus, a review screen that shows a selection for any candidate and/or measure that is not captured in the ballot image is a machine error. Likewise, any review screen that does not show a selection that is captured within the ballot image is also a machine error.

Items not tested:

ES&S Unity 2.4.4.2 election management system.

Observers and Rules:

A maximum of five observers may be present within the test area. Observers must adhere to strict silence and may not interfere with this test. Observers may rotate into the test area at each half-hour interval upon direction from the test director. One designated member of the BVSC staff will serve as the test director and this position will be staffed on a rotation basis. Other members of BVSC may be present in the test area. In addition, there will be one videographer present who may enter and leave at any time. Observers must use a signup sheet to reserve their space. Three of the five positions are reserved for a member from each of the candidate's representatives, as well as a plaintiff's representative from the case of *Fedder, et al. v. Cobb*, Leon Co. Case No. 06-2996. One position is open to the public. The fifth position will be reserved for the vendor's representative. Should the vendor choose not to send a representative, the maximum number of observers will revert to four. BVSC will not manage this signup activity and only those individuals that have signed up will be granted access to the test area. BVSC reserves the right to remove any and all observers should one or more individuals or this process provokes a disruptive forum in the test area. The determination of what constitutes a disruptive activity is at the sole discretion of the test director.

Test Setup:

Sarasota Elections personnel will assist with the logistics, equipment setup, and election media preparation. A professional videographer will utilize five cameras to record TV quality images with one camera devoted to each of the five test units. Each camera will also record audio and at least one camera will provide a video feed to the public viewing area. The test area will also include one or more microphones and the audio will be provided to the public viewing area. Within 48 hours after the conclusion of the test, the videographer will transfer the video and audio to DVD. DOE will retain the original of these items as part of the audit records and will provide copies of these records upon written request and payment for duplication/copying costs.

Each parallel test will begin at approximately 6:30 AM on the designated day and will terminate at 7:30 PM on that day. Each poll will open at approximately 7 AM and close at approximately 7 PM with the intent of closely replicating the actual times indicated in the event logs. Sarasota Elections personnel will open and close the polls and generate the zero and results tapes. The DOE test team will not participate in this activity. DOE will retain the zero and results tapes as part of audit records. These tapes are public record and copies may be requested from the Division of Elections.

DOE personnel will serve as the test team. Only the test director may converse with a test team member. Each touchscreen test team will consist of one individual that will make selections per the test script. Another test team individual will ensure that the script is followed, will verify the review screens' selections, and will note any discrepancy on the test script record. For the ad hoc machine, this second individual will document anomalies, if present, and will document the final review screen selections prior to casting the ballot.

Test Script:

The test script represents the voter selections based on the event log timing and the ballot images from the selected touchscreens. However, the test script will include several vote patterns for the 13th Congressional District race intended to uncover whether any of the reported problems that voters encountered in making their selections caused an error with the review screens' display of the voter's selections. All of the vote patterns will be tested on the ad hoc touchscreen. However, at least the first two patterns from each category will be included in the test scripts.

Each of the vote pattern categories are identified by the final voter selection as indicated on the ballot image. Thus, each category represents one of the three conditions that may exist on the review screen: a final selection for Buchanan, a final selection for Jennings, or a final selection that has neither candidate selected (i.e., undervote). Within each of the three categories (B, J, or U) there are several variations of voter selection scenarios focused on the Jennings selection as described below:

Vote Pattern B-1

- Select Jennings the first time the race is presented to the voter.
- Return to the race from the review screen after all other selections are made by paging back and change final selection to Buchanan.
- Verify Buchanan is the selection indicated on the review screen prior to casting the ballot.

Vote Pattern B-2

- Select Jennings the first time the race is presented to the voter.
- Return to the race directly from the review screen after all other selections are made and change final selection to Buchanan.
- Verify Buchanan is the selection indicated on the review screen prior to casting the ballot.

Vote Pattern J-1

- Select Jennings the first time the race is presented to the voter.
- Return to the race from the review screen after all other selections are made by paging back and verify selection is still Jennings.
- Verify Jennings is the selection indicated on the review screen prior to casting the ballot.

Vote Pattern J-2

- Select Jennings the first time the race is presented to the voter.
- Return to the race directly from the review screen after all other selections are made and verify selection is still Jennings.
- Verify Jennings is the selection indicated on the review screen prior to casting the ballot.

Vote Pattern J-3

- Select Buchanan the first time the race is presented to the voter.
- Return to the race from the review screen after all other selections are made by paging back and change final selection to Jennings.
- Verify Jennings is the selection indicated on the review screen prior to casting the ballot.

Vote Pattern J-4

- Select Jennings the first time the race is presented to the voter.
- Return to the race directly from the review screen after all other selections are made and change final selection to Jennings.
- Verify Jennings is the selection indicated on the review screen prior to casting the ballot.

Vote Pattern J-5

- Do not make a selection the first time the race is presented to the voter.

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- Return to the race from the review screen after all other selections are made by paging back and change final selection to Jennings.
- Verify Jennings is the selection indicated on the review screen prior to casting the ballot.

Vote Pattern J-6

- Do not make a selection the first time the race is presented to the voter.
- Return to the race directly from the review screen after all other selections are made and change final selection to Jennings.
- Verify Jennings is the selection indicated on the review screen prior to casting the ballot.

Vote Pattern U-1

- Select Jennings the first time the race is presented to the voter.
- Return to the race from the review screen after all other selections are made by paging back and change final selection to an undervote.
- Verify an undervote is the selection indicated on the review screen prior to casting the ballot.

Vote Pattern U-2

- Select Jennings the first time the race is presented to the voter.
- Return to the race directly from the review screen after all other selections are made and change final selection to an undervote.
- Verify an undervote is the selection indicated on the review screen prior to casting the ballot.

Test Procedure:

At 6:30 AM a member of the Sarasota elections staff will unseal the five iVotronic touchscreens. A BVSC staff will document the time, seal numbers, serial numbers, and a second individual will confirm this information. A Sarasota elections staff member will activate the iVotronic touchscreen and enter the service menu to set the date to November 7, 2006 and to synchronize the time to the time displayed in the test room.

At the appropriate time per the event log, a Sarasota elections staff member will open the poll (election mode), print a zero tape, and sign the tape along with a test team or BVSC staff member.

The test team will follow and document their activities per the test script with the exception of the ad hoc test team. That test team will document the vote selections on .pdf presentation of the ballot and will annotate on this document which vote patten was followed.

At the appropriate time per the event log, a Sarasota elections staff member will close the poll, print a results tape, and sign the tape along with a test team or BVSC staff member.

Preliminary Test Summary Report:

BVSC will prepare a preliminary test summary report five business days after the conclusion of the second parallel test.

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Tab 17

IN THE CIRCUIT COURT FOR THE SECOND JUDICIAL CIRCUIT
IN AND FOR LEON COUNTY, FLORIDA
CIVIL DIVISION

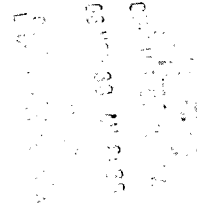
CHRISTINE JENNINGS, nominee of the
Democratic Party for Representative in Congress
from the State of Florida's Thirteenth Congressional
District,

Plaintiff,

v.

No: 2006 CA 2973

ELECTIONS CANVASSING COMMISSION OF
THE STATE OF FLORIDA, consisting of Governor Jeb
Bush, Chief Financial Officer Tom Gallagher, and State
Senator Daniel Webster; SARASOTA COUNTY
CANVASSING BOARD, consisting of Supervisor of
Elections Kathy Dent, Judge Phyllis Galen, and
Commissioner Paul Mercier; KATHY DENT, as
SARASOTA COUNTY SUPERVISOR OF ELECTIONS;
SUE M. COBB, as SECRETARY OF STATE OF THE
STATE OF FLORIDA; DAWN K. ROBERTS, as
DIRECTOR OF THE DIVISION OF ELECTIONS OF
THE STATE OF FLORIDA; VERN BUCHANAN,
as nominee of the Republican Party for Representative
in Congress from the State of Florida's Thirteenth
Congressional District; and ELECTION SYSTEMS
& SOFTWARE, INC.,



Defendants.

FIRST AMENDED COMPLAINT TO CONTEST ELECTION

1. This is an action to contest the Elections Canvassing Commission's November 20, 2006 certification that Vern Buchanan received 369 more votes than Christine Jennings in the election for the United States House of Representatives for Florida's Thirteenth Congressional District. The vote totals in the certification are wrong because they do not include thousands of legal votes that were cast in Sarasota County but not counted due to the pervasive

malfunctioning of electronic voting machines. The number of uncounted votes in the County is more than sufficient to call into doubt, indeed to change, the result of the election. Thus, Christine Jennings is entitled to appropriate relief under Section 102.168, Florida Statutes. It is critically important that this Court provide such relief promptly -- in the form of a new election -- to ensure that the will of the people of the Thirteenth District is respected, and to restore the confidence of the electorate, which has been badly fractured by this machine-induced debacle.

2. The Elections Canvassing Commission certified vote totals exclude the legal votes of thousands of Sarasota County voters who used the County's electronic voting machines to vote in the election for the Thirteenth District seat and did not have their votes recorded. Indeed, the electronic voting machines in Sarasota County failed to record votes in this race for one out of every seven voters -- nearly 15% of those who voted using the machines. There is no possibility that so many Sarasota County voters would have voluntarily abstained from voting in this hotly contested, high-profile race. Statistical analysis confirms that common-sense conclusion. Even more strikingly, the eyewitness accounts of hundreds of Sarasota County voters, and the contemporaneous records of the Sarasota County Supervisor of Elections, document that the electronic voting machines in Sarasota County used in early voting and on November 7, 2006 were systematically failing to record votes cast for candidates in the Thirteenth District congressional race -- particularly votes cast for Plaintiff Christine Jennings.

3. By law, every polling place in Florida displays a "Voter's Bill of Rights" stating that "Each registered voter in this state has the right to: . . . Vote on a voting system that is in working condition and that will allow votes to be accurately cast." § 101.031(2), Florida Statutes (2006). In the election challenged here, Sarasota County election officials failed to deliver on that promise. Indeed, the failure to count the legal votes of the thousands of Sarasota County

voters who went to the polls and cast votes in the Thirteenth District race is a miscarriage of the electoral process that can -- *and must* -- be remedied in this contest action. These voters should not forfeit their constitutional right to vote because the County's machines malfunctioned. Yet disenfranchisement is exactly what will happen unless the Election Canvassing Commission's certification is declared void. If the uncounted legal votes in Sarasota County had been properly recorded and counted, Plaintiff would be entitled to prevail in this race. The voting percentages in the County ran significantly in Plaintiff's favor. The votes she lost due to machine malfunction would thus be more than enough to reverse the razor-thin margin Defendant Buchanan holds in the certified result. Thus, the current election result cannot stand. The voters of the Thirteenth District -- all of the voters, including those disenfranchised by machine failure -- should decide the outcome, and the proper remedy is therefore to hold a new election in the district as promptly as possible.

Common Allegations

4. This is an action to contest an election under Section 102.168, Florida Statutes, which provides that the outcome of an election "may be contested in the circuit court by any unsuccessful candidate for such office" based on the "rejection of a number of legal votes sufficient to change or place in doubt the result of the election." Fla. Stat. § 102.168(3)(c).

5. Section 102.1685, Florida Statutes, establishes Leon County as the proper venue for this action.

6. The Thirteenth Congressional District of Florida comprises all of DeSoto, Hardee, and Sarasota Counties, and parts of Charlotte and Manatee Counties.

7. Plaintiff Christine Jennings is the Democratic candidate for the Representative in Congress from Florida's Thirteenth Congressional District.

8. Section 102.111 creates the Elections Canvassing Commission and charges it with certifying elections and determining who has been elected for each office. Governor Jeb Bush, Chief Financial Officer Tom Gallagher, and State Senator Daniel Webster are the members of the Elections Canvassing Commission. Section 102.168(4), Florida Statutes, provides that the Elections Canvassing Commission is an indispensable and proper party defendant in contest proceedings for federal elections.

9. The Sarasota County Canvassing Board is constituted in accordance with Section 102.141, Florida Statutes, and is comprised of Kathy Dent, Supervisor of Elections; Phyllis Galen, county court judge, who acts as chair; and Paul Mercier, chair of the board of county commissioners. The Sarasota County Canvassing Board is charged with canvassing and certifying Sarasota County's elections to the Department of State.

10. Kathy Dent is the Supervisor of Elections of Sarasota County. Kathy Dent is a member of the Sarasota County Canvassing Board and in her capacity as Supervisor of Elections is charged with overseeing all federal, state, and county elections in Sarasota County.

11. Sue M. Cobb is the Secretary of State for the State of Florida. The Secretary serves as the State's Chief of Elections.

12. Dawn K. Roberts is the Director of the Division of Elections for the State of Florida.

13. Vern Buchanan is the Republican candidate for the Representative in Congress from the Florida's Thirteenth Congressional District. Section 102.168(4), Florida Statutes, provides that the apparently successful candidate is an indispensable party to any action brought to contest the election of a candidate.

14. Election Systems & Software, Inc. (“ES&S”) is a Delaware corporation headquartered in Omaha, Nebraska and registered with the Florida Department of State, Division of Corporations to transact business in the State of Florida. ES&S transacts business with the Department of State, Division of Elections in Leon County. The Division of Elections lists ES&S on its website as a vendor of a certified voting system in the State of Florida. Copies of ES&S’s program codes, user and operator manuals, and software are on file with the Department of State pursuant to Section 101.5607(1)(a), Florida Statutes. Copies of county-specific election-definition files and ballot programming modifications to ES&S’s software are also on file with the Department of State pursuant to Section 101.5607(1)(a), Florida Statutes, and Rule 1S-2.015(5)(f), Florida Administrative Code. NRAI Services, Inc., located at 2731 Executive Park Drive, Suite 4, Weston, FL 33331, is ES&S’s registered agent in the State of Florida.

a. ES&S is the manufacturer of the “iVotronic” touch screen voting system used in Sarasota County in the 2006 general election. The ES&S touch screen machines also constitute the primary voting system in ten other Florida counties. Additionally, ES&S provides equipment to 21 other counties in this State, as well as ongoing consulting services to election officials using its systems, including the Sarasota Supervisor of Elections.

b. As a major provider of election equipment to Florida voters, ES&S has generated millions of dollars in revenue by conducting business in the State. To continue generating such substantial revenues, ES&S seeks to maintain public confidence in its equipment. With respect to the software and source codes necessary to operate the iVotronic machines, ES&S contends that it is the owner of any trade secrets that may be related to that system. By virtue of, among other things, its substantial role in Florida elections processes, including the Sarasota County general election, as well as any claims concerning proprietary information and trade secrets,

ES&S is a proper party to this action having a cognizable interest in the outcome of these proceedings.

15. On November 7, 2006 ("Election Day"), the State of Florida conducted an election for numerous offices, including the Representative in Congress from the Thirteenth District. Early voting and voting by absentee ballot were permitted for this election (as for all state elections).

16. For both early voting and voting on Election Day, Sarasota County made use of electronic voting machines, called iVotronic machines, manufactured by Electronic Systems & Software, Inc. Sarasota County does not use iVotronic machines (or any other electronic voting machines) for absentee balloting. For absentee balloting, Sarasota County uses paper ballots read by optical-scanning equipment.

17. The first unofficial results reported on November 8, 2006 for the Thirteenth District congressional race showed that in Sarasota County, there were 58,534 votes for Vern Buchanan, 65,367 votes for Christine Jennings, and 18,382 undervotes.

18. On November 13, 2006, the Elections Canvassing Commission ordered a machine recount for the race pursuant to Section 102.141(6), Florida Statutes, because the difference in votes cast between Vern Buchanan and Christine Jennings was less than 1/2 of 1 percent.

19. On November 15, 2006, the Honorable Sue M. Cobb, Secretary of State, released the results of the machine recount and ordered a mandatory manual recount pursuant to Section 102.166(1), Florida Statutes, because the difference in votes cast between Buchanan and Jennings was less than 1/4 of 1 percent. Broken down by county, the recorded vote totals after the machine recount were as follows:

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	Buchanan	Jennings
Charlotte:	4,459	4,270
DeSoto:	3,467	3,056
Hardee:	2,628	1,684
Manatee:	50,053	44,365
Sarasota:	58,535	65,366

20. On November 15, 2006, the Secretary of State also reported an “undervote” of 21,303 for the congressional race. The term “undervote” describes a situation in which a voter cast ballots for other candidates or ballot measures but did not register a vote for the particular office. See § 97.021(37), Florida Statutes. Broken down by county, the undervote totals were as follows:

Charlotte:	174
DeSoto:	148
Hardee:	277
Manatee:	2,324
Sarasota:	18,380

21. The undervote total for the congressional race in Sarasota County is extremely abnormal in numerous respects, including the following:

a. A total of 88,927 ballots were cast in this race on Election Day in Sarasota County on the electronic voting machines. Christine Jennings received 39,930 votes and Vern Buchanan received 36,619 votes. There were 12,378 undervotes. The undervote rate on Election Day in Sarasota County was therefore an extraordinary 13.9% of the ballots cast on the electronic voting machines.

b. A total of 30,832 ballots were cast during the early-voting process in Sarasota County, on the same type of electronic voting machines. Christine Jennings received 14,509 votes, and Vern Buchanan received 10,890 votes. There were 5,433 undervotes. The

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undervote rate in the early-voting process in Sarasota County was therefore an extraordinary 17.6% of the ballots cast. And the combined undervote percentage for early and Election Day voting on the electronic voting machines was an equally extraordinary 14.9%.

c. In vivid contrast, of the 22,525 votes cast in this race by absentee ballot in Sarasota County (which were recorded by optical-scanning devices, not by electronic voting machines), Christine Jennings received 10,928 votes, and Vern Buchanan received 11,025 votes, and there were just 571 undervotes recorded -- a rate of only 2.53%, which is consistent with historical norms and expectations.

d. In equally vivid contrast, the percentage of undervotes for the House of Representatives race in other counties within the Thirteenth District did not remotely approach the undervote rates for the electronic voting machines in Sarasota County. The undervote rate for this race was 2.5% in Charlotte County, 2.2% in DeSoto County, 5.3% in Hardee County, and 2.4% in Manatee County. The combined undervote percentage for these four counties is only 2.5% -- one-sixth the undervote percentage recorded in Sarasota County for votes cast on electronic voting machines.

e. In addition, the undervote percentage recorded in Sarasota County for other high-profile races is a small fraction of the 14.9% undervote rate on electronic voting machines for the congressional race. For example, the undervote percentage recorded in Sarasota County for the Governor's race was 1.28% and the undervote percentage for the United States Senator's race was 1.14%.

f. Finally, the percentage of undervotes on electronic voting machines for the congressional contest in Sarasota County in 2006 is almost seven times the rate of undervotes

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for the Thirteenth District congressional race in 2002 (the last midterm election), which was 2.2%.

22. In 2001, Sarasota County became the first county in Florida to use the iVotronic voting system. They have been used since 2001 in at least 19 separate primary, general, and local elections. In the 2006 election, Sarasota County voters were asked whether to adopt a proposed county charter amendment requiring that as of January 1, 2008, all county voting systems provide a voter-verified paper ballot and that mandatory audits of election results be conducted in every election comparing hand counts to machine counts. The county adopted the proposed charter amendment with the support of 55.4% of voters, indicating that voters themselves have lost confidence that the iVotronic system is capable of correctly recording their votes. Significantly, the undervote rate for this proposed charter amendment was only 6.2%.

23. The statistical evidence alone indicates that the staggeringly large number of undervotes in Sarasota County is due to the malfunctioning of the iVotronic electronic voting machines. In fact, preliminary expert statistical analysis of the reported election results concludes there is little doubt that the use of the iVotronic machines in Sarasota County caused the extraordinarily high rate of undervotes in that county. The fact that undervote rates from the rest of the district and from absentee voters in Sarasota County were so much lower than rates from voters using the iVotronic machines in Sarasota County rules out the possibility that the extraordinarily high Sarasota County undervote rates were caused by factors common throughout the district --- such as voter abstention due to negative campaigning or dissatisfaction with both candidates. Evidence that such alternative explanations were causing high undervote rates would have shown up throughout the district, not in a single county, and not just among one type of voting machine in that county. Additionally, the fact that a higher undervote rate was present on

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identical electronic voting machines in two different modes of voting that occurred at different times --- early voting (from October 23 to November 5) and Election Day voting (November 7) - -- creates an overwhelming suspicion that the problems pertain to the use of these electronic machines in Sarasota County. An examination of the source code for the ES&S iVotronic voting system and of any modifications made to it for the purpose of creating county-specific election-definition files and ballot programming is necessary to determine conclusively the cause of the massive undervote in Sarasota County. These codes and files are escrowed with the State pursuant to Section 101.5607, Florida Statutes, and Rule 1S-2.015(5)(f), Florida Administrative Code.

24. It is extremely unlikely that an undervote rate of the magnitude that occurred in Sarasota County can be principally attributed to voter confusion or ballot design. Even the most egregious examples of voter confusion caused by ballot design in other races do not yield undervote percentages remotely as high as those present in the Thirteenth District congressional race. For example, the infamous "butterfly ballot" used in Palm Beach County, Florida in the 2000 presidential race caused fewer than 1% of the presidential votes cast in that election to be erroneously cast for the independent candidate Pat Buchanan. Moreover, because of pervasive problems with electronic voting machines during early voting in Sarasota County -- widely reported in the press before and on Election Day and in public statements by Sarasota County Supervisor of Elections Kathy Dent -- Sarasota County voters were alert to the risks of ballot confusion, and thus highly unlikely to have fallen victim to it.

25. As powerful as this statistical evidence is, it is far from the only indication that thousands of legal votes in Sarasota County simply were left out of the certified election results for the congressional race because of the failure of electronic voting machines. A variety of

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contemporaneous sources document widespread problems with the iVotronic electronic voting machines in Sarasota County. These documents, including both the statements of voters and contemporaneous records maintained by the Sarasota County Supervisor of Elections, identify a consistent pattern of voter difficulty in having their votes recorded in the House of Representatives race -- and not in other races on the ballot.

26. Plaintiff has obtained affidavits memorializing the eyewitness accounts of hundreds of Sarasota County voters attesting to their difficulties attempting to cast a vote for Christine Jennings in early voting and on Election Day on iVotronic electronic voting machines in Sarasota County. The following statements are representative of the memorialized eyewitness accounts of these hundreds of voters:

- “I went through the ballot making my selections on the Ivotronics touch screen voting machine and took my time making sure that I voted in every race. I am certain that I cast a vote for Christine Jennings. When I reviewed the ballot at the end of the voting process, I noted that the race for the 13th congressional district . . . indicated that I had made no selection. I double-touched the 13th Congressional District race and again cast my vote for Christine Jennings. . . . I have more than 15 years experience in selling computer systems, five of those years are in selling touch screen systems. Based on my experience, I believe there was a software bug in the voting machine software causing the software not to register the touch.”

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- “I took a sample ballot, which I had previously filled out and my intention to vote in every race. I believed that I voted for Christine Jennings but I came to the review screen it said I had not cast a vote in the Congressional race. . . . I used the back arrow and it took me back to Congressional race and I recorded a vote for Christine Jennings.”
- “When my husband and I voted on the iVotronics touch screen voting machines, I was told by a poll worker to be sure and check the District 13 Congressional race because several voters, even at that early hour, had complained that they had voted for Christine Jennings, but the summary page did not reflect their votes for Christine Jennings.”
- “When I voted on the iVotronics touch screen voting machine I touched the screen for Christine Jennings and it showed I voted for Christine Jennings. But when I reviewed the summary page at the end of the ballot, it did not show a vote for Christine Jennings or anyone else.”
- “There was no warning or mention of any problems however, I was aware there may be a problem with the Congressional vote based on various media reports. I went through the ballot and specifically remember voting for Christine Jennings. When I arrived at the review screen, there was no candidate selected for the Congressional vote. I called a poll worker over and explained the situation and she told me that I did not ‘press hard

enough' when selecting the vote and I then returned to the vote screen and recast my ballot, I then confirmed it on the review screen.”

- “When I voted on the touch screen voting machine I touched the screen voting for Christine Jennings and when I reached page 15, the summary page, it indicated that I had not voted for Jennings. I immediately called this to the attention of a poll worker who showed me how to go back and vote for Jennings. I followed her instructions and again voted for Jennings. It did appear on the summary screen this time and I hope was duly registered.”
- “When I voted on the ivotronics touch screen voting machine I touched screen and voted for Christine Jennings for U.S. Congress Florida District 13. When I reviewed my ballot before hitting the red button and actually voting, I saw the review screen did not show a vote for Christine Jennings. I was afraid I would lose my other votes if I tried to go back and correct the problem, so I then went ahead and cast my ballot without confirming that the machine had registered my vote for Christine Jennings.”
- “I attempted to vote for Christine Jennings in the District 13 race and experienced the following difficulties: I was well-aware of the difficulties in the early voting in District 13 race and so I carefully voted in each election on the ballot, including that race. When I got to the review page,

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my vote for Christine Jennings was not reflected. I called out to a poll worker to alert them that my vote in the District 13 race had not been recorded. The poll worker who came to assist me informed me that the same thing had happened to her when she had voted earlier. She guided me back to the District 13 page and I pressed the touch screen again to reflect my vote for Christine Jennings. The poll worker then guided me back to the review page where my vote in the District 13 race was reflected and I then pressed the vote button.”

- “When I voted on the ivotronics touch screen voting machine, I went through the ballot to vote. I was being careful because I seemed to have to press hard for my votes to register. In addition, I knew to be careful because my wife had been to vote previously and had overheard some women who had a problem voting discussing their problems with the machines. They were different machines. A neighbor also told me that she had encountered six different people who had a problem with the voting machines. When the review sheet came up it said that I had not voted in the Congressional race even though I knew I had voted for Christine Jennings. I went back and registered my vote again and this time it indicated that I had voted for Ms. Jennings on the review screen.”
- “When I voted with the stylus on the ivotronics touch screen voting machine, I am absolutely sure the box for Christine Jennings showed the

X. On the Review screen, however, Christine Jennings' name showed but the box beside her name was blank. I clicked on the review ballot and corrected my vote and it then showed an X beside her name. After that, I registered my vote with the Red button at the top of the screen. After voting, I asked my husband if anything unusual happened when he voted (on a different machine). He told me that when he reviewed his ballot, the box by Christine Jennings' name was blank and he had to correct it. At that time, I reported this to a poll worker named Charlie, who said he would report it.

- “I had heard prior to going to the poll that there were problems with the voting machines. When I went to vote, the poll worker also warned me that there had been problems with the machine registering the Congressional race. When I voted on the ivotronics touch screen voting machine, I voted for Christine Jennings. The screen indicated I had voted. Yet when I got to the end, the review page indicated that I had not voted in the Congressional race. I went back and voted for Ms. Jennings. This time my vote did register on the voting page.”
- “When I voted on the iVotronics machine I was being very methodical. When I voted in the Buchanan-Jennings race, I specifically voted for Christine Jennings and checked to make sure that the box was checked before I went to the next page. When I got to the review screen it

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reflected no vote was cast for the Congressional race, but both candidates' names were shown. All of my other selections were properly recorded. I touched where it said no vote had been cast and it took me back to the Buchanan-Jennings race. I then re-voted for Christine Jennings and carefully rechecked the review page three times. I then pushed the vote button. No report was made to the poll worker. Prior to voting, the poll worker recommended that I check the review page before casting my final ballot. I am a registered Republican and I believe these machines failed democracy.”

- “I voted on the iVotronics machine I took my time to be sure I did not make any errors. When I voted in the Buchanan-Jennings race, I specifically voted for Christine Jennings and checked to make sure the box was checked before I went to the next page. When I got to the review screen it reflected no vote was cast for the Congressional race. All of my other selections were properly recorded. I touched where it said no vote had been cast and it took me back to the Buchanan-Jennings race. I then re-voted for Christine Jennings and I then pushed the vote button. “
- “When I voted on the ivotronics touch screen voting machine I touched the screen for Christine Jennings and it showed I voted for Christine Jennings. But when I reviewed the summary page at the end of the ballot, it not only failed to show a vote for Christine Jennings, but the only name

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to appear on the review page was Christine Jennings, next to a blank box indicating no vote had been cast. I called a poll worker over and explained what had happened and the poll worker pulled back the page for the Congressional race. I revoted for Christine Jennings, and my vote appeared to register in my second review of the summary screen.”

- “When I voted on the touch screen voting machine I encountered two problems with the machine. First, after I had voted for Christine Jennings on the top of the second screen, when I pushed my selection for Jim Davis for Florida Governor next, the “X” on the computer screen came up indicating that I had voted for Charlie Crist. I called a poll worker, advised her of the problem and she showed me how to change my vote to Jim Davis. I then proceeded to vote on every race I saw on the ballot. When I got to the review screen, it showed Christine Jennings name, but unlike all the other names and races on the review screen, there was no X in the box next to Christine Jennings’ name. I am certain that I had initially cast a vote for Christine Jennings as my two main purposes in voting were to vote for Christine Jennings for Congress and Jim Davis for Florida Governor. I again called a poll worker who told me to hold my finger down on the box next to Christine Jennings name on the review screen until the X came up. I did so and then pushed the ‘Vote’ button.”

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- “When I arrived at the polls I was warned by a poll worker that some votes from ‘page 2’ were not being registered. I waited on line for 45 minutes to vote and when I returned home, informed my wife of what I had been warned.”
- “I had heard earlier media reports and was aware that there were some problems with the machines. When I arrived, I specifically asked if there had been problems and I was told no issue or problems had arisen. I voted for Christine Jennings on a touch screen and when I arrived at the review page the Congressional vote was left blank. I called a poll worker over at that time and she showed me how to move back and I re-cast my vote for Christine Jennings. On the final review page, I confirmed my vote was cast. I approached a poll worker to complain about the situation and filled out a complaint card.”

27. These eyewitness accounts, and hundreds of others like them, attest to pervasive difficulties in the recording of votes in the Thirteenth District congressional race. Although many of these voters believed that they were able eventually to overcome the machine difficulties and cast a recorded vote for Plaintiff Christine Jennings, the problems the iVotronic machines exhibited in recording the legal votes of these and thousands of other voters provide substantial grounds for doubting whether the votes were in fact counted. The information voters see on the touch-screen of an electronic voting machine when they cast their votes is stored in the machine’s temporary, volatile computer memory. A permanent record of a vote is made only

when -- upon pressing the "Vote" button -- the voter's recorded preference is transferred from the temporary volatile memory on the computer to permanent nonvolatile memory. If, as the statistical evidence suggests is overwhelmingly likely, a software "bug" or other malfunction disrupts or prevents the transfer of the recorded legal vote from temporary to permanent memory, the voter may well see a vote cast for Jennings on his or her review screen even though no permanent record of the vote is ever recorded.

28. Poll watchers also reported their observations of widespread occurrences of voters being unable to have their votes in the congressional race recorded by iVotronic electronic voting machines. One poll watcher reported as follows: "There were seven ivotronics touch screen voting machines at the precinct where I was watching the voters. Two of the ivotronics touch screen voting machines stopped working while I was watching the voters. After an hour or so, one was repaired and put back into service. The other was put back into use without repair except that the poll workers instructed voters to hold their finger on the touch screen for more time, rather than just touch [the] screen to get the vote to register. I heard several voters tell poll workers the ivotronics touch screen voting machine was not recording their vote."

29. Contemporaneous official "Incident Report Forms" of the Sarasota County Supervisor of Elections likewise document widespread occurrences of voters having great difficulty in having the iVotronic electronic voting machines record their votes in the Thirteenth District race. Numerous such forms noted that iVotronic electronic voting machines were "not recording votes." One report from a particular precinct noted that a "voter voted on screen -- didn't show up on review . . . asked poll worker for help . . . [c]ancelled ballot and moved to another machine," and went on to observe "more than one [voter] with trouble on machine." Another incident report observed that "[e]very other voter is complaining about the Christine

Jennings contest not coming up.” Indeed, these incident reports document multiple instances of frustrated voters telling election officials at the polling places that “voting machine[s] would not let her vote for Jennings.”

30. Other contemporaneous official forms maintained by the Sarasota County Supervisor of Elections similarly document that iVotronic electronic voting machines used in the County were not recording the votes that voters had cast. Machines were taken out of service on Election Day because they were “slow to respond to touch” or “required a hard/extended touch before [a] vote was recognized,” or because they were “not recording some votes [and] the touchscreen was not working properly -- hard to record vote, needed to push hard and juggle to record vote,” or because they were “not accepting votes.” Technical support personnel reported receiving “several complaints that voters make selections that do not appear on the summary screen” and that “the selection has to be highlighted . . . two or three times before the summary page reflected the suggestions.” Other reports indicate that “voters reported making a selection but the selection did not appear on the review screen,” requiring further corrective action by the voter, and that particular machines “miss[] selections on some pages.” One report by a Sarasota County technical support person indicated that a particular electronic voting machine “will not register votes no matter how hard you press screen.”

31. Significantly, the records of the Sarasota County Supervisor of Elections document that election officials were on clear notice, as a result of the extreme difficulties many voters encountered during the early-voting phase, that the iVotronic electronic voting machines were malfunctioning with respect to the Thirteenth District congressional race. Nevertheless, the County election officials do not appear to have taken *any* steps to correct the serious machine problems in advance of Election Day.

32. This machine-induced failure had significant, indeed, determinative, effects on the outcome of the election for the Thirteenth District congressional seat. Preliminary statistical analysis (based on the undervote rates for the election in Sarasota County absentee ballots, and in other counties) indicates that more than 14,000 Sarasota County voters (the differential over and above the expected undervote rate) cast legal ballots but failed to have their legal votes recorded. Given that the certified election results give Defendant Buchanan a lead of only 369 votes, and given that Plaintiff Jennings carried Sarasota County while Defendant Buchanan carried the rest of the district, the failure to include 14,000 or more votes in the final tally places the outcome of the election into grave doubt. Indeed, preliminary statistical analysis indicates that inclusion of these 14,000 or more Sarasota County votes would change the outcome of the election, because the Sarasota County voters whose votes were recorded in the election favored Plaintiff Christine Jennings by a significant margin.

Count I

33. Plaintiff realleges paragraphs 1 - 32.

34. As a result of the failure of iVotronic electronic voting machines to record all legal votes cast in the Thirteenth District congressional race in Sarasota County, thousands of votes legally cast in that race were not included in the vote totals certified by the Elections Canvassing Commission on November 20, 2006. The failure to include these votes constitutes a rejection of a number of legal votes sufficient to place in doubt, and likely change, the outcome of the election.

35. Given the extremely narrow margin of 369 votes in the certified election results, it is self-evident that the number of uncounted legal votes in Sarasota (which preliminary statistical

analysis reveals to be at least 14,000) is sufficient to place in doubt, and likely change, the outcome of the election.

36. Given the relative percentages of the actual votes cast in Sarasota County in the Thirteenth District election, it is likely that including the uncounted legal votes cast in Sarasota County would change the outcome of the election and result in a victory for Plaintiff Christine Jennings.

37. Therefore, under Section 102.168, Florida Statutes, Plaintiff Christine Jennings is entitled to prevail in this contest action, and should be awarded all appropriate relief.

Prayer for Relief

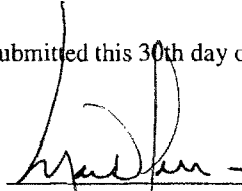
Wherefore, Plaintiff prays that the Court:

1. Advance this matter on the Court's docket.
2. Order immediate discovery, including discovery of the source code to the ES&S iVotronic voting system with all county-specific election-definition files and ballot programming modifications, which is necessary to determine conclusively the cause of the massive undervote in Sarasota County.
3. Convene a status conference promptly to establish an expeditious schedule for completing discovery and conducting a hearing.
4. Set this matter for a prompt hearing pursuant to Section 102.168(7), Florida Statutes.
5. Order the Elections Canvassing Commission to declare void the results of the 2006 general election for Representative from Florida's Thirteenth Congressional District.

6. Order the Elections Canvassing Commission to decertify Vern Buchanan as the winner of the 2006 general election for Representative from Florida's Thirteenth Congressional District. *See Fla. Stat. § 102.1682.*
7. Enter a finding that Plaintiff is entitled to the office of Representative from Florida's Thirteenth Congressional District, Section 102.1682, Florida Statutes, or, in the alternative, declare the congressional seat for Florida's Thirteenth Congressional District vacant such that a special election shall take place pursuant to Sections 100.101(1) and 100.111(3), Florida Statutes, or order a new election to determine the winning candidate for the United States House of Representatives seat.
8. Order all other appropriate relief, including an award of fees and costs.

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Respectfully submitted this 30th day of November, 2006 by:



COUNSEL FOR PLAINTIFF

Kendall Coffey
Florida Bar No. 259861
COFFEY & WRIGHT, LLP
2665 South Bayshore Dr.
PH-2, Grand Bay Plaza
Miami, FL 33133
Telephone: (305) 857-9797
Facsimile: (305) 859-9919
E-mail: kcoffey@coffeywright.com

Mark Herron
Florida Bar No. 199737
MESSER, CAPARELLO & SELF, P.A.
2618 Centennial Place
Tallahassee, Florida 32308
Telephone: (850) 222-0720
Facsimile: (850) 558-0659
E-mail: mherron@lawfla.com

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CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing was delivered by
facsimile or electronic transmission and by U.S. mail on this 30th day of November, 2006, to:

Peter Antonacci
Allen C. Winsor
GrayRobinson, P.A.
301 South Bronough Street, Suite 600
P.O. Box 11189
Tallahassee, FL 32302
Telephone: (850) 577-9090
Facsimile: (850) 577-3311
E-mail: pva@gray-robinson.com
awinsor@grayrobinson.com
*Attorneys for Defendants Election
Canvassing Commission,
Sue Cobb, and Dawn Roberts*

Hayden R. Dempsey
Glenn T. Burhans, Jr.
Greenberg Traurig, P.A.
101 East College Avenue
Tallahassee, FL 32301
Telephone: (850) 222-6891
Facsimile: (850) 681-0207
E-mail: dempseyh@gtlaw.com
burhansg@gtlaw.com
Attorneys for Defendant Vern Buchanan

Ronald A. Labasky
Young Van Assenderp, P.A.
225 South Adams Street
Tallahassee, FL 32302
Telephone: (850) 222-7206
Facsimile: (850) 561-6834
E-mail: rlabasky@yvlaw.net
*Attorney for Defendants Sarasota
Canvassing Board and
Supervisor Kathy Dent*

Muslima Lewis
Randall C. Marshall
ACLU FOUNDATION OF FLORIDA, INC
4500 Biscayne Boulevard, Suite 340
Miami, FL 33137-3227
Telephone: (786) 273-2729
Facsimile: (786) 363-1448
E-mail: mlewis@aclufl.org
rmarshall@aclufl.org
Attorneys for Fedder Plaintiffs

Lowell Finley
VOTER ACTION
1604 Solano Avenue
Berkeley, CA 94707
Telephone: (510) 318-2248
Facsimile: (415) 723-7141
E-mail: lfinley@wwc.com
Attorney for Fedder Plaintiffs

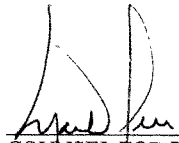
Rebecca Harrison Steele
Zeina N. Salam
ACLU FOUNDATION OF FLORIDA, INC
West Central Florida Office
P.O. Box 18245
Tampa, FL 33679-8245
Telephone: (813) 254-0925
Facsimile: (813) 254-0926
E-mail: rsteele@aclufl.org
zsalam@aclufl.org
Attorneys for Fedder Plaintiffs

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Elliot M. Mincberg
Judith E. Schaeffer
PEOPLE FOR THE AMERICAN WAY
FOUNDATION
2000 M Street N.W. #400
Washington, D.C. 20036
Telephone: (202) 467-4999
Facsimile: (202) 293-2672
E-mail: emincberg@pfaw.org
jschaeffer@pfaw.org
Attorneys for Fedder Plaintiffs

Reginald J. Mitchell
PEOPLE FOR THE AMERICAN WAY
FOUNDATION
1550 Melvin Street
Tallahassee, FL 32301
Telephone: (850) 877-0307
Facsimile: (850) 402-1999
E-mail: rmitchell@pfaw.org
Attorney for Fedder Plaintiffs

Cindy A. Cohn
Matthew J. Zimmerman
ELECTRONIC FRONTIER FOUNDATION
454 Shotwell Street
San Francisco, CA 94110
Telephone: (415) 436-9333 x127
Facsimile: (415) 436-9993
E-mail: cindy@eff.org
mattz@eff.org
Attorneys for Fedder Plaintiffs


COUNSEL FOR PLAINTIFF
Kendall Coffey
Florida Bar No. 259861
COFFEY & WRIGHT, LLP
2665 South Bayshore Dr.
PH-2, Grand Bay Plaza
Miami, FL 33133
Telephone: (305) 857-9797
Facsimile: (305) 859-9919
E-mail: kcoffey@coffeywright.com

Mark Herron
Florida Bar No. 199737
MESSER, CAPARELLO & SELF, P.A.
2618 Centennial Place
Tallahassee, Florida 32308
Telephone: (850) 222-0720
Facsimile: (850) 558-0659
E-mail: mherron@lawfla.com

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IN THE CIRCUIT COURT
OF THE SECOND JUDICIAL
CIRCUIT, IN AND FOR
LEON COUNTY, FLORIDA

CASE NO. 2006-CA-2973
Consolidated with 2006-CA-2996

CHRISTINE JENNINGS, nominee
of the Democratic Party for
Representative in Congress
from the State of Florida's
Thirteenth Congressional District,

Plaintiff,

vs.

VOLUME 1,
Pages 1 - 169

ELECTIONS CANVASSING COMMISSION
OF THE STATE OF FLORIDA,
consisting of Governor Jeb Bush,
Chief Financial Officer Tom
Gallagher and State Senator
Daniel Webster, et al.,

Defendants.

IN RE: Pending Motions

BEFORE: HONORABLE WILLIAM L. GARY

DATE: Tuesday, December 19, 2006

TIME: Commenced at 1:15 p.m.
Terminated at 5:00 p.m.

PLACE: Courtroom 2F
Leon County Courthouse
Tallahassee, Florida

REPORTED BY: SARAH B. GILROY, RPR, CRR
Notary Public in and for
the State of Florida at
Large

1 APPEARANCES:

2 REPRESENTING THE PLAINTIFF JENNINGS:

3 KENDALL COFFEY, ESQUIRE
4 Coffey & Wright
5 2665 South Bayshore Drive
6 PH-2 Grand Bay Plaza
7 Miami, Florida 33133

8 MARK HERRON, ESQUIRE
9 Messer, Caparello & Self
10 2618 Centennial Place
11 Tallahassee, Florida 32308

12 SAM HIRSCH, ESQUIRE
13 JESSICA RING AMUNSON, ESQUIRE
14 Jenner & Block
15 601 Thirteenth Street NW
16 Suite 1200 South
17 Washington, DC 20005

18 REPRESENTING THE FEDDER PLAINTIFFS:

19 LOWELL FINLEY, ESQUIRE
20 1604 Solano Avenue
21 Berkeley, California 94707

22 MATTHEW ZIMMERMAN, ESQUIRE
23 454 Shotwell Street
24 San Francisco, California 94110

25 REGINALD J. MITCHELL, ESQUIRE
1550 Melvin Stret
Tallahassee, Florida 32301

REBECCA HARRISON STEELE
ACLU West Central Florida Office
Post Office Box 33679-8245
Tampa, Florida 33679-8245

1 REPRESENTING THE STATE DEFENDANTS:
PETER ANTONACCI, ESQUIRE
2 ALLEN C. WINSOR, ESQUIRE
GrayRobinson
3 301 South Bronough Street, Suite 600
Tallahassee, Florida 32301
4

5 REPRESENTING THE SARASOTA COUNTY DEFENDANTS:
STEPHEN E. DeMARSH, ESQUIRE
6 FREDERICK J. ELBRECHT, ESQUIRE
Office of the County Attorney
7 1660 Ringling Boulevard, 2nd Floor
Sarasota, Florida 34236
8

9 REPRESENTING KATHY DENT:
RONALD A. LABASKY, ESQUIRE
10 Ronald A. Labasky, P.A.
Post Office Box 669
11 Tallahassee, Florida 32302

12 REPRESENTING ES&S:
13 HARRY O. THOMAS, ESQUIRE
JEFFREY L. FREHN, ESQUIRE
14 Rady, Thomas, Yon & Clark
301 South Bronough Street, Suite 200
15 Tallahassee, Florida 32301

16 MIGUEL A. DeGRANDY, ESQUIRE
STEPHEN CODY, ESQUIRE
17 Miguel DeGrandy, P.A.
800 S. Douglas Road, Suite 850
18 Coral Gables, Florida 33134

19 REPRESENTING VERN BUCHANAN:
20 GLENN T. BURHANS, JR., ESQUIRE
HAYDEN R. DEMPSEY, ESQUIRE
21 ADAM LANDA, ESQUIRE (member of the New York Bar)
Greenberg Traurig
22 101 East College Avenue
Tallahassee, Florida 32301
23
24
25

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1 THE COURT: Be seated, please. Good
2 afternoon.

3 MR. BURHANS: Good afternoon, Your Honor.
4 Glenn Burhans. We have a brief housekeeping issue
5 relating to today's hearing that I would like to
6 address.

7 THE COURT: Excuse me now?

8 MR. BURHANS: We have a brief housekeeping I
9 would like to address with you. Adam Landa, a law
10 partner of mine, admitted to practice in New York
11 and a member of good standing in that bar is also a
12 computer programmer. Mr. Landa has been assisting
13 in advising us on technical matters in this
14 lawsuit.

15 And we have a unique situation, because
16 Mr. Landa is also a resident of Florida. He's
17 recently moved here. He is in the process of
18 applying for admission to the Florida Bar, and he
19 will have the pleasure of sitting for the bar exam
20 in February.

21 That being the case, he cannot apply for
22 admission pro hac vice in this matter. However, we
23 would like to avail ourselves of his assistance in
24 the examination of the technical issues, and to the
25 extent necessary, providing legal argument on

1 technical issues to the court, if that is
2 necessary.

3 I've conferred with counsel in this matter,
4 and there is no opposition to our request. So we
5 ask that you allow Mr. Landa to participate in the
6 proceedings in this case, in the technical advisory
7 capacity that I've outlined with respect to
8 examining technical witnesses and, if necessary,
9 making technical argument.

10 THE COURT: Objection, counsel?

11 (All respond "no objection.")

12 THE COURT: Fine.

13 MR. BURHANS: Thank you, Your Honor.

14 THE COURT: As I understand it, we're here
15 this afternoon, anyway, to consider the motions to
16 compel, motions for protective order and -- which
17 are all basically the same thing. And we're here
18 on the limited issue of reasonable necessity for
19 ES&S to produce trade secret materials. Is that
20 your understanding?

21 (All respond affirmatively).

22 THE COURT: Ready to proceed?

23 MR. HERRON: Yes, Your Honor, we are. Again,
24 one or two housekeeping issues before we proceed,
25 Your Honor. Counsel has discussed whether to

1 invoke the rule in this case. And we've agreed not
2 to.

3 MR. DeGRANDY: Correct.

4 MR. HERRON: That the experts can remain in
5 the hearing and listen to the other experts
6 testify. We've also, among ourselves, agreed that
7 each party could make -- would make an opening
8 statement to the court, if that's all right with
9 the court.

10 THE COURT: That's fine.

11 MR. HERRON: They would not exceed 15 minutes.

12 THE COURT: All right.

13 MR. HERRON: I'm going to make the opening
14 statement on behalf of the Jennings plaintiff.

15 THE COURT: All right.

16 MR. HERRON: We're here today, Your Honor, on
17 a motion by Christine Jennings to compel production
18 of source code from ES&S relating to iVotronic
19 Voting Systems, its Unity Software Suite and its
20 personal electronic ballots or PEBs, which were
21 used in the November 2006 general election in
22 Sarasota County.

23 The issues addressed in this hearing will
24 likewise be applicable to our motion to compel the
25 production of the voting machines themselves that

1 were used in Sarasota County. Source code is
2 programming statements and instructions written by
3 a programmer, which, when converted into machine
4 readable language, tells the computer what to do in
5 a certain situation or in a myriad of situations.

6 The state defendants have refused to provide
7 this information in response to our request to
8 produce, asserting that it is a trade secret which
9 belongs to ES&S. ES&S has been made a party to
10 these proceedings so that it may assert its
11 interests with respect to the source code, which it
12 has done.

13 ES&S has asserted that the source code and its
14 machines and basically everything associated with
15 its voting system, is a trade secret. In fact, all
16 parties to this proceeding have conceded for the
17 purposes of these motions that this information is
18 a trade secret.

19 The trade secret privilege is not absolute.
20 In each case the court must weigh the importance of
21 protecting the trade secret against the interests
22 in facilitating the trial and promoting the just
23 end to the litigation. The issue before the court
24 today is whether the plaintiffs can establish
25 reasonable necessity to compel production of the

1 source code; and if so, what protective measures
2 will adequately protect the interests of ES&S.

3 In making this determination, we suggest that
4 the court consider the following factors: The
5 necessity of the disclosure to the presentation of
6 the plaintiff's case and the potential impact of
7 the disclosure on ES&S's business.

8 Defendant ES&S, in its memorandum that it
9 submitted to the court, agrees that these are the
10 factors to be considered in this case.

11 With respect to the necessity of disclosure,
12 the source code is relevant to the issues in this
13 proceeding. Christine Jennings has alleged in her
14 amended complaint that the ES&S touch screen voting
15 system that was used at the general election in
16 November 2006 in Sarasota County recorded 18,380
17 undervotes in the District 13 race for Congress.

18 In percentage terms, this translates into an
19 undervote rate of 14.9 percent, which means that
20 the electronic voting system failed to record the
21 votes of approximately one out of every seven
22 voters in Sarasota County with respect to this
23 race. The amended complaint further alleges that
24 these undervotes were caused by the failure of the
25 electronic voting system to record all the legal

1 votes that were cast in the race.

2 An examination of the source code for the ES&S
3 iVotronic Voting System, as will be explained by
4 Charles Stewart and Dan Wallach in our evidentiary
5 presentations to the court, is necessary to
6 determine and prove, in this contest proceeding,
7 that the electronic voting system failed to record
8 the votes of a number of voters sufficient to place
9 in doubt or to change the results of the election.

10 We recognize that the other parties may have
11 different theories or explanations for the results
12 of the election. They may -- they are entitled to
13 present their theories and explanations at trial.
14 They are not appropriate here on this motion to
15 compel.

16 With respect to the potential impact on ES&S,
17 plaintiffs do not seek this information for
18 commercial advantage. Plaintiffs do not seek this
19 information in order to recover monetary damages.
20 Rather, plaintiffs seek this information to assure
21 the results of an election of a member of the
22 Congress of the United States.

23 The ultimate party in interest in this
24 proceeding is not ES&S. It's not the candidates.
25 It's not the state or county defendants, but rather

1 it's the voters of Congressional District 13. It
2 was their votes that were not counted.

3 While disclosure of this information impacts
4 the business interests of ES&S, such impact pales
5 in significance to the interests of the voters of
6 District 13 that their votes be counted accurately
7 and recorded accurately.

8 Plaintiffs do not seek to disclose ES&S's
9 source code to the world or to the competitors of
10 ES&S. Rather, they seek to determine whether there
11 was a defect or flaw in the source code, which led
12 to the disenfranchisement of thousands of voters in
13 Sarasota County by recording an undervote, when in
14 fact these voters voted for one of the candidates.
15 It is that simple.

16 Defendant ES&S argued that disclosure of the
17 trade secret to plaintiff or to plaintiffs could
18 result in harm to their reputation. But the
19 purpose of the trade secret's privilege is not to
20 protect a company's reputation, it is to protect
21 the secrets themselves.

22 The reputation of ES&S will rise or fall based
23 on examination of what actually happened in this
24 election and not on the disclosure of the secret in
25 the manner proposed by the plaintiffs. Plaintiffs

1 have submitted a draft protective order to this
2 court and to ES&S in an effort to assure the court
3 and ES&S that it intends to use the source code
4 only to determine and prove in this case that the
5 electronic voting system failed to record the votes
6 of a number of voters sufficient to place in doubt
7 or change the results of the election. This is the
8 test under the contest statute.

9 Plaintiff and her experts are more than
10 willing to abide by the terms of this protective
11 order or any appropriate order this court may
12 impose. It is defendant's burden to show that,
13 even with an appropriate protective order, they
14 would still suffer harm. This they cannot do.

15 As the evidence will show, plaintiffs have a
16 reasonable necessity for the production of source
17 code from ES&S relating to its iVotronic Voting
18 System, its Unity Software Suite, it's iVotronic
19 voting machines, and its personal electronic
20 ballots, or PEBs, which were used in the November
21 2006 general election in Sarasota County. Thank
22 you, Your Honor.

23 MR. FINLEY: Lowell Finley for the voter
24 plaintiffs in the federal case that's consolidated
25 here, case number 2996. I will speak just briefly,

1 not to repeat anything that Mr. Herron has stated.
2 Mr. Herron properly points out that it is the
3 voters who were harmed by the loss of 18,000 votes
4 by an electronic voting system in this case.
5 Indeed the Florida courts have recognized this in
6 the Boardman vs. Esteva decision, the court noted
7 that in an election contest, the real parties in
8 interest are the voters and said, quote, they are
9 possessed of the ultimate interests, and it is they
10 whom we must give primary consideration.

11 The defendants in this case have taken a
12 consistent line, and that is to hold the voting
13 machines blameless while blaming the voters. The
14 most recent outrageous and deplorable instance of
15 this comes in the form of the first set of
16 interrogatories that were served on the voter
17 plaintiffs last Friday by the state defendants;
18 that is, the secretary of state, Governor Bush and
19 the other members of the election canvassing
20 commission.

21 I would like to read to the court two of those
22 interrogatory questions. Number 15: Do you wear
23 glasses, contact lenses or hearing aids; if so, who
24 prescribed them? When were they prescribed? When
25 were your eyes or ears last examined, and what is

1 the name and address of the examiner?

2 Number 16: Did you consume any alcoholic
3 beverages or take any drugs, prescribed or not, or
4 medications within 12 hours before the time you
5 voted in the November 2006 general election? If
6 so, state the type and amount of alcoholic
7 beverages, drugs, prescribed or not, or medication
8 which were consumed and when and where you consumed
9 them.

10 Your Honor, this is not a car accident case.
11 This is a case about 18,000 votes having been lost
12 by an electronic voting system. And for any
13 defendant to suggest that the explanation for that
14 gross failure of the system lies in the possible
15 compromised state of a handful of individual voters
16 I believe is truly offensive, but more importantly,
17 reflects an underlying attitude that pervades the
18 defendant's approach to the case. And I think
19 that's part of what's at issue here today.

20 The notion that plaintiff voters should be
21 subjected to this sort of intrusive discovery,
22 while the plaintiffs are denied access to obviously
23 relevant and necessary information in order to be
24 able to make out their case I think is a disparity
25 that speaks for itself. The burden of proof here

1 for both the voter plaintiffs and for Ms. Jennings
2 is to establish the reasonable necessity of gaining
3 access to the source code and the other information
4 that ES&S has claimed is subject to trade secret
5 protection.

6 All necessary protection for that trade secret
7 status is provided in the protective order that has
8 been jointly proposed by the plaintiffs in the two
9 cases. And I believe that the evidence to be
10 presented in this hearing will establish beyond any
11 doubt the reasonable necessity of the plaintiffs
12 being allowed access to that information. Thank
13 you.

14 MR. DeGRANDY: Good afternoon, Your Honor. My
15 name is Miguel DeGrandy. I represent Election
16 Systems and Software. Your Honor, with all due
17 respect, much has been said by the plaintiffs about
18 who is represented in this matter and what this
19 case is all about, and therefore within the time
20 allotted for our opening statement, I wanted to
21 take a moment to put this case, and particularly
22 the proceedings today, in perspective.

23 Your Honor, we're not here to have a political
24 debate about paper trails, about verifiable voting
25 systems. The forums to make those arguments are

1 across the street from Your Honor's courthouse.
2 This case is only about an election contest in the
3 13th congressional district. And the motions that
4 are the subject of this hearing present a narrow
5 issue as to whether a private party, under these
6 circumstances, should have a right to defeat the
7 statutory rights afforded to my client and the
8 interests of the people of the state of Florida in
9 maintaining exclusive access to certain sensitive
10 information within state agencies in order to
11 preserve the integrity and security of its election
12 systems.

13 Now let's take a moment to discuss the parties
14 in this matter before we proceed to frame the
15 issues, Your Honor. I represent an equipment and
16 technology provider that is not a proper party in
17 an election contest. My client has been brought
18 into this matter as a party to induce this court to
19 find that well settled evidentiary standards with
20 respect to production of trade secrets don't apply
21 in this case.

22 Now the plaintiffs have told you that in the
23 context of this lawsuit they represent, and I quote
24 from a previous proceeding, the voters of Sarasota
25 County, unquote. I dare say that they do not

1 represent the tens of thousands of voters that cast
2 their votes and want their votes to be recorded,
3 because what they want is to have that election
4 overturned.

5 Indeed they have inferred that they may
6 represent the people of the state of Florida and
7 the nation in this matter. Now, respectfully, Your
8 Honor, the last time I checked, none of the learned
9 counsel on the plaintiff's side were elected by the
10 people for that purpose. And the last time I
11 checked, Your Honor, I saw no order executed by
12 this court certifying a class action in this
13 matter.

14 To my knowledge, the only parties entrusted by
15 law and by the people to represent their interests
16 are the state defendants in this case.

17 So let me take a moment to talk about who the
18 plaintiffs do represent, because it is relevant to
19 the balancing of interest that Your Honor must
20 ultimately undertake in deciding the issues
21 presented in today's motion. The Fedder plaintiffs
22 represent the Fedder plaintiffs. However, they are
23 represented in -- by and aligned with special
24 interest political organizations that have a
25 well-defined political agenda adverse to DRE

1 Electronic Voting Systems.

2 Mr. Coffey and his colleagues represent a
3 client who lost in a close election. And as Your
4 Honor knows, this is not the first election contest
5 that has been tried in this courthouse, nor will it
6 be the last as long as human beings are in charge
7 of Florida's elections. If I may, Your Honor, I
8 would respectfully tell you that more than anyone
9 in this courtroom today, I know exactly how
10 Ms. Jennings feels, because I lost my first
11 election to the Florida House of Representatives by
12 one vote.

13 Now unlike Ms. Jennings, I didn't sue anyone.
14 I ran again and won. But it took me years to come
15 to terms with the fact that what happened in that
16 election is that I simply lost a close election in
17 an open, democratic process. That is what has
18 happened here today.

19 Let me try to take a few minutes to frame the
20 legal issues. We are here on a motion to compel
21 disclosure from the state of certain proprietary
22 technology that is held by them under a licensing
23 agreement. In the case of the source codes, it is
24 held in escrow, pursuant to a legislative mandate.
25 And the instant lawsuit and the motion to compel

1 are the result of a congressional election in which
2 there was a high undervote percentage in one
3 county, comprised -- and that is part of that
4 congressional district.

5 To date the plaintiffs have produced no
6 evidence that they challenged the ballot layout
7 prior to the election. They have produced no
8 evidence that they challenged the results of the
9 logic and accuracy testing performed on this
10 equipment prior to the election. All this
11 information was published to all candidates, as
12 well as the general public.

13 What the plaintiffs have presented are bare
14 bones allegations, unreliable anecdotal evidence
15 and two expert declarations. In regard to the
16 anecdotal statements, the evidence will show that
17 one of the plaintiff's own experts has stated that
18 this type of evidence is not reliable, because in
19 Professor Wallach's words, quote, participants may
20 lie to best support their candidates of preference,
21 unquote.

22 Putting that aside, the evidence will show
23 that these types of declarations are also
24 inherently unreliable because there is a
25 significant likelihood that honest, well-meaning

1 individuals, who believe they made a specific
2 choice, are prone to have made a mistake. Indeed
3 in the parallel test that will be presented as
4 evidence in this hearing, Your Honor will see that
5 even election department volunteers, who were given
6 a script of votes to cast and knew exactly the
7 purpose of the test, made mistakes.

8 Turning to the experts' declarations, the
9 evidence will demonstrate that the opinions they
10 set forth are mere academic speculation. These
11 experts do not present a specific theory as to why
12 the equipment may have malfunctioned. They merely
13 speculate that the high undervote rate may indicate
14 that a malfunction might have occurred.

15 Respectfully, well-settled Florida law
16 requires more than this showing in order to defeat
17 the rights of the holder of the trade secret, and
18 in this case, the interest of the state in
19 maintaining the security and integrity of its
20 election systems.

21 In regards to the legal standards in this
22 case, plaintiffs have argued to this court that the
23 quantum of proof necessary to obtain the requested
24 discovery is extremely low. And they are wrong.
25 As discussed in our prehearing memorandum, Florida

1 courts have held that the party seeking production
2 of trade secrets must show a reasonable necessity
3 to obtain the information, and this must be proven
4 by a preponderance of the evidence. Florida courts
5 have clarified that, even if there were some
6 necessity to review trade secret information, the
7 parties seeking production must first show that the
8 necessity for this privileged information outweighs
9 the harm that disclosure will cause to the trade
10 secret owner.

11 Now the plaintiffs have argued to you that no
12 conceivable harm could result from disclosure of
13 this proprietary information to these plaintiffs,
14 because they are not competitors of ES&S. That
15 argument, Your Honor, is disingenuous at best. The
16 plaintiff's numerous public statements demonstrate
17 that they have a well-defined political agenda that
18 seeks to eliminate the use of DRE electronic voting
19 systems in the state of Florida and other
20 jurisdictions.

21 It is clear that disclosure to these
22 particular private parties has as much, if not more
23 potential for irreparable harm than disclosure to
24 an ES&S competitor.

25 Now the case law is also clear that, prior to

1 making a decision on whether to allow review of
2 trade secret information, the court must conduct an
3 evidentiary hearing, which is what we're here for
4 today. Let's discuss what that evidence will show
5 in this case.

6 The evidence will show that on many occasions
7 Florida's election systems have been thoroughly
8 tested. For example, we will present evidence
9 regarding the process and requirements for
10 certification of voting equipment. In effect, the
11 equipment software and source code are thoroughly
12 reviewed in order to achieve federal and state
13 certification.

14 Before any election is conducted, certified
15 voting systems must also undergo additional
16 examinations, including logic and accuracy testing,
17 to verify that the machines and software are
18 working properly. These tests were performed prior
19 to the machines being utilized for this specific
20 election.

21 The tests were advertised, and the candidates
22 as well as the public were allowed to observe. In
23 the instant matter, because it was a close
24 election, additional postelection tests were
25 conducted on November 28th and December 1st of

1 2006. These are the same parallel tests that
2 plaintiffs have stated in their papers that were
3 needed to be conducted with our equipment and
4 software to determine whether they function
5 appropriately.

6 Pursuant to Your Honor's directive, both
7 candidates were allowed access and input in
8 conducting those tests. In fact, they were even
9 allowed to choose the machines that would be used
10 in the December 1st test.

11 And both of these tests demonstrated that the
12 machines were functioning exactly as designed, and
13 that there was no malfunction. In fact, let me
14 quote some of the findings detailed in the state's
15 report of the parallel test results, which was
16 released today. Quote: The parallel tests were
17 successful in demonstrating 100 percent accuracy in
18 recording the vote selections.

19 Another quote: There are no indications of
20 machine bias or otherwise voting machine faults
21 that would yield rejected legal votes. Final
22 quote: In summary, there is no evidence to support
23 the position that the iVotronic touch screens
24 caused those to be lost, unquote.

25 Finally, Your Honor, the state is now in the

1 process of finalizing the protocols and procedures
2 to conduct their independent source code review by
3 well-qualified, independent experts. To the extent
4 that a source code review may be necessary in this
5 case, we respectfully submit that in balancing the
6 state's interests and my client's legitimate
7 statutory protected right in maintaining
8 confidential, the state's upcoming review should be
9 the only source code review allowed in this matter.

10 As we stated in our papers, Your Honor, to the
11 extent that Your Honor would like to see an
12 additional layer of redundant review and
13 independence in this upcoming source code review,
14 we would have no objection to this court appointing
15 an independent expert for such purpose that would
16 report directly to this court under the
17 requirements of a protective order.

18 Now the plaintiffs will probably tell you that
19 the federal and state certification standards are
20 woefully inadequate, that the independent testing
21 associations that are certified to conduct these
22 reviews for the government entities are
23 incompetent, that the elections officials that
24 supervise both the pre-election and postelection
25 testing simply don't know what they're doing, and

1 that only a review by these plaintiffs and their
2 experts can be considered reliable.

3 In effect, to find reasonable necessity in
4 this matter under their world view, one would have
5 to conclude that all the independent tests run on
6 our systems are meaningless and that only these
7 plaintiffs have found the only experts in the
8 nation that can examine computer systems and read a
9 source code. I submit to Your Honor that the
10 credible evidence will indicate otherwise.

11 Finally, Your Honor, the evidence will also
12 show that what occurred in District 13 is to a
13 great degree inconsistent with the theory of
14 computer malfunction and entirely consistent with
15 the fact that the ballot layout and design in this
16 race contributed to voter confusion. For example,
17 the evidence will show that the machines in both
18 Sarasota and Charlotte County, which is also part
19 of the congressional district, utilize the same
20 technology and source code, yet in Charlotte
21 County, where the ballot layout was different, the
22 undervote was within normal parameters.

23 The evidence will also show that in three
24 other counties, the same unusually high percentage
25 of undervote -- in fact higher -- was recorded in

1 the attorney general's race. The evidence will
2 show that the attorney general's race in those
3 counties was set forth in a similar ballot layout
4 design as the congressional race in Sarasota
5 County. And the evidence will show that even in
6 precincts within Sarasota County, the undervote
7 varied in a way that shows correlation with some
8 demographics features, such as age.

9 This is also inconsistent with the theory that
10 a computer bug or malfunction caused the undervote,
11 unless, of course, computer bugs can tell the age
12 of the voter that is using the machine.

13 In summary, Your Honor, at the conclusion of
14 the evidentiary presentation, we respectfully
15 submit that the overwhelming evidence will show
16 that there is no computer malfunction that would
17 justify defeating my client's statutory interests
18 and the right of the people of the state of Florida
19 to maintain the integrity and security of its
20 election systems, and, therefore, the preponderance
21 of the evidence will show that there is no
22 reasonable necessity to disclose requested
23 information. Thank you, Your Honor.

24 MR. BURHANS: Your Honor, Vernon Buchanan has
25 no statement to make at this time.

1 MR. ANTONACCI: Likewise with the state
2 defendants.

3 MR. ELBRECHT: Also with the county canvassing
4 board.

5 MR. HIRSCH: Your Honor, Sam Hirsch for the
6 plaintiff Jennings. We would like to call as our
7 first witness Professor Charles Stewart.

8 Thereupon,

9 CHARLES STEWART, III
10 was called as a witness, having been first duly sworn,
11 was examined and testified as follows:

12 THE COURT: State your full name and spell
13 your last name, sir.

14 THE WITNESS: My name is Charles Stewart,
15 Stewart is spelled S-T-E-W-A-R-T.

16 DIRECT EXAMINATION

17 BY MR. HIRSCH:

18 Q Professor Stewart, what is your occupation?

19 A I am professor of political science at MIT,
20 and I am also the head of the political science
21 department at MIT.

22 Q And can you please briefly describe your
23 educational background.

24 A Yes. I graduated from William R. Boone High
25 School in Orlando, Florida in 1976, from which I went

1 to Emory University. I graduated in 1979 there with a
2 degree in political science.

3 After that I spent a year at Yale Divinity
4 School and then went to Stanford University, where I
5 began graduate study at Stanford in political science.
6 I received a master's in political science from
7 Stanford in 1982. And I received my Ph.D. in
8 political science in 1985.

9 Q Professor, have you taught political science
10 at MIT ever since you got that Ph.D.?

11 A Yes, I have.

12 Q What fields do you teach and specialize in?

13 A In general I teach in American politics, and
14 in particularly congressional elections -- I'm sorry,
15 congressional politics, electoral politics, research
16 design, and also voting technologies.

17 Q And have you published in peer reviewed
18 journals in those areas of specialization?

19 A Yes, I have.

20 Q Professor, have you also been involved with
21 the Cal Tech-MIT Voting Technology Project?

22 A Yes, I have.

23 Q And can you please describe that work for us.

24 A Yes. The Voting Technology Project was
25 started by the presidents of these two universities

1 right after the infamous elections in 2000. The
2 purpose of the project is to develop a
3 multidisciplinary team of researchers who study issues
4 of election technologies in particular and election
5 policy in general. It's multidisciplinary, including
6 social scientists, economists, business school
7 professors, mechanical and electrical engineers.

8 Q Have you been the MIT director of that
9 project?

10 A Yes. I was the MIT director of that project
11 in 2002-2003.

12 Q And in that capacity and as an academic
13 generally, have you studied residual votes?

14 A Yes. That's been my primary focus in this
15 project and where I've done my publishing as well.

16 Q Tell us what the term "residual votes" means.

17 A Residual vote is the encompassing term for
18 votes that are not counted legally in a race. They
19 consist of two parts, something called an undervote
20 and something called an overvote. An undervote is
21 whenever a voter chooses not to or does not record a
22 vote for the candidates in a particular race.

23 It's simply a situation, if you have a
24 two-candidate race, if the voter doesn't choose either
25 candidate, that's an undervote. An overvote is a

1 situation exactly the opposite, when the voter chooses
2 an excess of candidates. In a simple case, where
3 there are two candidates, that would be the voter
4 voting for both candidates, which would also void the
5 ballot.

6 Q Have you published in peer reviewed journals
7 about the issues of voting machines and residual
8 votes?

9 A Yes, I have.

10 Q Are you aware of any American political
11 scientist who has published more extensively about
12 voting machines and residual votes than you have?

13 A Not that I can think of, no.

14 MR. HIRSCH: Your Honor, we tender Professor
15 Stewart as an expert in voting technology, residual
16 votes and statistical analysis of election data.

17 MR. THOMAS: Harry Thomas on behalf of ES&S.
18 We have no objection.

19 THE COURT: So received.

20 BY MR. HIRSCH:

21 Q Professor, what areas have we asked you to
22 research and analyze?

23 A You've asked me to research and analyze the
24 size of the undervote in Sarasota County, the
25 likely -- the size of the undervote and whether it is

1 excessive. The likely distribution of the vote
2 between candidates Jennings and Buchanan, had there
3 not been an excess of an undervote, and finally to
4 research into possible causes for the excess
5 undervote.

6 Q Professor, we will go through each of those
7 three topics in some detail in a moment. If you could
8 share with us first your very brief conclusions on
9 each of the three.

10 A On each of the three, for the first, which is
11 the size of the undervote, I discovered that within
12 the electronic systems, there is roughly a 12-percent
13 excess in undervotes in the -- in the election,
14 roughly 14,000 excess undervotes.

15 I find, as to the second point, that, had
16 there not been these undervotes, in all likelihood,
17 Candidate Jennings would have won the race. And then
18 finally I find that there is a likelihood that there
19 were machine problems, malfunctions that may have
20 contributed to this excess undervote, and therefore to
21 affect the results of the race.

22 Q In doing your research and analysis,
23 Professor, what sort of data did you gather to answer
24 these questions?

25 A Originally after the election, I gathered

1 general election returns from the county of -- from
2 Sarasota County. These election returns are quite
3 detailed. They first of all break down for every race
4 in the county the returns by whether the vote was
5 taken on election day, in the early voting period and
6 in the absentee voting period for every -- for every
7 race. They also record the same information by
8 precinct.

9 I also gathered similar information to the
10 degree that it was available from other counties.
11 More recently I've been able to acquire individual
12 level data that's associated with the active voting
13 itself. In particular, I've been able to gain access
14 to and analyze two sets of files, one file, which is
15 called ballot image files, which reflect the actual
16 ballots that were cast on these electronic machines,
17 the actual choices of voters.

18 And secondly I've been able to examine
19 so-called event logs, which record basically what
20 happened in the sequence of time on each of the
21 electronic voting machines that were used in Sarasota
22 County.

23 Q Professor, why were you interested in having
24 data broken out as between absentee voting on the one
25 hand and early voting and election day voting on the

1 other hand?

2 A The reason for that is that in Sarasota
3 County, the absentee voting is done on paper,
4 optically-scanned paper ballots. Both early voting
5 and election day voting are done on the iVotronic
6 electronic voting machines. And I wanted to get a
7 comparison between the electronic machines and the
8 paper.

9 Q You also mentioned that you had individual
10 level data. Did that allow you to determine how any
11 specific person voted for any office?

12 A No. The only -- the ballot images themselves
13 are presented in random order. So there is no way I
14 or anybody else could ascertain the individuals doing
15 the voting.

16 Q Turning to the first of the three areas you
17 were asked to look at, the size of the undervote --

18 MR. HIRSCH: Your Honor, we have previously
19 given opposing counsel a set of exhibits that go
20 with Professor Stewart's testimony. If I may
21 approach and give that to you and the court
22 reporter. Your Honor, we also have some blowups
23 that I will put on the easels.

24 BY MR. HIRSCH:

25 Q Professor, I ask you first to turn to Exhibit

1 1A, which I will put up in a moment here.

2 Professor, I've given you a laser pointer so
3 you can actually highlight specific items. I know
4 it's a long range, but if you can. Can you please
5 explain what Exhibit 1A shows.

6 A Exhibit 1A summarizes the official election
7 returns from the 13th Congressional District. So what
8 we have over here are each of the five counties;
9 Charlotte, DeSoto, Hardee, Manatee, Sarasota. We have
10 the votes cast for Buchanan and Jennings.

11 So we show the number for Buchanan, Jennings,
12 and down at the bottom we show the total, Buchanan, by
13 the official returns, defeating Jennings by 369 votes.

14 Q Roughly what fraction of the vote comes from
15 Sarasota County?

16 A Just a bit over half of the vote comes from
17 Sarasota County. It's -- I'm sorry.

18 Q And who won Sarasota County?

19 A Sarasota County was won by Jennings.

20 Q And who won the other counties?

21 A Buchanan prevailed by narrow margin in the
22 other counties.

23 Q This table, like the rest of Exhibit 1, is
24 based on the rest of the data you described earlier
25 and prepared by yourself?

1 A Yes, it was.

2 Q I'm going to pull this a little bit closer in,
3 try to. Professor, can you explain what Exhibit 1B
4 shows.

5 A Yes. Exhibit 1B is a continuation of 1A. It
6 likewise shows the counties, this time highlighting or
7 reporting the undervotes within each county. We can
8 see here that there is 21,230 -- I'm sorry, 21,368
9 total undervotes in the district, 18,000 of those
10 being in Sarasota County.

11 So that's roughly 86 percent, I believe, of
12 all the undervotes in that one county.

13 The final column shows the undervote rate,
14 which divides undervotes by total votes cast in the
15 county. And, again, we can see that Sarasota County,
16 the rate was 12.9 percent overall. The rate in the
17 other counties was significantly lower, and it was
18 approximately 2.5 percent overall.

19 Q Professor, I just put up the last part of
20 Exhibit 1, 1C, and can you please describe what this
21 shows?

22 A This recaps the prior tables and draws our
23 attention to Sarasota County compared to the other
24 four counties that were in the district, the Buchanan
25 and Jennings votes, where Buchanan prevails by a bit

1 in the other four counties, Jennings prevails in
2 Sarasota County. And we have the really large number
3 of undervotes that are contained in Sarasota County,
4 compared to the other four counties.

5 MR. HIRSCH: Your Honor, we have about eight
6 exhibits in total today, rather than moving them
7 individually, if we could do so at the end.

8 THE COURT: Fine.

9 MR. HIRSCH: Thank you.

10 BY MR. HIRSCH:

11 Q Did the county-by-county figures you just
12 discussed lead you to zoom in and focus on the
13 Sarasota County data?

14 A Oh, absolutely, yes.

15 Q I've just put up Exhibit 2, Professor. Is
16 this also something you prepared yourself based on the
17 data you gathered?

18 A Yes, I did.

19 Q Does it focus in on Sarasota County
20 exclusively?

21 A Yes. It focuses on Sarasota County.

22 Q Can you explain to us what it shows.

23 A Yes. So what this shows is a plot where we
24 compare the undervote rates in Sarasota County for all
25 of the races that were on the county-wide ballot in

1 Sarasota County. So these are, for instance, the
2 statewide contests, the congressional contest, a few
3 county-wide offices, the statewide constitutional
4 amendments, et cetera. The bottom, along the bottom,
5 the X axis, we have the undervote rate for the
6 absentee ballots. Along the left on the vertical axis
7 we have the undervote rate for the early vote portion
8 of the election in Sarasota County.

9 Each of the dots on the graph reflects the
10 undervote rates in these two modes of voting among all
11 of these offices that are on the county-wide ballot.
12 There is two things that I would point out. First of
13 all, that is a general matter. There is a very strong
14 set of relationships -- regularities between the
15 undervote rates in these two modes of voting. And as
16 you can see, most of the points basically line up
17 along the line.

18 And I've drawn a line that describes very well
19 on that set of points. The other thing I would note,
20 just -- as well is that the 13th congressional
21 district is in red, and it's quite far away from the
22 line and from the other points.

23 Q And the reason you're comparing the absentee
24 ballots to the early voting ballots here is what, sir?

25 A The reason is that the absentee ballots were

1 cast on paper, and there is no -- there have been no
2 questions raised about problems associated with the
3 paper ballots. So it's a natural comparison with the
4 early -- with the other two forms of voting, which
5 happened on electronic forms.

6 Q Professor, I've just put up Exhibit 3,
7 similar-looking graph. Can you please, first of all,
8 confirm that is something you prepared based on the
9 data you gathered?

10 A Yes, it is.

11 Q Can you explain what it shows?

12 A Yes. It's very much in keeping -- the idea is
13 very much like the previous graph. In this case what
14 I'm doing is showing the relationship between the
15 election day undervote rate and absentee voting. So
16 as before, the absentee voting is still along the
17 lower -- the lower axis.

18 Now the vertical axis along the left is the
19 undervote rate from election day. And, again, the
20 same general patterns hold. The data pretty much line
21 up along the line, indicating that in general
22 absent -- undervote rates in one form of voting are
23 highly predictive of undervote rates in the other form
24 of voting, with the 13th district sticking out far
25 from the line and other points.

1 Q Did you draw these two diagonal lines by
2 laying a ruler down, or is it based on statistical
3 methodology?

4 A It was based on statistical methodology,
5 ordinary squares regression.

6 Q Did you calculate the odds, the chances that
7 this relationship between undervote in the paper
8 absentee ballots and undervote in the early voting or
9 election date electronic ballots was purely random?

10 A Yes. I calculated that. And the chance that
11 this relationship occurs purely randomly is less than
12 1 in 100 million.

13 Q Professor, can you explain the terms "normal
14 undervote" and "excess undervote" with regard to these
15 two exhibits.

16 A Sure. Normal undervote we can think of as the
17 undervote that would happen in a race if nothing
18 peculiar came up. In any race there will be people
19 who do not vote for a variety of reasons. So we will
20 call that amount normal.

21 Then the excess undervote in a race will be
22 the amount that's above and beyond what we would
23 consider normal. So if we were to take, say, the
24 election day graph here, the one on the right, the way
25 that we would calculate the normal undervote for

1 election day would be to basically find the undervote
2 rate in the absentee race, go up to the line that
3 corresponds with that -- my hand is a little shaky, I
4 apologize. And once we get to the line, we head over
5 to the vertical axis on the left. And that amount
6 tells us what we would expect the normal undervote to
7 be in a race.

8 So that's the calculation of the normal
9 undervote. Then the calculation of the excess
10 undervote is really the difference between where we
11 were on the line and how far up we have to go finally
12 to get to the office that we are examining. In this
13 case we have to go roughly 12 percentage points from
14 the normal undervote here to the 13th congressional
15 district up there.

16 Q And, Professor, combining the two sets of
17 electronic votes, the early voting set and the
18 election day set, what roughly was the normal
19 undervote for this congressional race and the excess
20 undervote?

21 A It was roughly 3 percent normal undervote, and
22 roughly a 12-percent excess undervote.

23 Q And the total was 15 percent?

24 A The total was 15 percent.

25 Q When you talk about 12 percent, how many votes

1 does that equal to very roughly?

2 A Very roughly 14,000.

3 Q And you call that excess undervote?

4 A I call that excess undervote.

5 Q Do you understand that the expert we will hear
6 about later in the day, Professor Herron, refers to
7 that as suppressed vote?

8 A Yes. It's basically the same idea.

9 Q Professor, that is my questioning on the first
10 of the three areas. I would like to move on to the
11 second, which is, had this excess undervote not
12 existed, and we had only the normal undervote, what
13 would have happened to the outcome of the election?
14 Can we know for sure what the vote totals would have
15 been for each candidate if in fact the undervote rate
16 had been normal rather than excessive in Sarasota
17 County?

18 A No, we can't know for sure. What we can do is
19 use statistics to try to estimate what, in all
20 likelihood, it would have been.

21 Q Did you do that at the county-wide level,
22 precinct-by-precinct level and the voter-by-voter
23 level?

24 A I did it at all three levels.

25 Q Did you get consistent results at all three

1 levels?

2 A Yes, I did. Regardless of the way in which I
3 did it in each case, I estimate that Candidate
4 Jennings would have won had the excess undervote been
5 reallocated to the two candidates.

6 Q Did the margin vary somewhat based on which
7 method you used?

8 A Yes. It varies depending on the method, but
9 it's all in Jennings' favor.

10 Q Which of the methods; county level, precinct
11 by precinct, or voter-by-voter, do you believe is the
12 most accurate way to estimate the likely election
13 results had there been a normal undervote?

14 A The highest level is disaggregation, which in
15 this case are the ballot image data, the individual
16 ballot image data, yes.

17 Q And based on your examination of that
18 individual ballot data, what is your best estimate of
19 Christine Jennings' likely winning margin if we had
20 normal undervote in Sarasota County?

21 A It's a bit over 3,100 votes.

22 Q How did you arrive at that figure?

23 A Well, I arrived at that figure generally by
24 first estimating the size of the excess undervote, and
25 then I allocated that excess undervote to the two

1 candidates, relying on a set of very -- I mean very
2 predictable patterns that occurred in the data
3 pertaining to partisanship and partisan voting --
4 partisan voting behavior.

5 Q Before we turn to voting behavior, this
6 estimate of the size of the excess is the same 14,000
7 voters or 12 percent to which you earlier referred?

8 A Yes. Yes, it is.

9 Q Turning then to how you allocated those 14,000
10 votes between the two congressional candidates, let me
11 call your attention to these that we've pre-marked as
12 No. 4.

13 Professor, did you prepare this yourself based
14 on the data you gathered?

15 A Yes, I did.

16 Q And what does it show?

17 A Well, what this graph shows is, it's an
18 attempt to basically, first of all, describe the
19 119,919 actual votes -- or votes that were cast on the
20 electronic voting machines in Sarasota County. So
21 that's that number in the far, lower, right-hand --
22 far, lower, right-hand.

23 And what I have done is, I've described those
24 votes in terms of the partisan strength as exhibited
25 by the voting patterns for the other races that were

1 at the top of the ticket.

2 Q What were those other races?

3 A Those were five races. They were U.S.
4 senator, Florida governor, attorney general, chief
5 financial officer and agriculture commissioner.

6 Q And can you explain how these 11 rows, what
7 the meaning of these 11 rows is? It says at the top
8 here, strong Dem minus five, at the bottom, strong
9 Republican plus five. Can you explain how those --
10 what those rows mean and how you created data for
11 them?

12 A Yes. This refers to the column that's labeled
13 partisanship scale. What I did was for every voter,
14 we know how they voted on each of the races. So
15 concentrating on these five races that I mentioned
16 before, I first of all counted up how many times a
17 voter voted for a Republican candidate. I then
18 counted up the number of times that voter voted for a
19 Democratic candidate.

20 Then I subtracted the one number from the
21 other. I subtracted the Democratic number from the
22 Republican number, so that if you voted only for five
23 Republicans among those races you get a score of plus
24 five. If you voted for only Democrats among those
25 five races you get a score of minus five. And then

1 there are intermediate values reflecting different
2 mixes of voting behavior.

3 Q What do the columns to the right of that
4 partisanship scale represent?

5 A Then marching to the right on this table we --
6 I then allocate the votes -- the next column are the
7 actual votes that were cast for Jennings, among people
8 who, say, scored a minus five on the first row. Then
9 I broke down the number of people who actually voted
10 for Buchanan.

11 The following row is the number of people who
12 undervoted among that partisan scale. The second to
13 the last row is just the total number of voters that
14 correspond with that partisan scale in Sarasota.

15 The very final column reports the percentage
16 of voters who cast -- ended up having a vote that was
17 counted, the percentage of voters who voted for
18 Jennings in that category. For instance, in the minus
19 five strong Dem category, 97.9 percent of the voters
20 supported Jennings. At the other end, among the
21 strong Republicans, a plus five, 5.3 percent
22 supporting Jennings. As you can see when you go down,
23 the numbers are smaller reflecting support shifting
24 from Jennings to Buchanan as you move along the scale.

25 Q A couple of times you may have said "row" when

1 you meant "column." For the record, you were working
2 across?

3 A I was working across talking about the
4 columns. Sorry.

5 Q And, Professor, just for clarification, are
6 these numbers estimates, or are these actual numbers
7 of votes cast for Jennings, Buchanan, et cetera?

8 A The entries on this table are the actual
9 numbers reflected in the ballot image log.

10 Q Turning to the exhibit pre-marked as No. 5.
11 Professor, is this another table that you created
12 based on the data that you gathered?

13 A Yes, it is.

14 Q Can you explain what it shows?

15 A Yes. This is really a continuation of the
16 previous exhibit as well. And I think the way to get
17 into this exhibit is to start about halfway over down
18 at the bottom and note that we estimate that there
19 were roughly 14,000 excess undervotes in Sarasota
20 County. And so one of the things that this -- this
21 table does in this column that I'm pointing to here,
22 excess undervotes total, is just to allocate on a
23 proportional basis the actual undervote and converting
24 a fraction of that into the excess undervote. So
25 that's what this column right here does.

1 Then, having estimated what the excess
2 undervote is for each of the rows, each of the
3 partisan categories, I then go over to the previous
4 exhibit. I see, for instance, in this first row that
5 97.9 percent of these voters -- of these voters
6 supported Jennings.

7 So I use that proportion to allocate the
8 excess undervote to Jennings, to Buchanan. In this
9 case in the very first row it's 4532 to Jennings and
10 98 to Buchanan.

11 Q And, Professor, the reason that row is so
12 lopsided is because those are people who voted
13 straight ticket?

14 A Yes.

15 Q You're not talking about people who undervoted
16 congressional, voted Democratic the top of the ticket
17 otherwise?

18 A That's correct, yes.

19 Q Carrying it across to the far right-hand
20 column, what does that signify?

21 A The very far right-hand column is labeled, net
22 to Jennings. And that's just simply we take the
23 number of votes allocated to Jennings, subtract the
24 votes allocated to Buchanan, and that's the net to
25 Jennings. That's just the difference between the two.

1 We then add all those up. We add up, and we get 3,551
2 votes on net shifted to Jennings.

3 Q Just to be clear, that means that if the
4 14,000 votes had been recorded not as undervotes, but
5 as Jennings or Buchanan votes, the net swing towards
6 Jennings would be this 3,551 figure?

7 A Yes, that's correct.

8 Q What are the two figures to the left of that?

9 A The sums down the columns. So this is the sum
10 of the votes that we -- of the excess undervotes that
11 we allocated to Jennings and the sum of the excess
12 undervotes that we allocated to Buchanan, 8776 to
13 Jennings, 5225 to Buchanan.

14 Q Professor, this is all based on the assumption
15 that the excess undervote is about 14,000. Did you
16 also examine what might have happened if the excess
17 undervote had been less than that, and the normal
18 undervote had been larger than you estimated?

19 A Yes, I did.

20 Q Let me put up exhibit pre-marked as No. 6.

21 Professor, is this a bar graph that you
22 personally prepared based on the data that you
23 gathered?

24 A Yes, it is.

25 Q I keep asking you that. Are you coauthoring

1 any of this work or relying on students or grad
2 students or undergraduate students to crunch these
3 numbers or reach these conclusions?

4 A Neither to crunch the numbers or create the
5 displays.

6 Q Everything we're discussing today is your own
7 work?

8 A Yes.

9 Q Thank you. Can you please explain to us what
10 the bar graph here shows?

11 A Well, what the bar graph shows is trying to
12 describe, based on the previous analysis, what the
13 Jennings victory would have been, the estimated
14 Jennings would have been if the excess undervote had
15 been not 14,000, but had been amounts that were less
16 than 14,000.

17 I think the way to anchor our understanding of
18 this exhibit is on the far right-hand bar is the bar
19 that represents the result I just went through. The X
20 axis is labeled 14,000 undervotes. And this shows the
21 roughly 3100-vote victory for Jennings.

22 Q That's where it says 3,182, that number
23 sitting on top of the bar is the winning margin?

24 A Exactly, yes.

25 Q Thank you.

1 A At the other end in the bar colored red is the
2 situation where we assume there were no -- there were
3 no excess overvote -- undervotes, excuse me. There
4 were no excess undervotes, in which case we would be
5 in the position where we're in right now with the
6 victory for Jennings -- I'm sorry, victory for
7 Buchanan being at 369 votes.

8 And then the bars just march up. I then add
9 2,000, in increments of 2,000 different amounts of
10 excess undervotes to show what we would estimate the
11 Jennings victory margin to be under different
12 estimated excess undervotes.

13 Q What is the number of excess undervotes that
14 would have been necessary to tip the likely result of
15 this election from Buchanan to Jennings?

16 A The number where these bars would reach the
17 zero level here is I believe 1,456.

18 Q Is it fair to say that's less than one-tenth
19 of the total undervote in Sarasota County?

20 A Yes.

21 Q So asking a purely hypothetical question, if
22 10 percent of the undervote were attributable to
23 machine malfunction and 90 percent to some other
24 causes, voter confusion or something else, would the
25 outcome of the election probably have been different

1 than the certified result?

2 A In all likelihood, yes.

3 Q Professor, we've now covered the second of
4 your three major topics. I would like to move on to
5 the third, the question of what caused or may have
6 caused this high undervote rate in Sarasota County.
7 Can statistics give us one definitive answer to the
8 question of why this undervote rate was so high in
9 Sarasota County in this year's congressional race?

10 A Statistics can't give us the definitive answer
11 about one thing. What we can do is use statistics to
12 try to eliminate certain competing hypotheses.

13 Q Let me ask you about one of those hypotheses.
14 What do the numbers suggest, Professor, about the
15 argument that the elevated undervote rate was caused
16 by voters being turned off to this campaign, upset
17 with the negativity of it, perhaps, or just didn't
18 like these candidates?

19 A It seems to me that that's the easiest of the
20 hypotheses to dismiss for a variety of reasons. I
21 think that the primary -- well, for a variety of
22 reasons.

23 It's important to note that, for instance, the
24 excess undervote within Sarasota County was only on
25 the electronic machines, not in -- not on the absentee

1 paper ballots. First -- furthermore, there was not an
2 excess undervote in this race in the other counties.

3 So those two types of comparisons make it
4 pretty clear that it's unlikely to be due to the
5 negativity of the campaign or voter revulsion with
6 some aspect or rejection of both candidates.

7 Q And why do you assume that the low undervote
8 rates in the other four counties couldn't coexist with
9 high negativity only in Sarasota County?

10 A Because it's hard to imagine how you could so
11 isolate aspects of the race that they would only
12 affect Sarasota County and not affect other counties
13 that were also in the district. After all, it's a
14 fairly compact district. It's a district that's
15 reached overwhelmingly by one media market.

16 And so by and large, regardless of what county
17 you're living in, you are experiencing basically the
18 same campaign throughout the county.

19 Q And that media market is the Tampa-St.
20 Petersburg TV market?

21 A Yes, it is.

22 Q Professor, I would like to address a second
23 possible hypothesis dealing with voter confusion, and
24 I would put up Exhibit 7A and Exhibit 7B. Do you
25 recognize these?

1 A Yes, I do.

2 Q And can you tell the court first what 7A,
3 which is the one on the left, is?

4 A Sure. Well actually both of these are on
5 what's known as screen shots. The left is -- the left
6 is a screen shot or what a voter would see if the
7 voter were actually looking at the computer screen and
8 looking at the ballot that -- the part of the ballot
9 that has the congressional district race at the top,
10 and then right below it the gubernatorial-lieutenant
11 governor race down below it.

12 Q This is a Sarasota County electronic ballot?

13 A Yes. This is the Sarasota County ballot.

14 Q From the iVotronic machine?

15 A Yes, it is.

16 Q Which page of the ballot is this?

17 A That's on page 2, which we know by looking
18 down -- at the very bottom of the screen there is
19 basically some navigation information. The
20 information in the middle tells you where you are,
21 page 2 of 15 of this case. And then there is also
22 navigation buttons allowing a voter to move to the
23 previous page and move to the next page.

24 Q And, Professor, is it correct that this is
25 just a pointer that is on the screen shot? That's not

1 something a voter would actually see?

2 A That's correct.

3 Q And can you describe how the voter moves
4 through the ballot and gets to Exhibit 7B?

5 A Yes. Well in general the voter is presented
6 with a series of screens like the one on the left.
7 And when they see a choice they want to make, they
8 touch that part of the screen, and the screen changes
9 color, and there is an X to reflect the choice.

10 The voter, as the voter is moving through the
11 ballot, presses the next page button to page through
12 the entire ballot. At the very end the voter then
13 gets to the exhibit on the right, which is Exhibit 7B.
14 And that is what is called the summary screen.

15 Q And here how many pages of summary screen
16 would there be?

17 A In this case there are three pages of summary
18 screen. Again, it's reflected down. There is the
19 same similar navigation information when you get to
20 the summary screen. In the middle it tells you how
21 many summary screens there are. In this case there
22 are three. This is page 1 of 3. And there is
23 likewise the previous page, next page navigation
24 buttons.

25 Q Can you describe what the two columns of

1 information on this summary ballot page are about?

2 A Yes. This is a representative summary screen
3 page. The columns represent all of the races. I will
4 use roughly a third of the races from U.S. senator
5 down to charter review board race. Those are in
6 black.

7 Here, because this particular screen shot
8 there were no votes on the machine, it indicates in
9 red below each of the offices, no selection made,
10 which indicates in this case that the voter had not
11 voted in these contests.

12 Q When we talked earlier about these straight
13 ticket voters, I assume it would not say "no selection
14 made" under senator or governor, attorney general or
15 so forth? There would be names there?

16 A Yes. They would not be red. But there would
17 be the names of the candidates that you had actually
18 supported or voted for.

19 Q So for those voters who voted straight ticket
20 or otherwise voted for all of these top-of-the-ballot
21 races on the left-hand column, if they undervoted the
22 representative in Congress, is it correct that the
23 machine should have shown in red, no selection made,
24 only for that office, but not for the others in this
25 column?

1 A That's right. The others would have the name
2 of the candidate that they had voted for and the U.S.
3 representative in Congress would be red, no selection
4 made.

5 Q And is a voter allowed just to ignore this
6 screen entirely, bypass it electronically, and move on
7 to casting a final ballot?

8 A No. In order to actually cast a final ballot,
9 what the voter has to do is to page through each of
10 the pages of the summary review screen. And it's only
11 when they get to the very last page that they are
12 then, the vote button, which actually casts the
13 ballot, is activated, allowing the voter to cast a
14 ballot.

15 Q Why do electronic voting machines have this
16 summary ballot or review screen on them?

17 A This is a feature that was added to reduce
18 voter confusion and to try to deal with the problem
19 that was so illustrated so widely in 2000 of a large
20 number of undervotes. So it's an attempt to give
21 voters one last chance to review what they've done,
22 and if they've made a mistake, either voted for the
23 wrong person or have undervoted a race, they are then
24 able to go back into the ballot and make the
25 correction, either undoing the undervote or change the

1 ballot to suit what they would desire to do.

2 Q So they're warned if there is an undervote?

3 A They are warned if there is an undervote.

4 Q Do you believe it's likely that the 12
5 percentage point elevation in Sarasota County's
6 undervote rate were caused solely by the design of
7 this ballot and its tendency to confuse the voters?

8 A No, I do not.

9 Q Why not?

10 A Well, I -- an important reason is that, if we
11 look at this ballot on the left, it's on the face of
12 it not a particularly confusing ballot. It does have
13 a number of offices on it, but there are many pages on
14 the ballot that have a number of offices on it. It's
15 a fairly straightforward ballot.

16 This is in comparison to other cases that are
17 well-known, where the ballot has been just on the face
18 of it perplexing. And in those cases the undervote
19 rate has been quite -- quite a bit lower than the
20 undervote rate that we exhibited here.

21 Q Let's put up the exhibit pre-marked as 7C.
22 Professor, do you recognize Exhibit 7C?

23 A Yes, I do.

24 Q Can you tell the court what it is?

25 A Yes. This is a photograph of the Palm Beach

1 County so-called butterfly ballot from the 2000
2 presidential election.

3 Q And is that viewed by the voting experts,
4 including yourself, as a confusing or not a confusing
5 ballot?

6 A It's viewed as being the paradigmatic, the
7 example you use all the time of a confusing ballot.

8 Q Why?

9 A Well, the reason is that it is a very unusual
10 way of presenting candidates to voters. The typical
11 way that it's done -- now let me step back and remind
12 us that this ballot is a punch card ballot, so that
13 underneath this ballot there is a punch card. And
14 that punch card has a chad that the voter needs to
15 dislodge in order to reflect a vote.

16 And these pages on either side are like a
17 book, and they have the candidates on the page.
18 Typically you will have an office and the candidates
19 for that office on that one page. In this case what
20 we have is we have one office spread across two pages.

21 And so it's the spreading of the offices
22 across two pages that starts the confusion. The added
23 confusion is that, under Florida law, there is a
24 certain order in which candidates must appear on the
25 ballot. In this case Republican had to be first;

1 Democrat had to be second, and the other candidates.

2 What happened here was, well if you were
3 reading this like a book, Republican comes first, and
4 then Democrat comes second. But then if you were just
5 scanning this whole image, you see that, well, reform
6 actually comes between Republican and Democrat.

7 Furthermore, if we were to examine very
8 closely the actual holes, the very first hole is the
9 Republican hole. But the second hole isn't associated
10 with the second candidate. It's actually associated
11 with Pat Buchanan, the reform candidate. The third
12 hole is associated with the Democrat candidate,
13 although it's the second race on the ballot.

14 So there isn't an obvious correspondence
15 between the order of the candidates and -- on the
16 written ballot and where you need to punch in order to
17 reflect your vote for these candidates.

18 Q And did this ballot lead to aberrational
19 results?

20 A Yes. It led to a couple of types of
21 aberrations. First of all, it led to just -- it was,
22 as you can see, it's easy to see how a voter -- some
23 voters intending to vote for Al Gore, the Democratic
24 candidate, might see that he was the second candidate
25 in the race, and deduce that, well, maybe there is a

1 problem with that arrow, and in fact I need to punch
2 the second hole there, and so would in fact punch the
3 second hole, mistakenly voting for Pat Buchanan.

4 Q And roughly what percentage of the electorate
5 made that error?

6 A It was about 1 percent.

7 Q You said there was a second error as well
8 triggered by this?

9 A There was a second error as well that ended up
10 being more numerous. And that was where voters ended
11 up punching many holes, perhaps either -- recognizing
12 the error they had made or seeing that immediately to
13 the right of Gore, there were physically several holes
14 to the right of Gore, and they may have punched two or
15 three holes to the right in a misguided attempt to
16 make sure that their vote was counted for Gore in this
17 instance.

18 Q And that's an overvote?

19 A That's an overvote.

20 Q And what percentage of the electorate
21 overvoted on that ballot?

22 A As I recall, about 4 percent.

23 Q So together, the confusion caused by this
24 ballot was in the neighborhood of 5 percent?

25 A Yes.

1 Q How does that relate to the level of confusion
2 caused by the ballot to its left in Sarasota County?

3 A Well, to the left we have a level that I
4 estimate to be roughly 12 percent.

5 Q Professor, I would like to put up Exhibit 7D.
6 Do you recognize this exhibit, Professor?

7 A Yes, I do.

8 Q What is that?

9 A It's a replica of -- from Orange County,
10 California, a ballot that was used in the 2003
11 gubernatorial recall election. It's the recall
12 election that recalled Governor Gray Davis and
13 installed Arnold Schwarznegger as the governor of
14 California.

15 Q Why does it serve to help measure the possible
16 magnitude of voter confusion?

17 A Well, to start off with, this is a very
18 perplexing and difficult ballot to navigate through.
19 It starts with, first of all, the voter is given the
20 opportunity to vote on whether Governor Davis should
21 be recalled or not. And then the voter is given the
22 opportunity to choose among 135 candidates whom they
23 would prefer if Davis in fact was recalled.

24 So first of all there is just a lot going on
25 on this page. In addition to that, California -- in

1 California, the problem was confounded by the
2 randomization scheme that California uses to put names
3 on the ballot.

4 What they do there is, they randomly generate
5 a new alphabet, entirely randomly generate a new
6 alphabet. That alphabet is then systematically varied
7 throughout the state. So that in this instance, if
8 you knew you wanted -- regardless of how you felt
9 about recall in the first place, but you knew you
10 wanted to vote for Arnold Schwarznegger if there were
11 a recall, you couldn't rely on the fact that you
12 generally know where the letter S should be in an
13 alphabetized list to find Schwarznegger. You have to
14 rely on the fact in Orange County in this instance the
15 S's are actually close to the top of ballot.

16 In this case if you wanted to vote for
17 Schwarznegger, you have to read very small type, and
18 then you have to make sure that you either punch the
19 hole or make the mark precisely in the right place if
20 you found your candidate in order to make your choice.

21 Q And did this ballot actually empirically show
22 as having confused a significant number of voters?

23 A Yes, in a study by Professor Mike Alvarez and
24 some collaborators, one of the things they showed is
25 there was a tendency, if you examined the ballot

1 carefully, you will notice that there are prominent
2 candidates who were major contenders like
3 Schwarznegger-Cruz Bustamante. And the thing that he
4 showed was that the minor candidates, who really, in
5 most cases, were not campaigning in any meaningful
6 way, if you were right next to a prominent candidate,
7 you actually could get a few votes, being benefited by
8 being next to a prominent candidate.

9 This is what is sometimes called an adjacency
10 error, where a voter makes an error by hitting
11 something adjacent to where they wanted to go.

12 Q What fraction of the electorate made that
13 error in California?

14 A If you accumulate together all of these excess
15 votes among the minor candidates that were next to the
16 major candidates, again, you're talking about excess
17 error rate in the area of about 1 percent.

18 Q Professor, are there other examples where the
19 magnitude of voter confusion or of ballot design
20 effects have been measured?

21 A Yes, there are.

22 Q And can you tell us what they show?

23 A Well, in another study there is -- another way
24 of approaching this is to approach -- is to think
25 about ballot order effects. Ballot order effects are

1 effects due to some people being able to appear first
2 or second or third on the ballot and what order do you
3 appear on the ballot.

4 And in studies that have been done, the most
5 cited ballot order effect study is one that studied
6 Ohio, which has another sort of randomization scheme.
7 And what they discovered was that for major races at
8 the top of the ballot, that the advantage to being
9 first was in the range of 1 to 2 percent; that as you
10 went down the ballot into more or less visible races
11 and nonpartisan races, the advantage that might accrue
12 to you by being on the top of the ballot might be as
13 large as 5 percent.

14 So the ballot order effects, which is another
15 way in which ballots can guide behavior of voters in
16 that case, tended to range in the 1 to 5 percent
17 range.

18 Q So of the three that you have discussed with
19 us, the butterfly ballot in Palm Beach County, the 135
20 candidate gubernatorial ballot in California, and the
21 ballot order effect study, do any of them affect more
22 than 5 percent of the voters in the aggregate?

23 A No, they do not.

24 Q Are you aware of any ballot confusion issues
25 that have generated an undervote rate of 15 percent as

1 in Sarasota County this year?

2 A No, I do not.

3 Q Well, other than by process of elimination,
4 eliminating the hypothesis that the negativity of the
5 campaign drove the undervote, and the hypothesis that
6 ballot confusion drove the entirety of the undervote,
7 do you have any statistical basis for believing that
8 machine failure or machine malfunction contributed to
9 the high undervote rate in Sarasota County this year
10 in the congressional race?

11 A Yes, I do.

12 Q And what is the data that you used to reach
13 that conclusion?

14 A Well in this case I used the data that came
15 from the event logs and combined -- and was able to
16 merge that information with the data in the ballot
17 image files to analyze the undervote rate of machines
18 based on the days in which the machines were prepared
19 for the election.

20 Q Professor, when you say the ballot image logs
21 and event logs, those are logs put out through the
22 iVotronic machine -- excuse me, through the iVotronic
23 system based on electronic ballots cast in Sarasota
24 County this year?

25 A That's true, yes.

1 Q I will put up an exhibit pre-marked as 8A. I
2 realize there is a lot of information on that small
3 space. But can you recognize that to be something
4 that you prepared based on data you gathered?

5 A Yes, it is.

6 Q And can you explain what it shows?

7 A Yes. What I did here was, I was able to, from
8 the event logs, ascertain the days on which each of
9 the electronic voting machines used in Sarasota County
10 was prepared for the use in an election. The code in
11 the event log is a code for, quote unquote, cleared
12 and prepared.

13 So I know the date on which every electronic
14 voting machine was cleared and prepared for -- cleared
15 and tested, I'm sorry; the term is cleared and
16 tested -- for use in the election.

17 Q And is that signified by this left-hand column
18 where it says date?

19 A Yes.

20 Q What's the first date on which machines in
21 Sarasota County were cleared and tested?

22 A The first date on which they were cleared and
23 tested was on September 19th, 2006, and the last date
24 down at the bottom was November 5th, 2006.

25 Q And as you work across to the right, can you

1 explain what the column that says "all machines"
2 refers to?

3 A Yes. The all machines column is the summary
4 for all the machines, these three columns. The very
5 first column is just simply the number of machines
6 that were prepared in each of these days. So, for
7 instance, the very first row shows one machine
8 prepared on September 19th.

9 Moving to the next column, I report how many
10 votes were subsequently counted, or cast, rather, how
11 many were subsequently cast on those machines. And
12 then this final column, labeled "undervote CD 13" is
13 the undervote rate on the machines that were prepared
14 on those given days. So that's the first three
15 columns there, which is the general summary.

16 Q And the next two triplets of columns, there is
17 one labeled "election day machines," one labeled
18 "early voting machines." Can you explain what those
19 are?

20 A Yes. The next two sets of columns, then,
21 break out the general summary to show separately what
22 happens when we examine, first of all the machines
23 that were used on election day, and then secondly, the
24 machines that were used in the early voting period.

25 Q And can you tell us what the bottom two lines

1 underneath the total row refer to?

2 A Well, one of the things that I noticed
3 immediately when I examined this table was that
4 around -- that there is a break in the undervote rate
5 that occurs on October 12th. And so what the last two
6 lines do is they separate the results by machines that
7 were prepared up to October 11th, and then -- that's
8 the first line. And then the second line are machines
9 prepared from October 12th until November 5th.

10 Q And what did you see in the data about those
11 two sets of machines, the ones prepared early and the
12 ones prepared shortly before the election?

13 A So what you see is that among the machines
14 that were prepared earlier, the undervote rate is 11.8
15 percent, versus the machines prepared later, their
16 undervote rate is 17.5 percent.

17 Q Did you find any other patterns when you
18 looked at this sort of data?

19 A The other pattern that I discovered in
20 addition to the pattern about date was the pattern
21 about the busyness of the preparation. In general,
22 there is a correlation between the number of machines
23 that were prepared on a day and the size of the
24 subsequent undervote rate. The more machines
25 prepared, the higher the subsequent undervote rate.

1 Q I would like to put up exhibit pre-marked as
2 8B. Professor, is this a graph that you prepared
3 based on the data that you gathered?

4 A Yes.

5 Q And can you explain what it shows?

6 A Yes. This graph summarizes much of the data
7 that's also recorded in the table. So each -- sorry.
8 Let me start down below in the lower X axis, we have
9 each of the dates on which the machines were cleared
10 and tested. Along the left-hand vertical axis we have
11 the undervote rate in the 13th district.

12 Each of the bubbles is the data point that
13 corresponds with the undervote rate on that date. I
14 have made the size of the bubbles proportional to the
15 number of machines that were prepared on a general
16 day. So if a bubble -- if one bubble is twice as
17 large as another bubble, that means twice as many
18 machines were reported -- I'm sorry -- were prepared
19 on that day.

20 Finally, I've also illustrated the days when
21 the early vote machines were primarily prepared.
22 Those are the bubbles in the lighter shade of blue.

23 Q Professor, down here in the sort of bottom
24 left-hand area, there, there and there, I don't
25 actually see a bubble. Can you explain why not?

1 A Yes. Those are days when just one machine was
2 prepared.

3 Q And what sort of undervote rates did the
4 machines prepared on those days, when there was not a
5 rush, generate?

6 A Very, very low undervote -- well very, very
7 undervote rates compared to all of the other machines.
8 I would point out, and this is still a relatively high
9 undervote rate in comparison to the other comparisons
10 that we made.

11 Q And which of the bubbles represents the
12 busiest day when the most machines were being prepared
13 for the election?

14 A Well the busiest day is this bubble right here
15 that I'm pointing to, which is on October 17th. What
16 this graph also helps to illustrate is how that was
17 also the very last day on which a long series of
18 election day machines were prepared. And immediately
19 after that, the county went into preparing early
20 voting machines.

21 Q And what was the undervote rate for the
22 machines that were prepared on that busiest day,
23 October 17th?

24 A It's approximately 20 percent.

25 Q Professor, why do you believe that you --

1 these two correlations exist, higher undervote rates
2 later in the process and higher undervote rates when
3 there is more -- when there are more machines being
4 prepared on a given day?

5 A Of course I don't have direct evidence,
6 because I wasn't there when the machines were
7 prepared. But a reasonable hypothesis, it seems to
8 me, is that, as time went on, and especially as the
9 rush of election day was emerging, it becomes easier
10 to be inattentive to what needs to be done to prepare
11 the machines. So that's one concern.

12 The other concern, of course, is that as there
13 are more machines to be prepared on a particular day,
14 it may be easier to be inattentive. So, in both of
15 those -- so in general, I would imagine that this is
16 evidence that inattention may have driven up the
17 undervote rate in these machines.

18 Q And is this evidence consistent or
19 inconsistent with the notion that the high undervote
20 rate was caused by voter confusion?

21 A No, it's totally inconsistent with the notion
22 that the high undervote rate is caused by voter
23 confusion.

24 Q And why is that?

25 A Well, because this is -- this is evidence that

1 goes to the physical preparation of the machines, not
2 to characteristics -- well, it goes to the physical
3 preparation of the machines. But it doesn't go to the
4 description of the ballots, which is where the
5 confusion would come in.

6 Q Professor, is the relationship between the
7 undervote rate and the date on which the machines were
8 prepared statistically significant?

9 A Yes, it is.

10 Q And is the relationship between the undervote
11 rate and the busyness of the date on which the
12 machines were prepared statistically significant?

13 A Yes, it is.

14 Q Given those statistically significant
15 relationships, given that voter confusion induced by
16 ballot design typically affects less than 5 percent of
17 the voters, given that the undervotes were
18 concentrated in Jennings' area of strength and that
19 the excess undervote rate was about 12 percent, 14,000
20 votes, do you think there is a reasonable likelihood
21 the machine failure altered the outcome of this
22 election?

23 A Yes, I do.

24 MR. HIRSCH: No further questions, Your Honor.
25 Other plaintiffs may have.

1 THE COURT: Cross?
2 MR. FINLEY: Go ahead.
3 MR. THOMAS: Do you have any questions? If
4 you do, ask them.
5 MR. FINLEY: All right.
6 CROSS EXAMINATION
7 BY MR. FINLEY:
8 Q Professor Stewart, I'm Lowell Finley, and I
9 represent the voter plaintiffs in the case that's been
10 consolidated with the case brought by Candidate
11 Jennings. You're aware of course that my clients, the
12 11 voters, have not retained you as an expert; is that
13 correct?
14 A That is correct.
15 Q You testified as to your opinion based on your
16 professional experience and analysis that you believed
17 that an excessive undervote rate attributable to the
18 voting system accounted for a sufficient number of
19 undervotes, combined with the breakdown of those that
20 was otherwise seen in Sarasota County, that that would
21 have produced a victory for Jennings in the race
22 rather than for the officially certified victor,
23 Mr. Buchanan; is that correct?
24 A Yes.
25 Q And are you aware that my clients, the voter

1 plaintiffs, are not seeking to have the court declare
2 that either candidate is the victor and are seeking
3 only to ask to have the court order a revote in this
4 election?

5 A That's my understanding.

6 Q Now, based on your evaluation of the -- of the
7 evidence and your conclusion as to the effect on what
8 you believe to be the true number of voters who
9 intended and attempted to cast a vote for Jennings, if
10 it's your conclusion that she was, in all probability,
11 the victor, is it fair to say that, at a minimum, your
12 analysis indicates that there is serious doubt cast on
13 the official outcome of the election, which resulted
14 in the certification of Mr. Buchanan as the victor?

15 A I think it's fair to say that, had the -- had
16 all of the votes that were intended to be cast for the
17 two candidates in fact been cast, then Candidate
18 Jennings would have won. I think that's -- in all
19 likelihood that would have happened, yes.

20 Q I guess what I'm getting at is that as -- at a
21 minimum, does that indicate, in your mind, that there
22 is serious doubt as to the accuracy of the official
23 result?

24 A Yes, yes, there is serious doubt about the
25 accuracy of the official result.

1 Q Mr. Hirsch asked you about the infamous
2 butterfly ballot from the 2000 election in Palm Beach
3 County. And I believe it was your testimony that
4 approximately 5 percent of the votes in the
5 presidential race were affected in one way or the
6 other by -- and resulted in aberrant votes as a result
7 of the poor layout of the ballot; is that correct?

8 A Yes.

9 Q And then Mr. Hirsch asked you a question about
10 the ballot layout in the Congressional District 13
11 race in Sarasota County in the November 7th, 2006
12 election. And I was unclear as -- you gave a
13 percentage there, but I was unclear as to what you
14 were referring to, which universe you were referring
15 to, what percentage of what you were referring to. I
16 just ask you to try to clarify that.

17 A Well, I need to maybe ask you to clarify the
18 question, because I'm not quite sure what you're
19 asking me.

20 Q Okay. I believe that in response to a
21 question from Mr. Hirsch you responded that 12 percent
22 of something was affected by the ballot layout. And I
23 was unclear as to what it was you were referring to.

24 A Yes. The 12 percent is the percentage of
25 votes -- ah. The 12 percent number that I was

1 referring to is the -- is -- I believe was the excess
2 undervote in Sarasota County, which -- which I am
3 saying I have serious doubts about whether that is
4 entirely due to voter confusion.

5 Q Okay. So -- but the 12 percent figure when
6 you gave it, was there a reference to the overall
7 excessive undervote rate, according to your
8 calculations, that you had testified to earlier?

9 A If I understand your question, the 12 percent
10 in that case was -- was -- is the amount of the
11 excess -- is the percentage of all votes, which is the
12 excess undervote in Sarasota County.

13 MR. FINLEY: Thank you. No further questions.

14 CROSS EXAMINATION

15 BY MR. THOMAS:

16 Q Good afternoon, Professor Stewart.

17 A Good afternoon.

18 Q My name is Harry Thomas, counsel for ES&S.

19 I would like to start with the last two
20 exhibits that you talked about. Now, on November the
21 20th, if I understand correctly, you prepared a
22 declaration that was attached to the plaintiff's
23 complaint in this case; correct?

24 A Yes.

25 Q And do you have a copy of your declaration on

1 the witness stand with you?

2 A I do not.

3 MR. THOMAS: If I may approach, Your Honor?

4 THE COURT: Certainly.

5 THE WITNESS: Thank you.

6 BY MR. THOMAS:

7 Q That is a copy of your November 20, 2006
8 declaration; correct, sir?

9 A Yes, it is.

10 Q The two charts, I believe they're 8A and 8B.

11 A Yes.

12 Q The information that you placed in those
13 exhibits, that's information that you have put
14 together since you prepared your November 20, 2006
15 declaration; correct?

16 A Yes, it is.

17 Q And if I understand the chart 8A, that's a
18 chart which indicates when particular voting machines
19 in the various precincts within Sarasota County were
20 prepared for election; is that correct?

21 A Yes, sir.

22 Q Could you tell me, based on your chart, 8A, or
23 any other information available to you, on what date
24 was the iVotronics machine in precinct 105, bearing
25 serial number V0105192, what date was it prepared,

1 sir?

2 A I don't know that information. I don't have
3 it in my mind. I have that information in the files
4 that I have, but I don't know --

5 Q Do you have them with you today in the
6 courtroom?

7 A No, I do not.

8 Q Would the same be true if I asked you on what
9 date the machine in precinct 118, bearing serial
10 number V0106437, what date it was prepared, you
11 couldn't tell me that either; could you?

12 A Not today, no, sir.

13 Q So you don't know where on your bubble chart
14 those two machines would fall; correct?

15 A That's correct.

16 Q And isn't it also correct, sir, that the time
17 of preparation of one of the iVotronics voting
18 machines has absolutely nothing to do with whether
19 there is a software bug in the source code or some
20 kind of hardware malfunction?

21 A I have -- I'm not a software engineer, and
22 I -- I have no information about that. I would be --
23 that would be a surprising thing to me. But I don't
24 have any information about that.

25 Q So you can't draw a conclusion from this

1 bubble chart that you've put up here that there is in
2 fact -- there has been a machine malfunction or a
3 software bug that caused the undervote in Sarasota
4 County in the Congressional District 13 race?

5 A What this information draws my attention to --

6 Q Could you answer my yes yes or no, and you can
7 explain it.

8 A Would you repeat your question.

9 MR. THOMAS: Could you read it back, ma'am.

10 (Pending question read).

11 A This information is not evidence of that,
12 correct.

13 BY MR. THOMAS:

14 Q Thank you, sir. Let's turn to the report that
15 we did have an opportunity to look at before today.
16 In your declaration that's dated November 20, 2006,
17 you identify five key conclusions; correct?

18 A I believe so, yes, sir.

19 Q And I believe that those start on page 2?

20 A Yes, sir.

21 Q Now, on page 2 of your declaration, you state
22 that, comparison of the undervote rates in different
23 counties on different machines and under different
24 modes of voting lead to the conclusion that the
25 difference in undervotes was caused by the use of the

1 iVotronic electronic voting machine in Sarasota
2 County; correct?

3 A Yes, sir.

4 Q Saying that the difference in undervotes was
5 caused by the use of electronic voting machines is not
6 the same as saying that the undervotes were caused by
7 electronic voting machine malfunction; correct, sir?

8 A It -- correct.

9 Q Two counties, Charlotte County and Sarasota
10 County, use the iVotronic voting machine for voting,
11 with the exception of the absentee ballots cast in
12 those two counties; correct?

13 A Yes, sir.

14 Q Now, in your declaration you only provide a
15 comparison of the undervote in Charlotte County and
16 Sarasota County in the Congressional District 13 race;
17 is not that correct?

18 A That is correct.

19 Q Your declaration does not address or compare
20 the undervotes that occurred in other races in
21 Charlotte and Sarasota County using the iVotronics
22 machine; correct?

23 A I believe that's true, yes, sir.

24 Q For example, your declaration of the work
25 you've done does not look at the undervote that

1 occurred in the attorney general's race in Charlotte
2 County using the iVotronic machine; does it?

3 A The report does not have that, as I recall.

4 Q You're aware of the percentage of that
5 undervote; are you not, sir?

6 A I'm aware that it's really quite high, yes,
7 sir.

8 Q Higher than the undervote in the Congressional
9 District 13 race; correct?

10 A I believe that's true, yes, sir.

11 Q And the only reason that race is of no
12 interest is that the winning margin was so great that
13 the undervote wouldn't have made any difference;
14 correct?

15 A I suppose that's a reasonable statement.

16 Q You do also agree that the electronic voting
17 machines used in Sarasota did not produce unusually
18 high undervote rates in other races in Sarasota
19 County; correct?

20 A That's correct.

21 Q And you would also agree that there was no
22 high undervote rate in the Congressional District 13
23 race in Charlotte County; correct?

24 A That's correct.

25 Q Your declaration and your testimony here today

1 provides no analysis of the ballot layout differences
2 between the ballot that was on the iVotronic machine
3 in Charlotte County compared to the ballot that was
4 used in Sarasota County; is that correct?

5 A That's correct.

6 Q Nevertheless, you would agree that only in
7 Sarasota was the Congressional District 13 race placed
8 on the same ballot screen with the governor's race;
9 correct?

10 A That's correct.

11 Q At page 8 of your declaration, you state that
12 because the undervote rates in Sarasota County among
13 early votes and election day votes are similar and in
14 stark contrast with the absentee undervote rates, it
15 is reasonable to conclude that the higher undervote
16 rates among the early votes and the election day votes
17 was caused by the use of the iVotronic electronic
18 voting machines; correct, sir?

19 A Yes, sir.

20 Q Once again, that conclusion is not the same as
21 saying that the high undervote rates were caused by a
22 machine malfunction or a software bug; correct?

23 A That does not say that, that's correct.

24 Q And the conclusion that you stated at page 8
25 is not inconsistent with the conclusion that the

1 undervote was due to the ballot design placed on the
2 iVotronic voting machines in Sarasota County; correct?

3 A It's not inconsistent with that being one
4 cause, yes, sir.

5 Q And at page 9 of your declaration you state
6 that, the fact that the undervote rate in the
7 Congressional District 13 race was so much higher in
8 Sarasota County than the rest of District 13, that you
9 can rule out the possibility that the undervote rate
10 was caused by voter revulsion to a negative campaign;
11 correct?

12 A Yes, sir.

13 Q And I believe you testified to that earlier
14 today?

15 A Yes, sir.

16 Q However, the fact that the undervote rate in
17 the Congressional District 13 race was so much higher
18 in Sarasota County than the rest of District 13 does
19 not allow you to rule out that ballot layout was the
20 cause of the undervote in Sarasota County; correct?

21 A Could you repeat that question again? I
22 apologize.

23 Q Sure. The fact that the undervote rate in
24 Congressional District 13 was so much higher in
25 Sarasota County than the rest of the District 13, that

1 fact alone does not allow you to rule out ballot
2 layout as the cause of the undervote; correct?

3 A That fact alone, that's correct.

4 Q On page 2 of your declaration you state that
5 the undervote rate in the 13th district was anomalous
6 when compared to other county-wide races that were
7 contested in Sarasota County; correct?

8 A Yes, sir.

9 Q That conclusion was based only on your
10 comparison of undervoting in county-wide races in
11 Sarasota County to that of undervotes in the 13th
12 district; correct?

13 A Yes, sir.

14 Q That statement does not mean that the
15 undervote rate in the 13th district was anomalous when
16 compared to the undervote rates in other counties and
17 other races within the 13th district; does it?

18 A Could you repeat that question again? I
19 believe I got it, but I want to make sure I got it.

20 Q The statement that I read to you from your
21 declaration, that doesn't mean that the undervote rate
22 in the 13th district was anomalous when compared to
23 the undervote rates in other counties in other races
24 within the 13th district; correct?

25 A To the best of my knowledge, that's correct,

1 yes, sir.

2 Q At page 2 and also page 14 of your declaration
3 you state that you can estimate the number of excess
4 undervotes that were created in the Congressional
5 District 13 race because of problems associated with
6 the use of the electronic voting machine; correct?

7 A Yes, sir.

8 Q In your discussion of the key conclusions for
9 items 1 through 4 in your November 20 declaration, you
10 never identify any specific problems that are
11 associated with the use of electronic voting machines
12 that caused excessive undervoting; did you?

13 A No, sir, I did not.

14 Q And it would be fair, I think, to characterize
15 the work you have performed as a statistical analysis
16 of the undervote; would that be correct?

17 A Yes, it is.

18 Q You have no statistical evidence that a
19 software bug caused the excessive undervote in
20 Sarasota County; correct?

21 A I want to be precise in my answer. The
22 statistical evidence, if I may elaborate just a bit,
23 the statistical evidence I have is about the
24 behavioral voters using particular types of machines.
25 So as far as the statistical evidence is concerned

1 presented in this report, it provides no direct
2 evidence of any particular causes.

3 Q Thank you. And it certainly provides no
4 direct evidence of any problem with the source code or
5 any software bugs or even any hardware malfunction;
6 does it?

7 A It does not deal with those things directly,
8 no, sir.

9 Q Now, on pages 2 through 3 of your declaration
10 that starts at paragraph 4, you conclude that, the
11 excessive undervote in Sarasota County, coupled with
12 the support received by Jennings, makes it likely
13 that, had the electronic machines not malfunctioned,
14 that Jennings would have won; correct?

15 A Yes, sir. That's what it says.

16 Q That's the first time in your declaration,
17 sir, that you use the term and refer to the machines
18 malfunctioning.

19 A Yes, sir.

20 Q The text that accompanies that summary out of
21 number 4 is at pages 24, runs through the top of page
22 35 of your report; does it not?

23 A Yes, it does.

24 Q And nowhere in the text supporting your
25 conclusion do you provide any evidence that the

1 electronic voting machines actually malfunctioned as
2 you stated in your summary of your point; isn't that
3 correct?

4 A Well, there is no evidence of a physical
5 malfunction of the machines, if that's what the
6 question is.

7 Q In fact, in your text, Doctor, you didn't
8 mention anything about a malfunction in that section
9 in your report; did you?

10 A I mention nothing about a physical
11 malfunction, no, sir.

12 Q The only place you mentioned it was in your
13 little keynote summary, which heads that section of
14 your report.

15 A That's the only place I used that word, yes,
16 sir.

17 Q Yes. On page three of your declaration, at
18 paragraph five, you state that, the level of
19 undervoting in Sarasota County greatly exceeds the
20 undervotes that were estimated to have occurred in
21 other well established cases of voter confusion;
22 correct?

23 A Yes, sir.

24 Q You then state that, this conclusion suggests
25 a possibility that the undervotes in Sarasota County

1 were not solely due to voter confusion, but other
2 factors related to machine malfunction; correct?

3 A Yes, sir.

4 Q The text of your declaration that discusses
5 those two conclusions, Doctor, is at pages 35 through
6 9; correct -- 35 through 39; correct?

7 A Thirty-five to 39. Yes, sir.

8 Q You provide no evidence or information
9 regarding any machine malfunction in those pages of
10 text; do you, sir?

11 A No, I do not.

12 Q And saying that something is a substantial
13 possibility is not the same as saying that something
14 was a substantial cause; correct?

15 A Well those are two different statements, and
16 they are not the same thing.

17 Q And in the text at pages 35 through 39, you
18 never identify whatever factors there are that you
19 contend are related to machine malfunction; correct?

20 A Not in that section, no, sir.

21 Q Now, at page 36 you do identify two possible
22 causes of the undervotes in Sarasota County in the
23 Congressional District 13 race. And one of the
24 possible causes that you identify is machine
25 malfunction; correct?

1 A Excuse me. Is that page 36?

2 Q Yes.

3 A Could you -- could I ask where in particular
4 in the --?

5 Q Perhaps I've written down the wrong page. Let
6 me check.

7 A I believe you are right.

8 Q In the particular case, the vote in Sarasota
9 County, there are two major potential explanations for
10 why there were so many excess undervotes.

11 A Yes, sir.

12 Q One possible explanation is voter confusion.
13 The second possible explanation is machine
14 malfunction.

15 A Uh-huh.

16 Q Now, in your declaration, there at page 36,
17 you support your conclusion of a possible cause of
18 machine malfunction by relying on a newspaper report
19 stating that most callers to the newspaper reported
20 voting problems; correct?

21 A That's the citation in that paragraph, yes,
22 sir.

23 Q That's the sole basis in that section of your
24 report for a conclusion that there was a machine
25 malfunction; correct, sir?

1 A That is -- that's the citation, yes, sir.

2 Q You didn't actually interview any voters in
3 the Congressional District 13 race to determine the
4 nature of the difficulties supposedly encountered; did
5 you?

6 A No, sir.

7 Q And you cannot identify even one voter who
8 encountered difficulties using the review screen
9 that -- to such an extent they were prevented from
10 casting a ballot in the Congressional District 13
11 race; correct?

12 A That's correct.

13 Q You don't even know how many voters actually
14 called the newspaper and reported the voting problems
15 that you based your conclusion for machine malfunction
16 on; do you, sir?

17 A Off the top of my head, no, sir.

18 Q One of the possible causes of the undervote
19 rate in Sarasota County that you identified is voter
20 confusion caused by ballot layout; correct?

21 A Yes, sir.

22 Q And your declaration then discusses two
23 documented cases that you claim are the best known
24 cases of ballot design leading to voter confusion;
25 correct?

1 A Yes, sir.

2 Q And you testified about those earlier here
3 today. And that's the butterfly ballot in Florida in
4 the 2000 presidential election and a race in
5 California where a voter was asked to choose a
6 candidate from a list of 135 candidates; correct?

7 A Yes, sir.

8 Q Looking only at those two cases, that's a
9 fairly small sample size; isn't it, sir?

10 A Well, these sorts of events have not been well
11 documented, sir.

12 Q Now, let's talk about the California example
13 for a minute. And as you said, that was where there
14 was a large list of candidates with lesser known
15 candidates getting the benefit of being close -- in
16 close proximity to better known candidates. You call
17 that an adjacent mistake?

18 A Adjacency error.

19 Q Now, the ballot design in California wasn't
20 anywhere close to the ballot design that you saw down
21 in Congressional District 13; was it?

22 A No. It was quite different.

23 Q And really the problem in the California
24 example involved an issue of people voting for the
25 wrong person, not an undervote issue; was it?

1 A That was a problem of people making mistakes,
2 and they actually in fact voted --

3 Q So you're analyzing a California case where
4 voters are mistakenly voting for the wrong person and
5 trying to draw a comparison to an undervote situation
6 in Sarasota County; is that correct?

7 A Well I am trying to get an estimate of the
8 size of these, yes, sir.

9 Q You're trying to get an estimate in size by
10 using a race that doesn't involve an undervote and
11 taking that estimate and applying it to Congressional
12 District 13; are you not, sir?

13 A I am using it as a comparison, yes, sir.

14 Q The Palm Beach butterfly ballot that you spent
15 some time testifying about today, once again, the
16 design of that ballot is not at issue in the
17 Congressional District 13 case; is it?

18 A No, it is not.

19 Q And once again, didn't the poor ballot design
20 in that case result in votes being cast for the wrong
21 person rather than being an undervote?

22 A Mostly for the wrong person or overvotes, very
23 little about undervotes, yes, sir.

24 Q Then you talked about one other situation, and
25 that is where candidates who are listed first on the

1 ballot sometimes pick up more votes than folks who
2 appear lower down in the listing of candidates;
3 correct?

4 A That's correct.

5 Q Every ballot has to have somebody listed
6 first; don't they?

7 A Yes, sir, they do.

8 Q And that's not really an issue of voter
9 confusion caused by poor ballot design?

10 A Well it is about voters' eyes being drawn to
11 one place or the other. I think it's relevant to
12 confusion. It's not about confusion.

13 Q As you say, every ballot, somebody has to be
14 shown first?

15 A Somebody is going to be first, and somebody is
16 going to be second, yes, sir.

17 Q And when -- in those situations, somebody may
18 vote for the candidate listed first on the ballot for
19 reasons other than being confused; correct?

20 A There are other reasons, yes, sir.

21 Q So that example where you're talking about
22 somebody being first on the ballot, that really has
23 nothing at all to do with poor ballot design causing
24 an undervote?

25 A I think it does, because it gives us an idea

1 about how many voters can be influenced by the design
2 of the ballot.

3 Q Did you do any work with regard to the
4 demographics of the precincts in Sarasota County where
5 the undervotes occurred, sir?

6 A I did some work that had some racial
7 characteristics of the primaries. That's the
8 demographic work I was able to do, yes, sir.

9 Q In fact, the rate of voter confusion may be
10 affected by -- or the demographics of a precinct may
11 account for some of the voter confusion that occurs;
12 correct?

13 A Demographics can affect how one approaches a
14 ballot, yes, sir.

15 Q Less educated voters may find a particular
16 ballot to be more confusing than educated voters?

17 A That could be, yes, sir.

18 Q And elderly voters could consider a ballot to
19 be more confusing than younger voters; correct?

20 A That could be.

21 Q Have you testified as an expert before in
22 election contests, sir?

23 A No, sir, I have not.

24 MR. THOMAS: That's all the questions I have.

25 MR. BURHANS: Your Honor, we've been going for

1 a little bit. I would just ask if the court or
2 witness would like to take a quick break at this
3 time.

4 THE COURT: Would you like a few minutes, sir?

5 THE WITNESS: I would appreciate it.

6 (Discussion off the record).

7 (Short recess).

8 THE COURT: Go ahead.

9 CROSS EXAMINATION

10 BY MR. BURHANS:

11 Q Thank you, Your Honor. Good afternoon,
12 Professor Stewart. My name is Glenn Burhans. I
13 represent Vernon Buchanan. If you would indulge me
14 for a minute, I would like to explore -- I want to see
15 if you will agree as a basic tenet of any scientific
16 expert's research practices in forming an opinion, and
17 that is basically, the opinion is only as good as the
18 data upon which the expert relies, as well as the
19 methodology that the expert applies to the data;
20 correct?

21 A Yes.

22 Q That's really the old GIGO principle, garbage
23 in, garbage out?

24 A Correct.

25 Q Now can you characterize for me your

1 estimation of the reliability of the data that you've
2 used in your calculations?

3 A I've used a lot of different data. If you
4 would like, I can move through that. The -- I trust
5 that the election returns provided by the counties are
6 the election -- are accurate election returns.
7 Likewise, I trust that the ballot image data and that
8 the machine logs that were provided by the county were
9 also the actual data and are high quality. And they
10 appear to be all of high quality and consistent.

11 Q So you have no reason to doubt the reliability
12 of the data provided to you in this case? And I will
13 be specific. Let's talk about the ballot images. You
14 have no reason to doubt the validity of the ballot
15 images and the data contained therein?

16 A I've compared that against the returns, for
17 instance, and they're consistent, yes, sir.

18 Q And the same question for the audit logs that
19 you've reviewed or the event logs that you've
20 reviewed, you have no doubt as to the reliability of
21 those materials?

22 A They appear to be genuine, and they appear to
23 be reliable.

24 Q So we can agree that the data basis for your
25 opinion in your view is quite sound?

1 A I think the data are very good here, yes.

2 Q When you talked about the voter abstention
3 hypothesis, do you recall that testimony? Let me
4 rephrase it. The theory that voters were turned off
5 to the election because of the nastiness --

6 A Right, yes, sir.

7 Q And you didn't perform any poll in the county
8 to determine voter reaction to a race; did you?

9 A I did not, no, sir.

10 Q And you didn't interview a single voter to
11 determine their attitude towards the nastiness of the
12 race; did you, sir?

13 A No, I did not.

14 Q In fact, you didn't do anything to ascertain
15 voter reaction to the nastiness of the race, to the
16 extent that there was any, except crunching numbers
17 and say that, well, statistically voter abstention or
18 voter distaste is not a viable hypothesis?

19 A That was a basis that I drew in my
20 conclusions, yes.

21 Q I think you defined undervote as a situation
22 where the voter does not choose a candidate; is that
23 correct?

24 A An undervote is when a -- strictly speaking,
25 is when a legal vote is not recorded for a voter.

1 Q Well didn't you say it was when the voter does
2 not choose a candidate?

3 A I may have said that, yes.

4 Q So you misspoke?

5 A I was not being precise there. What I usually
6 say when people ask me to define an undervote is to be
7 very precise and note that it's when a legal vote is
8 not reflected for a candidate because of the lack of a
9 choice for any of the candidates on the ballot. It's
10 a point where sometimes you have to use the word
11 "choice," but I want to make it very clear that
12 sometimes there is a blank -- and actually in
13 Massachusetts I would call it a blank, because we use
14 paper, and things can actually be blank.

15 The idea sometimes there is a blank because of
16 a conscious choice, and sometimes it's for other
17 reasons.

18 Q Thank you for the clarification. And would
19 the same clarification apply to your definition of an
20 excess undervote?

21 A A similar definition would apply, yes. It's
22 when the election officials record, observe multiple
23 votes in a race, more votes cast in the race by a
24 voter than they are legally allowed to do.

25 Q You use the phrase, "legal vote." If you

1 wouldn't mind telling us what you -- how you define
2 that term, "legal vote."

3 A When I use that term, and I use it -- I've
4 used that term in my research.

5 MR. HIRSCH: Objection, Your Honor. This is
6 not a witness on the law.

7 THE COURT: He used the term. I will let him
8 explain why he uses it. I realize he's not an
9 attorney. We're not asking for a legal opinion.
10 We're asking for his definition.

11 A I've used that term in my research before to
12 make it clear to an academic audience that there are
13 oftentimes various standards in the world used by
14 election officials to determine what counts as a vote
15 and what --

16 BY MR. BURHANS:

17 Q How are you using it here in your testimony
18 today?

19 A I am using it in the way as an academic.

20 Q What does the phrase mean, "legal vote," as
21 you've used it here today?

22 A As I use it here today, a legal vote, when I
23 refer to legal vote, I mean that a vote that, say, the
24 supervisor of elections in a particular county would
25 regard as being a legitimate vote in favor of one

1 candidate or the other.

2 Q And that would be under the applicable state
3 law? Is that what your reference to what the
4 supervisor of the county canvassing
5 commission considers to be a legitimate vote under
6 state law?

7 A That's typically how I would use it, yes, sir.

8 Q Do you know what a legal vote is under Florida
9 law?

10 A I have not studied Florida law, no, sir.

11 Q We talked about normal undervotes and excess
12 undervotes. And if I understand your testimony
13 correctly, the normal undervote is what you would
14 expect to see absent the occurrence of some sort of
15 peculiar happenstance. I think you used the word
16 "peculiar happening"; is that correct?

17 A Yes, sir.

18 Q And the excess undervote you defined as the
19 amount of undervote above the formal; correct?

20 A Yes, sir.

21 Q So your definition presupposes some
22 malfunction or peculiar happening; correct?

23 A It presupposes some peculiarity associated
24 with an election.

25 Q So if there is no peculiarity, in this case a

1 malfunction, then wouldn't the excess undervote really
2 just be normal?

3 A An excess undervote can only be defined with
4 respect to a particular race. But the normal
5 undervote can only be defined with respect to a
6 particular race, particular office. The excess
7 undervote can only be defined with respect to a
8 particular election year for that office.

9 Q Well let me ask it to you this way, then,
10 Doctor. Absent this peculiar happening, you cannot
11 have an excess undervote; correct? And that's because
12 the presupposition in your definition is the
13 occurrence of this peculiar happening?

14 A Without a peculiar happening there cannot
15 be -- I don't -- without -- well, without a peculiar
16 happening, by the definition here, you're not going to
17 observe an excess undervote.

18 Q I think you testified again that in this
19 instance we had a normal undervote of about 3 percent
20 and an excess undervote of approximately 12 percent;
21 is that correct?

22 A Yes, sir.

23 Q So if there were some peculiar happening,
24 i.e., a malfunction, we would expect to see those
25 undervote percentages, for example, in the excess

1 undervotes, the same percentages anytime we ran
2 elections on that machine?

3 A No. The way that I would define a normal
4 undervote would be what you would observe if you
5 ran -- if you could hypothetically rerun that election
6 time and time and time again under a variety of
7 circumstances with a variety of candidates across --
8 either across a long period of time, for instance.

9 Q And the same would be true with respect to the
10 excess undervote, that if you could theoretically
11 rerun the election time after time after time again,
12 you would see the same 12 percent undervote in that
13 result?

14 A If we observed 12 percent undervote across a
15 variety of races under different circumstances, that
16 would suggest that for that race, that office, the
17 normal undervote was 12 percent.

18 Q Well I'm not talking about normal, sir. I'm
19 talking about if -- I understand what you're saying.
20 But I'm asking you about the excess undervote. If we
21 could run the race over and over and over again, we
22 would expect to see the same 12 percent excess
23 undervote rate each time we reran that election?

24 A If you reran it under precisely the same
25 circumstances in every respect, I would imagine you

1 would get exactly the same results, if that's what
2 you're asking.

3 Q When you were asked whether Christine Jennings
4 would have won absent some sort of malfunction, you
5 said, we can't know for sure. We can only estimate
6 how voters would have voted had there been a
7 malfunction. Did I capture the essence of your
8 testimony correctly, sir?

9 A I believe so.

10 Q Now, you didn't actually analyze how voters
11 voted to reach that conclusion; correct? You just
12 speculated, based upon statistics, how they would have
13 voted?

14 A I used statistical models to estimate how they
15 would have voted, yes, sir.

16 Q You never asked a single voter for whom they
17 intended to vote for in this election; did you?

18 A I did not. Directly I did examine how they
19 cast ballots in other races, though.

20 Q And you cast ballots in other races by
21 reviewing the ballot images?

22 A Yes, sir.

23 Q And you consider your analysis, based upon
24 that review of the ballot images, to be accurate?

25 A Yes, I do.

1 Q So if I'm correct in understanding you, you
2 did not apply some sort of standard to determine voter
3 intent; is that correct?

4 A Could you ask the question again?

5 Q Sure. You -- in looking at the ballot images
6 to look at voting patterns, you did not actually apply
7 some sort of objective standard that could be applied
8 to determine the voter's intent in any given race?

9 A Well I did apply an objective standard, and
10 that objective standard was to observe how people --
11 to take the class of people who had not undervoted in
12 the 13th Congressional race, observe their partisan
13 voting behavior on the ballot, and then I made an
14 assumption. And the assumption was that, among the
15 excess undervotes that we could recovery in this -- in
16 this exercise, that among these recovered excess
17 undervotes, that they would have -- these people would
18 have voted at the same rate for Jennings or Buchanan
19 as corresponding people who had in fact -- in fact,
20 you know, had a ballot recorded for them in the 13th
21 district.

22 Q And that was not done by asking voters how in
23 fact they would have voted or how in fact they did
24 vote in that race; correct?

25 A That is correct.

1 Q And so my question is, you have not applied
2 any standard that could be used to determine voter
3 intent?

4 A Well maybe it's a difference of definition of
5 any standard. But I applied rules that I think are
6 reasonable, given the way that academic researchers in
7 elections study these things.

8 Q You can't prove the actual number of excess
9 votes in this case; can you?

10 A I cannot prove that it was a particular
11 number, no, sir.

12 Q And as a matter of fact, for that reason you
13 offer a different range of numbers, of this so-called
14 excess vote, and by applying a comparison at different
15 levels of excess undervotes, you were able to
16 calculate the net gain or loss for the candidates;
17 correct?

18 A At different levels of excess undervote, yes.

19 Q Can you tell me which of those is right?

20 A I can tell you the one that I believe is the
21 closest to being correct.

22 Q And which one is that?

23 A I believe the one that's closest to being
24 correct is the one that's reflective of the estimated
25 14,000 excess undervotes.

1 Q That would be the highest number; correct?

2 A That would be the highest number.

3 Q What's the basis for that assumption?

4 A The basis for that assumption was by -- I'm
5 going through a technique first of all that tried to
6 estimate what the most likely size of the excess
7 undervote was, given the relationships that I observed
8 among the various races in Sarasota County. So that
9 first of all pegged the size of the excess undervote.

10 I assumed -- I had to make an assumption, and
11 I assumed that the relationship governing the
12 undervote rate for the congressional district race fit
13 among all of the other relationships, among all the
14 other county-wide ballots in the county. So I wasn't
15 guessing; I was using a technique using
16 well-established techniques to estimate these things.

17 Q It was an assumption where you didn't bother
18 asking any voter how they voted or how they intended
19 to vote; correct?

20 A I did not rely on asking voters to come up
21 with that technique.

22 Q In fact, you can't point to any one voter and
23 tell us how they voted or intended to vote; correct?

24 A Absolutely I can't. I don't know how any
25 individual voter voted in this race.

1 Q Now, Doctor, you will recall there were
2 significant levels of undervoting in other races
3 besides Congressional District 13; correct?

4 A Significant in Sarasota County or in other --

5 Q Yes, sir.

6 A Yes, sir, there were significant undervote
7 rates in other races.

8 Q You see that in a lot of judges races;
9 correct?

10 A Judicial retention races, yes.

11 Q I see undervote rates of 23 percent, 24
12 percent. Is that in keeping with your recollection?

13 A That sounds right.

14 Q Twenty-seven percent?

15 A Yes.

16 Q Can you tell me what caused the undervotes in
17 those certain circumstances?

18 A There is a lot of research in political
19 science on this. And judicial undervotes tend not to
20 receive a lot of undervotes, and it's believed --

21 Q I want to know what your explanation is for
22 the cause of these undervotes in this race, if you
23 have one.

24 A My explanation would be drawn from political
25 science research and has to do with the low

1 information associated with the offices and the fact
2 that they are not partisan offices. Those are factors
3 that tend to produce high undervote rates in general.

4 Q And there is no other reason that you're aware
5 of as to what caused these undervotes?

6 A There could be other reasons. But the two
7 that I mention to you are the two that a political
8 scientist would immediately reach to explain the high
9 undervote rates in those sets of races.

10 Q You mention the example from 2000 of the
11 butterfly ballot as being, I think you called it the
12 paradigmatic example?

13 A Yes.

14 Q I'm not a big science guy, so I can't handle
15 those big words. Let me ask you this: It's your
16 understanding that in that election contest, the big
17 issue was whether the court can and should go back to
18 a pool of punch card ballots to apply -- that were
19 determined by the canvassing board to be undervotes
20 and then whether we can go back and look at those
21 ballots, apply a standard to discern voter intent, and
22 then determine whether they should be counted as legal
23 votes?

24 A I don't recall -- I mean, I don't recall the
25 legal details of that case. But if you say -- if

1 that's your characterization, I have no reason to
2 doubt you.

3 Q Can you tell me where, from the pool of
4 undervotes, we can look at then and determine the
5 voters' intent in this case?

6 A In this case we cannot determine the intent of
7 any individual voter. The exercise that I have
8 engaged in is an attempt to estimate on average, given
9 characteristics of voters, how those -- how that pool
10 of voters would have cast their ballots in this
11 particular race.

12 Q Let me be clear. I think you said, you cannot
13 determine how any voter voted. You can't determine
14 the intent of any -- let me back up.

15 Is it your testimony today that you cannot
16 determine the intent of any voter?

17 A I cannot determine the intent of any named
18 voter in Sarasota County.

19 Q I'm not asking about named voter --

20 THE COURT: Counsel, that's the fourth time
21 you've asked that question. Move on. He has
22 answered it four times the same way. Move on.

23 MR. BURHANS: Thank you, Your Honor. I will
24 move on.

25 BY MR. BURHANS:

1 Q According to your analysis, I think you
2 reached the conclusion that, if only 10 percent of the
3 excess undervote can be attributed to machine
4 malfunction, the result would have been for Jennings;
5 is that correct?

6 A That's the -- yes, on average, we would expect
7 Jennings to prevail in that case, yes, sir.

8 Q Can you tell the court what percentage of the
9 excess undervote is attributable to the voter
10 abstention or turnoff hypotheses referenced in
11 Professor Wallach's report?

12 A I've done no work that's attempted to identify
13 that number.

14 Q Are you able to tell the court the number of
15 excess undervotes attributable to the flawed ballot
16 design theory referenced in Mr. Wallach's report?

17 A I've done no research to try to parse out the
18 different contributing factors to the excess
19 undervote.

20 Q Have you -- or can you tell the court what
21 percentage of excess undervotes is attributable to the
22 malicious code hypothesis put forward by Mr. Wallach
23 in his report?

24 A I have no data about that.

25 Q And can you tell the court what percentage of

1 excess -- what percentage of the excess undervotes is
2 attributable to this software bug that Dr. Wallach
3 references in his report?

4 A I have no evidence about that.

5 Q Is there any way that you can tell the court
6 what percentages are attributable to any of these
7 hypotheses?

8 A I know of, off the top of my head, no way in
9 which you could test those. But I am not -- I am not
10 an expert in how those bugs would manifest themselves
11 in the voting record.

12 Q Last question, Mr. Stewart. Can you tell this
13 court how many legal votes that were cast for
14 Ms. Jennings but were not counted in this election?

15 A Can I tell them for sure? I'm sorry. Would
16 you repeat the question.

17 Q Yes, sir. Can you tell the court the number
18 of legal votes cast for Christine Jennings in this
19 election that were not counted amongst the certified
20 returns?

21 A Well, again, going back to my definition
22 earlier of the way that I regard legal votes, which is
23 not maybe, probably is not the Florida definition, and
24 when I do my research, I rely on the certified totals
25 of the supervisor of elections. So I have been using

1 the certified totals of the supervisor of elections.

2 Q You would agree that the certified totals of
3 the election contain the legal votes in this case?

4 A I believe that the -- well they certainly
5 reflect the legal outcome. And if they are not
6 overturned, then she will not be elected to Congress.

7 Q Let me circle back; I think we had a little
8 disconnect. Earlier you said that your definition of
9 legal vote would somehow incorporate whatever the
10 state's definition of legal vote is; correct?

11 A It would try to, yes, sir.

12 Q So sitting here today with that in mind, can
13 you tell the court the number of legal votes that were
14 cast for Christine Jennings in this race that were not
15 counted amongst the certified returns?

16 MR. HIRSCH: Your Honor, I think this is asked
17 and answered. He has gone through this multiple
18 times.

19 THE COURT: The question he's asking he can't
20 answer without saying no and an explanation. He
21 doesn't want to accept his explanation. That's why
22 he keeps asking the same question over and over.

23 Now, move on, counsel. The answer is, he
24 doesn't know the 355 people who would have voted
25 for anyone. Okay? Because that's what you're

1 asking.

2 MR. BURHANS: No further questions. Thank
3 you.

4 THE COURT: Anyone else?

5 CROSS EXAMINATION

6 BY MR. LABASKY:

7 Q Doctor, let me see if I can find 1A quickly
8 here. In conjunction with any part of your research,
9 did you do a survey or a demographic study or anything
10 of that nature with respect to the total makeup of the
11 Sarasota County voting population?

12 A No, I did not do a survey in any systematic
13 way.

14 Q Do you know how many registered voters there
15 are in Sarasota County?

16 A Not off the top of my head, but I have that
17 information, yes, sir.

18 Q Do you know how many registered Democratic
19 voters there are in Sarasota County?

20 A Again, I don't have that information off the
21 top of my head.

22 Q I assume, therefore, you don't know how many
23 registered Republicans or Independents there are. If
24 I was to tell you that there were 76,600, give or
25 take, registered Democrats in Sarasota County, would

1 you be willing to accept that for the sake of my next
2 couple questions?

3 A Yes, sir.

4 Q Do you know what the voter turnout was in this
5 election in Sarasota County?

6 A As a percentage of registered -- I do not
7 know -- I do not know the percentage, no, sir.

8 Q Great, thank you.

9 A I mean other than just adding this up.

10 MR. LABASKY: No further questions.

11 MR. ELBRECHT: No questions.

12 MR. WINSOR: No further questions.

13 THE COURT: Redirect?

14 REDIRECT EXAMINATION

15 BY MR. HIRSCH:

16 Q Professor Stewart, directing your attention
17 back to Exhibit 5, what is your best estimate of the
18 number of undervotes recorded in Sarasota County that
19 under normal circumstances would have been recorded as
20 votes for Jennings?

21 A The number that I estimate that would have
22 been recorded for Jennings is 8,776.

23 Q There was some confusion earlier I think in
24 your direct where you may have said that the butterfly
25 confused 5 percent of the Palm Beach electorate, and

1 here only 12 percent of the electorate was confused.

2 A Ah, yes.

3 Q Can you explain what you meant to say there,
4 if that is not what you meant to say?

5 A That is not what I meant to say. What I meant
6 to say in that case is that in Palm Beach County we
7 had a 5 percent confusion rate. In this case, in the
8 case of Sarasota County, we have 12 percent of voters
9 who are in -- you know, cast excess undervotes. But I
10 did not mean to imply that those voters were in fact
11 confused.

12 Q You were searching for the explanation of
13 those undervotes?

14 A Exactly. That's why we're here.

15 Q Professor, were you claiming that you believe
16 the Florida butterfly to be more confusing or less
17 confusing than the Sarasota County congressional
18 ballot?

19 A I think it is, on the face of it, a more
20 confusing ballot than the Sarasota ballot.

21 Q Did it warn voters that they had overvoted in
22 Palm Beach?

23 A No, you were not warned that you had
24 overvoted.

25 Q If a Gore voter unintentionally voted for a

1 Buchanan voter, was there a warning?

2 A There was not.

3 Q In the California ballot, if somebody meant to
4 vote for a candidate and inadvertently voted for the
5 adjacent candidate, was there any kind of warning?

6 A No, there was not.

7 Q Was the California ballot, in your judgment,
8 more confusing or less confusing than the
9 congressional ballot in Sarasota County this year?

10 A It appears to be much more confusing.

11 Q On what day did we ask you, Professor Stewart,
12 to begin preparing your declaration?

13 A I believe that was -- I will have to count
14 back a bit.

15 Q Approximately?

16 A Approximately, well, see, the 20th I believe
17 was the date that I -- that it was filed. So if it
18 was filed on that Monday, if that was a Monday, I was
19 asked on the preceding Thursday to begin preparing
20 that declaration.

21 Q Thursday the 16th?

22 A That would be the 16th.

23 Q And when did you complete it?

24 A I completed it the Sunday evening of the 19th.

25 Q And within a couple of days after that, is

1 that when you first got the ballot image and event
2 logs?

3 A I believe so. It was soon after, but it was
4 after the time that I had gotten -- I did the
5 declaration.

6 Q Before you got those electronic logs, was the
7 most precise information you had precinct by precinct?

8 A Yes, it was.

9 Q And afterwards, did you have information that
10 was machine by machine and voter by voter?

11 A Yes, I did.

12 Q Is it your understanding that when a voter
13 comes to a polling place in Sarasota County, that
14 they're assigned to a particular machine based on
15 their age?

16 A No.

17 Q Or based on their gender?

18 A I don't -- I assume they are not.

19 Q Or based on their race?

20 A I assume they are not.

21 Q Or their experience as voters?

22 A Likewise, I assume they are not.

23 Q Or their partisanship?

24 A I assume they are not.

25 Q So what is the significance of having the

1 information you did not have when you wrote your
2 declaration, the information that is machine by
3 machine and voter by voter, in reaching your final
4 conclusions?

5 A Well the significance of it is that it refers
6 to the physical reality of the machines themselves.
7 When you're talking about the machine data precisely,
8 it's the machines themselves.

9 Q Once you found the pattern exhibit on the
10 Exhibit 8B, the right-hand graph there, did that, in
11 your view, make it more likely or less likely that
12 machine malfunction had triggered at least part of the
13 high undervote rate?

14 A That evidence made it seem to me more likely
15 that a machine malfunction triggered the excess
16 undervote.

17 Q Did you then run equations to control for the
18 fact that different machines prepared on different
19 days were sent to different precincts?

20 MR. THOMAS: Leading, Your Honor. It's been
21 going on for a while.

22 THE COURT: It will take longer to argue it
23 than it will to answer the question. Go ahead.

24 A Yes, we did.

25 BY MR. HIRSCH:

1 Q What did you find?

2 A After we controlled for the precincts
3 themselves, the factors that I had discovered remained
4 statistically significant.

5 Q You said in your cross that 14,000 was the
6 highest number of --

7 A It was the highest number on the graph.

8 Q Could the number of excess undervotes have
9 exceeded 14,000?

10 A It could have, probably not by much, but it
11 could have.

12 Q Are you aware what Professor Herron estimates
13 it to be?

14 A I'm aware that he estimates it to be a little
15 bit higher, but not much higher, but 14,000 plus,
16 maybe as high as 15,000, roughly the same amount.

17 MR. HIRSCH: Excuse me one moment. May I
18 approach, Your Honor?

19 THE COURT: Absolutely.

20 MR. THOMAS: I do have an objection if he's
21 going to try to introduce new exhibits on redirect,
22 Your Honor. They weren't offered on direct.

23 THE COURT: They are kind of out of order,
24 counsel.

25 MR. HIRSCH: Your Honor, we didn't discuss

1 Charlotte County iVotronic ballots and how they may
2 have been confusing. That was raised for the first
3 time on cross. What I have put up is a picture of
4 the allegedly confusing page from Charlotte County.
5 So the redirect is aimed at a very specific point
6 raised in cross-examination.

7 MR. THOMAS: Point of clarification, we would
8 have a right to recross, then, Your Honor; is that
9 correct?

10 THE COURT: Yes, you would, on that limited
11 issue.

12 BY MR. HIRSCH:

13 Q Do you recognize the ballot screen in Exhibit
14 9?

15 A Yes. This is page 3 from the Charlotte County
16 voting machine.

17 Q And in what ways does it resemble or not
18 resemble page 2 of the Sarasota County ballot?

19 A Well, the way in which it resembles page two
20 of Sarasota County is that it has two races, a large
21 race and a small race, on it. The way that it does
22 not resemble it, in addition obviously that the races
23 are different, is that the small race is down below,
24 and the big race is up above.

25 Q And are you aware even roughly what the

1 undervote rates were on those two races in Charlotte
2 County on that page?

3 A Well the undervote rate in the governor's race
4 was very, very small, was in the neighborhood of 1
5 percent. The undervote rate in attorney -- in the
6 attorney general race, as I recall, was in the mid
7 20s, say 25 percent, I believe.

8 Q And does that set of figures indicate to you
9 that there is statistical proof showing this is about
10 voter confusion or about machine failure, or is it
11 inconclusive?

12 A I think it's inconclusive, because there are
13 competing ways of thinking about this.

14 Q Can you explain what you mean by that?

15 A Well, on the one hand, I think, as you said,
16 one would point out that there are certain
17 similarities between these two ballots, and we would
18 want to attribute those similarities to the design and
19 therefore to a human factors or a voter confusion
20 explanation.

21 At the same time, there are similarities in
22 the sense -- the obvious similarity is that these are
23 both being cast on iVotronic machines. And finally,
24 there is the -- well I will stop there. They're being
25 cast on iVotronics machines. So I don't know what the

1 important thing here is.

2 The difference is in the different candidates;
3 the similarities are in the machines.

4 Q Are you aware of any page of the Sarasota
5 ballot that has more ballot lines than page two of the
6 Sarasota ballot or page 3 of the Charlotte ballot?

7 A Sarasota has more lines?

8 Q Yes.

9 A I am not aware of that.

10 Q Finally, let me ask you about the three causes
11 we've been discussing; I will call them voter disgust,
12 voter confusion and machine malfunction. If the
13 voters -- are you asserting that no voters were
14 disgusted with this race, and no voters intentionally
15 abstained from it?

16 A No, I'm not asserting that at all.

17 Q Are you -- would absentee voters who voted on
18 paper ballots likely have been impacted in a similar
19 way to those who voted electronically if the issue was
20 voter disgust?

21 A Yes. That's what I would assume.

22 Q Would voter disgust be built into your normal
23 undervote figure or your excess undervote figure?

24 A It would be built into the normal undervote
25 figure.

1 Q So turning to the excess undervote, are you
2 claiming that voter confusion caused by ballot design
3 or anything else had no impact on the excess
4 undervote?

5 A I don't -- I don't see a reason to exclude
6 voter confusion as one of the contributing factors.

7 Q Do you believe voter confusion could explain
8 all 14,000 of the lost votes?

9 A I think it's unlikely that it explains all of
10 it.

11 Q Do you believe that it's possible, based on
12 your analysis, including your analysis of ballot image
13 and event logs, that machine malfunction could explain
14 part or all of the 14,000 lost votes?

15 A I think it could explain part of it. I think
16 it could explain part of it, yes, sir.

17 Q Can statistics alone prove that machine
18 malfunction had no effect on the undervote rate?

19 A Statistics alone can't parse out these things.
20 You need to look more closely at the hypothesized
21 causes.

22 Q So it couldn't explain have no effect or total
23 effect?

24 A It couldn't explain the total effect. What we
25 want to do is, in the case of the software malfunction

1 hypothesis, examine the machines and the software in
2 the same way that you would like to dig deeper into
3 the human factors in order to examine the confusion
4 hypothesis.

5 Q What is the only way to find out, then,
6 whether machine malfunction might have changed the
7 outcome of this election, Professor --

8 MR. THOMAS: That calls beyond the expert of
9 this witness to testify --

10 THE COURT: I'm inclined to agree, counsel.
11 He said he was not an expert on software or
12 machines.

13 MR. HIRSCH: He was qualified as an expert on
14 voting technology, Your Honor.

15 THE COURT: Well that begs the question. We
16 know where you're going.

17 MR. HIRSCH: No further questions. Thank you
18 very much.

19 THE COURT: Cross?

20 MR. HIRSCH: Before I sit down, Your Honor,
21 if -- this being the end of my redirect, can I move
22 the body --

23 THE COURT: One through 9?

24 MR. HIRSCH: One through 9.

25 THE COURT: No objection? So received.

1 (Exhibit Nos. 1 through 9 were marked for
2 identification and received in evidence).

3 THE COURT: Recross?

4 MR. BURHANS: No, Your Honor.

5 MR. THOMAS: Very briefly.

6 RE CROSS EXAMINATION

7 BY MR. THOMAS:

8 Q I believe you testified you were retained on
9 the 16th, filed your declaration on the 20th; is that
10 correct?

11 A I -- I agreed to start working with the
12 campaign on the Friday after the election. I agreed
13 to write the declaration on the 16th.

14 Q Oh, so you actually started work considerably
15 before you started work on your declaration?

16 A I started looking at -- preliminarily at some
17 of the analysis, yes, sir.

18 Q Okay. Now, you're not testifying today that
19 the conclusions you've put in your declaration are not
20 worth the paper they're written on because you only
21 worked on them from November 16th to November 20th;
22 are you?

23 A I'm not saying that.

24 Q We're now 29 days past November 20th, and you
25 haven't prepared any additional supplemental

1 declaration and filed it with the court; have you?

2 A I have not done that, no, sir.

3 Q I do need one point of clarification. Your
4 chart, 8B, do I understand correctly --

5 MR. HIRSCH: Your Honor, I think this is
6 beyond the scope of redirect.

7 MR. THOMAS: I don't think so. I think he
8 talked about this chart.

9 THE COURT: You did talk about 8B.

10 MR. THOMAS: He did, Your Honor.

11 THE COURT: No, he didn't.

12 MR. THOMAS: I will move through it real
13 quick.

14 THE COURT: He didn't refer to 8B.

15 MR. THOMAS: He referred to this work being
16 done subsequent to his declaration.

17 THE COURT: Let me check some notes. Counsel
18 is correct. You did refer to 8B.

19 MR. THOMAS: Thank you, Your Honor.

20 BY MR. THOMAS:

21 Q At this point on the chart where there is
22 no -- not one of your bubbles, I believe you indicated
23 that was a day when only one machine was set up?

24 A Yes, sir.

25 Q And it had the absolute lowest undervote rate

1 of any machine that was set up?

2 A Of all -- no, I did not say that. That one
3 machine contributes one observation to the average for
4 that day. So that's the average for that day.

5 Q But that's the lowest you get when you do the
6 one machine, isn't that what you said, that the poli
7 workers, or whoever set the machines up, were more
8 careful when they were only setting up one machine a
9 day; you ended up with a lower undervote?

10 A The average for the day, yes, sir.

11 Q But up here you have one machine set up on
12 this day on your chart, and it comes up with the
13 absolute highest average for that day. Sir, this
14 chart is absolute nonsense in terms of these two --
15 what you're trying to show here; isn't that correct?

16 A I don't believe it's absolute nonsense,
17 because the trend there is absolutely established, it
18 seems to me, through the statistical analysis. The
19 statistical analysis was not based on looking at one
20 or two points; it was based on looking at all the
21 points together.

22 Q You were asked about the ballot in Charlotte
23 County.

24 A Yes, sir.

25 Q And you talked about the attorney general's

1 race, and you were asked about the high undervote in
2 the attorney general's race in Charlotte County.

3 A Yes, sir.

4 Q And you agreed that the undervote in that race
5 was higher than the undervote rate in Congressional
6 District 13; correct?

7 A Yes, sir.

8 Q Isn't it also true -- well actually didn't you
9 then say that the -- one of the reasons that that
10 probably happened was because they were using an
11 iVotronic machine?

12 A Well I did point out they were also using
13 iVotronics.

14 Q Yes, you did; didn't you?

15 A Yes, sir.

16 Q Did you also look at the undervote rate in the
17 attorney general's race in Lee, in Sumter County,
18 where they were not using iVotronics?

19 A I don't recall those numbers, sir.

20 Q Isn't it a fact, sir, that there was an
21 extremely high undervote rate in Lee and Sumter County
22 in the attorney general's race where the iVotronics
23 machine was not in use?

24 MR. HIRSCH: Your Honor, this question assumes
25 facts not in evidence and I think facts not

1 correct.

2 THE COURT: If he doesn't know, say, I don't
3 know.

4 THE WITNESS: I don't know.

5 MR. THOMAS: That's all I have, Your Honor.

6 MR. BURHANS: Nothing further, Your Honor.

7 MR. LABASKY: Nothing further, Your Honor.

8 MR. COFFEY: Dan Wallach is our next witness.
9 I'm going to turn to my colleagues to see if there
10 is any objection to the two documents, I handed
11 copies to them earlier, one which we propose is
12 item 10, would be a sample of what software looks
13 like. Looks like the other is a memorandum Bates
14 stamped by the state defendants, 0460, bearing the
15 date of November 15th, and that would be -- any
16 objection?

17 MR. DeGRANDY: Yes, Your Honor. We don't have
18 an objection as to the sample -- what did you call
19 it?

20 MR. COFFEY: Source code.

21 THE COURT: Exhibit 10?

22 MR. DeGRANDY: I do have an objection as to
23 the e-mail. It is clearly hearsay evidence. There
24 is no --

25 THE COURT: I don't know what it is.

1 MR. DeGRANDY: It purports to be an e-mail.
2 And it's communication from one person to another.
3 That is hearsay evidence. And unless they plan to
4 bring the individual, or they plan to bring the
5 individual who authored it, there is no need to
6 have this. Otherwise, I can't cross examine this.

7 THE COURT: Mr. Coffey, he has a valid point
8 there.

9 MR. COFFEY: Well, Your Honor, it's a public
10 record produced by the state defendants with a
11 Bates stamp. It appears to be a document of the
12 State of Florida. There are a number of people
13 whose names --

14 THE COURT: Do you have someone to call and
15 testify to show it is a document of the State of
16 Florida?

17 MR. COFFEY: Let me ask Mr. Antonacci if he
18 will verify that item 11 is a document produced by
19 the State of Florida as a true copy. If not, I
20 suppose we could call one of these people who is on
21 it, which include Dave Mann, Sue Cobb, Heidi
22 Hughes, and others, Dawn Roberts, all whose names
23 appear on this document. Are we going to have to
24 go through the exercise?

25 MR. DeGRANDY: Your Honor, if I may respond,

1 the document, usually when you're talking about
2 public records exceptions, you're talking about a
3 certificate. You're talking about proving the
4 existence of a document within a jurisdiction or an
5 agency.

6 This is being introduced for the purpose of
7 stating an opinion of the author regarding this
8 gentleman. I have a right to cross-examine that,
9 Your Honor. And if it's being introduced only for
10 the purpose of showing that this existed, and Your
11 Honor is not going to be asked to read it and
12 consider it, that's a different issue.

13 But the purpose of this is for these -- this
14 individual author's opinions regarding this
15 gentleman to be considered by the court. That's
16 rank hearsay and totally inappropriate.

17 MR. COFFEY: Your Honor, if they're
18 objecting --

19 THE COURT: Mr. Coffey, if you want it
20 entered, call the person that wrote it.

21 MR. COFFEY: Thank you, Judge.

22 Thereupon,

23 DAN SETH WALLACH
24 was called as a witness, having been first duly sworn,
25 was examined and testified as follows:

1 DIRECT EXAMINATION

2 BY MR. COFFEY:

3 Q Can you state your full name for the record.

4 A Dan Seth Wallach.

5 Q Can you give us a rundown on your academic
6 credentials, sir?7 A I earned a bachelor of science in electrical
8 engineering and computer science from the University
9 of California at Berkeley in 1993. I earned my
10 master's and Ph.D. from Princeton University; the
11 master's in '95, the Ph.D. in '98.

12 Q And your present job?

13 A I am an associate professor in the department
14 of computer science at Rice University.15 Q And have you ever had occasion to teach
16 courses, university level courses, on voting
17 technology as a university professor?

18 A Yes.

19 Q And what are the names of -- can you describe
20 some of those courses?21 A So I discuss voting in my general computer
22 security course, and I also, this semester, co-taught
23 a course with a political scientist and a
24 psychologist, whose title was Voting Systems Election
25 Administration and other related topics.

1 Q Is voting technology itself one of the
2 subjects upon which you provide instruction at the
3 university level?

4 A Yes, it is.

5 Q And in addition to your functions and
6 responsibilities as a member of the faculty, have you
7 also had an occasion to provide advice and scientific
8 analysis to any of the nation's boards that have
9 responsibility with respect to election technology?

10 A Yes, I have.

11 Q Can you give Judge Gary some examples of that?

12 A So I testified in front of a board called the
13 Technical Guidelines Development Committee, which was
14 vetted by Congress as part of the Help America Vote
15 Act in 2002 to help draft new standards for voting
16 systems.

17 I also spoke informally on the telephone and
18 via e-mail with employees of NIST, the National
19 Institute of Standards in Technology, who are
20 responsible for drafting those standards.

21 Q What is the Carter-Baker Commission on Federal
22 Election Reform?

23 A This refers to former president Jimmy Carter
24 and former secretary of state James Baker, III, who
25 together formed a panel also to consider issues in our

1 nation's election technology and administration and to
2 make recommendations for improvements on those.

3 Q Did you have any role with respect to their
4 work?

5 A Yes. I was an advisor, and I testified in
6 front of them.

7 Q And what is the Brennan Centers Voting Systems
8 Security Task Force?

9 A The Brennan Center is an organization
10 affiliated with New York University, and they were
11 similarly conducting a study where they considered a
12 number of expert opinions and produced recommendations
13 for how better to test an audit and consider the
14 security of electronic voting systems.

15 Q And have you provided any analysis or advice
16 to the Brennan Center Voting Systems Security Task
17 Force?

18 A Yes, I have.

19 Q And what is ACCURATE?

20 A ACCURATE is a national science foundation
21 funded research center, of which I am the associate
22 director, and we have principal investigators at Johns
23 Hopkins, Rice University, Stanford, Berkeley and the
24 University of Iowa. Collectively what we are working
25 on is improvements to the technology and policy and

1 human factors of voting system.

2 Q How does the size and importance of this grant
3 compare to other grants given to academic groups with
4 respect to voting technology?

5 A There are three main forms of national science
6 foundation grants, and this is a research center,
7 which is the largest form of grant that they offer.

8 Q And did the national science foundation, in
9 providing this grant, approve you as either the
10 assistant director or as a principal investigator?

11 A Yes, they did.

12 Q And have you published any research papers in
13 connection with electronic voting security issues?

14 A Yes, I have.

15 Q And can you -- in the course of any of those
16 publications, have you ever actually had the occasion
17 to review source code for electronic voting computer
18 software?

19 A Yes, I have.

20 Q And which paper was that?

21 A This was an analysis of an electronic voting
22 system that I produced in co-authorship with Avi
23 Rubin, Adam Stubblefield and Tadayoshi Kohno.

24 Q In connection with the Diebold paper, did it
25 have an impact to your knowledge, or --

1 A As a direct result of the paper we wrote, the
2 states of Maryland, Ohio and California commissioned
3 their own studies --

4 MR. DeGRANDY: Objection, Your Honor. I don't
5 know how this witness can know that or testify what
6 is in the minds of the elected appointed officials
7 of those states.

8 MR. COFFEY: Your Honor, if I may briefly
9 respond. He's a scientist and an academic, and
10 experts are not required to have firsthand, direct
11 knowledge of everything they testify about. But
12 it's certainly relevant to an expert's work to know
13 what impact they're having and to be in touch with
14 election agencies. That's the main function --

15 THE COURT: I thought you were trying to
16 qualify him as an expert, Mr. Coffey.

17 MR. COFFEY: I am.

18 THE COURT: Let's do it and move on. Time's
19 awastin' here this afternoon.

20 BY MR. COFFEY:

21 Q In connection with the Diebold paper, did --
22 had you signed any nondisclosure agreements?

23 A No, I did not.

24 Q Were there any confidentiality orders or
25 anything like that in place with respect to the

1 Diebold research paper?

2 A No, there were not.

3 Q And have you had occasion to ever testify as
4 an expert witness in, for example, judicial
5 proceedings?

6 A Yes, I have.

7 Q Have you ever had occasion to testify in the
8 area of computer software technology?

9 A Yes, I have.

10 Q Can you give us an idea of whether -- of how
11 many times you've been retained as an expert in
12 computer software issues?

13 A I have been retained as an expert in six
14 voting cases prior to this one. I've also been
15 retained as an expert in two patent cases and one
16 trade secret case.

17 Q In the course of your work as an expert in
18 either patent cases or voting technology cases, have
19 you ever had occasion to enter into nondisclosure or
20 confidentiality agreements?

21 A Yes, I have.

22 Q And are you familiar with, in a general way,
23 how they work?

24 A Yes, I am.

25 Q And you understand the seriousness of strict

1 and complete compliance with the confidentiality
2 agreement, or even with more particularly, with a
3 court order?

4 A Of course.

5 Q And in any of the cases you've been involved
6 with, were there confidentiality agreements with
7 respect to software that was considered very valuable,
8 highly sensitive and very closely guarded?

9 A Yes, there were.

10 Q Can you give us just an example?

11 A In one particular case, Unilock vs. Microsoft,
12 which concerned alleged patent infringement, I was
13 given access to Microsoft source code that is
14 considered so sensitive that only a handful of
15 employees within Microsoft are given access to that
16 code.

17 Q With any of the confidentiality agreements
18 that you have entered into agreement, has anyone ever
19 had to go to any judge to suggest that you're not
20 complying or to force your compliance with the very
21 strict and detailed strictures of a confidentiality
22 agreement?

23 A Something like that has never occurred.

24 Q And have you been engaged to provide services
25 for Chris Jennings in the field of electronic voting

1 technology?

2 A Yes, I have.

3 Q And is this the same field in which you teach
4 university level courses?

5 A Yes, it is.

6 Q Same field in which you've written scholarly
7 reports?

8 A Yes, it is.

9 Q Same field in which you've provided scientific
10 analysis to national study groups like the
11 Carter-Baker Commission?

12 A Yes, it is.

13 Q Is it the same field in which you've been
14 qualified as an expert by four, five, six different
15 courts?

16 A Yes, it is.

17 MR. COFFEY: Your Honor, we would tender
18 Professor Wallach as an expert on the subject of
19 electronic voting technology.

20 THE COURT: Any objection?

21 MR. DeGRANDY: No objection.

22 MR. BURHANS: No objection.

23 (All respond, no objection).

24 THE COURT: So received.

25 MR. COFFEY: Thank you, Judge.

1 BY MR. COFFEY:

2 Q Professor Wallach, did you come in the
3 courtroom today ready to tell Judge Gary exactly what
4 went wrong with the electronic voting technology in
5 Sarasota County on November 7th?

6 A No, I did not.

7 Q Have you reviewed the complaint, the
8 plaintiff's complaint?

9 A Yes, I have.

10 Q And you identified in your declaration
11 possible areas, such as things we've talked about,
12 voter confusion, voter abstention. What is it that
13 you have been asked to investigate on behalf of Chris
14 Jennings?

15 A I have been asked to investigate whether there
16 was some kind of software bug or malfunction.

17 Q In your opinion, can the plaintiff's position
18 concerning machine malfunction be proven or disproven
19 within what you would consider to be a reasonable
20 degree of professional certainty?

21 A Yes.

22 Q Have you ever found a bug in computer software
23 before, by the way?

24 A Yes. I do it all the time.

25 Q Is finding a computer bug in software

1 something that you consider to be part of your
2 professional skill set?

3 A Yes.

4 Q Now, as part of this assignment, would you
5 rest your opinion as a computer scientist solely on
6 voter affidavits without doing the testing that is --
7 that you would consider to be necessary of the
8 underlying election hardware and software?

9 A Voter affidavits are a place to begin, but
10 they're only a beginning.

11 Q What are some of the elements that you would
12 consider to be necessary for an investigation of
13 alleged malfunction in computerized election
14 technology?

15 A For starters, it would be necessary to have
16 the software and the hardware.

17 Q Okay. And just to sort of break that down a
18 little bit. To conduct an investigation along the
19 lines of what we're talking about, you've referred to
20 election hardware. Can you give us some examples of
21 the actual hardware components that you're referring
22 to for Judge Gary, frankly, for me.

23 A Okay. Well there is the iVotronic voting
24 machine.

25 Q Let's stop there. Can you just, general

1 terms, describe that for Judge Gary, what that machine
2 itself might look like or appear to be like to a
3 voter.

4 A Okay. An iVotronic machine, the ones used in
5 Sarasota County have a 12-inch screen, which is touch
6 sensitive. It's embedded in a fairly hefty plastic
7 box that has a computer and batteries and associated
8 parts within it.

9 Q Is it flat? Is it vertical? At an angle?

10 A In typical use, it's approximately flat to
11 the, you know, with the floor. But it's at desk
12 height.

13 Q And just to sort of shorten things, what the
14 voter would see looking down at this desktop, is that
15 something like some of the pages we were showing Judge
16 Gary earlier? Let me see if I can find a good
17 example. Well if I may, we will just use this one.
18 It's the so-called Charlotte County thing. Is this
19 what the page itself would look like to a voter?

20 A Yes.

21 Q And in your judgment would you need to
22 actually examine these machines in order to be able to
23 prove or disprove the plaintiff's contention the
24 machine malfunctioned within a reasonable degree of
25 professional certainty?

1 A Yes.

2 Q Now let me ask you, what is a personalized
3 electronic ballot?

4 A Personalized electronic ballot, or PEB, is a
5 red plastic box about four inches by three inches,
6 roughly, which contains a small computer, a battery
7 and an infrared system that is used -- that
8 communicates with the iVotronic in a fashion
9 comparable to the way your TV remote control
10 communicates with your TV.

11 And it is used to enable the iVotronic to
12 accept a vote from a voter, among other things.

13 Q Does it include any embedded software in the
14 so-called PEB itself?

15 A Yes. The PEB itself is a computer. And as
16 such, it has all the things other computers have,
17 including software.

18 Q What is the communications pack, in terms of
19 the inventory of hardware that we're talking about
20 today?

21 A A communications pack has a modem, and it has
22 a printer. And this is used, among other things, to
23 print results from a voting machine, to print zero
24 tapes, et cetera.

25 Q And what is the PEB reader?

1 A A PEB reader is a connecting device that
2 allows a PEB to be interfaced with a regular computer.

3 Q Now, with respect to the personalized
4 electronic ballots, the PEBs, the communications pack
5 and the PEB reader, where do you understand that those
6 hardware components are presently located?

7 A In a warehouse in Sarasota County.

8 Q And are all of those needed, in your
9 professional judgment, in order to disprove or prove
10 the plaintiff's claim of machine malfunction?

11 A Yes.

12 Q What is -- what do we refer to with respect
13 here, what do we mean with the firmware and software
14 mounted on the iVotronic machines; what is that?

15 A The terms "firmware" and "software" are
16 approximately synonymous, so I will use them -- it's
17 not worth distinguishing between them today.

18 Q Okay.

19 A The software are the instructions that tell a
20 computer how to operate. Software embodies all of the
21 logic, all of the reasoning, everything about how the
22 computer operates.

23 Q And where would these be located?

24 A Software is stored inside the machine in
25 what's sometimes called binary or object form. And

1 then there are source code, which I imagine we will be
2 talking about in just a minute.

3 Q And that would be located where, as far as you
4 know?

5 A As far as I know, source code is held in
6 escrow --

7 Q Not source code, the software mounted on the
8 iVotronic machines.

9 A I'm sorry. The software is stored on a chip
10 inside the iVotronic machine.

11 Q Which would be where?

12 A In Sarasota County.

13 Q And all the files located onto an iVotronic
14 machine as part of the ballot programming process,
15 could you explain to Judge Gary what that is?

16 A Every iVotronic machine, when it emerges from
17 the factory, doesn't know anything about a particular
18 race that it might be used on. When the county
19 configures the machines for a particular race, they
20 load what is sometimes called a ballot definition
21 file. It's the configuration that says what the races
22 are on every page, as we've seen. That information
23 would be necessary in order for us to consider how the
24 software responded to -- on election day.

25 Q With respect to sort of loading the

1 election-specific software into the embedded software
2 in the iVotronic, who does that, by the way?

3 A I wouldn't call it -- it's called
4 election-specific definition files.

5 Q Okay.

6 A Those are loaded onto the machines by county
7 personnel.

8 Q And where would those files be located today?

9 A Physically inside the machines, as well as
10 there would be copies on the computer servers that are
11 owned by the county.

12 Q Okay. Materials pertaining to development
13 tools and scripts and other software used in November
14 2006 to compile, debug and test various hardware
15 components, including Unity software, is that
16 something that is also -- where is that located?

17 A The county would be unlikely to have that.
18 The state should have it. And if the state doesn't
19 have it, the vendor certainly does.

20 Q Okay. With respect to the items we've just
21 described, the firmware and the software and the
22 iVotronic machines, the files located onto the
23 iVotronic machine, and the materials pertaining to
24 things like development tools, as well as debugging
25 the system, are those components needed, in your

1 opinion, to conduct this process of proving or
2 disproving machine error?

3 A Yes.

4 Q What about user manuals, operating images,
5 training materials with respect to the maintenance of
6 the various iVotronic systems and its various
7 components?

8 A Yes. The manuals would be necessary to gain
9 an understanding how the parts work together.

10 Q Where are those materials located, to your
11 knowledge?

12 A I believe that the county has copies of all of
13 that.

14 Q And what about materials necessary to extract
15 and read the three redundant memories contained within
16 the iVotronic machines?

17 A Yeah.

18 Q Where would that be located?

19 A The county should have those materials.

20 Q Okay. And are these components also, in your
21 professional judgment, necessary to this process,
22 proving or disproving the plaintiff's allegations?

23 A Yes. The three redundant memories are
24 supposed to contain identical copies of the votes.
25 And if for some reason they don't, it would be

1 interesting to determine how they differed and why.

2 Q What are three redundant memories? What does
3 that mean?

4 A The voting machines from ES&S are engineered
5 to have a certain amount of resistance to hardware
6 faults. So by storing the vote records on three
7 separate chips, if one of them experiences a failure,
8 then you might be able to extract the votes from one
9 of the other chips.

10 Q Now, what is source code? What does that
11 mean?

12 A Source code is the medium in which software
13 engineers develop software. There are programming
14 languages such as CEC Plus Plus Java and a number of
15 others in which programmers write, edit, test, debug
16 their software.

17 MR. COFFEY: Now, with reference to, Your
18 Honor, what I think is not objected to, is Exhibit
19 10. And with apologies, I was going to ask if I
20 could hand it up to the court and hand a copy to
21 Professor Wallach, and Your Honor may be able to
22 see it from there.

23 THE COURT: That's fine.

24 (Exhibit No. 10 was identified for the
25 record).

1 MR. COFFEY: Because we made so many copies,
2 I'm going to hand up another one, so there is
3 plenty.

4 THE WITNESS: Thank you.

5 BY MR. COFFEY:

6 Q Is exhibit -- what is Exhibit 10?

7 A Exhibit 10 is a simple example of a software
8 program, in this case, designed tally votes for three
9 candidates; Alice, Bob, and Charlie. It's input as A,
10 B and C, and it produces totals and --

11 Q Go ahead.

12 A I was going to say, this particular example
13 program has a small bug in it that would result in the
14 wrong tally.

15 Q Let's start out with this question. If I were
16 to examine the, quote, entire source code for a
17 software program, would it, in a sense, be a whole lot
18 of pages just like this?

19 A Yes, it would.

20 Q Okay. And by looking at this particular page,
21 as a computer scientist, can you make sense of it?

22 A Yes, I can.

23 Q And as a computer scientist looking at this
24 particular page, is there anything that suggests to
25 you a defect that could, in effect, cause a, quote,

1 computer bug or software bug?

2 A Yes.

3 Q Can you explain?

4 A So this particular example actually
5 demonstrates a common mistake that many C programmers
6 make, which is the confusion of a single equals with a
7 double equals. Both result in programs that will
8 operate, but one will behave very differently from the
9 other.

10 Q Can you just show us or indicate where on the
11 page the wrong single equals is?

12 A There is a line that says, if a vote equals,
13 and then the letter C in quotation marks.

14 Q Okay.

15 A And you will observe that there is a single
16 equals rather than a double equals. So rather than
17 comparing to the letter C, it actually sets it to the
18 letter C, and will therefore, the comparison will
19 always be true.

20 Q So if somebody has -- I'm looking at this
21 about two-thirds down the page, where it says, vote
22 equals C. If somebody had put a double equals,
23 everything would be fine?

24 A In this particular example, yes.

25 Q And by putting a single equals, what could

1 happen?

2 A In this case, every single vote would be
3 counted for the candidate to whom it was properly
4 attributed, and additionally it would be counted
5 towards Charlie.

6 Q Now, do you consider that the source code to
7 the iVotronic system and the -- and to the tabulation
8 and the PEB reader -- I'm sorry, the PEB are necessary
9 for you to conduct your investigation to prove or
10 disprove the allegation of machine malfunction?

11 A Yes.

12 Q Why is that?

13 A Without -- without the source code, it's -- it
14 would be -- it would be very difficult for me --
15 difficult or impossible for me to determine how the
16 software would behave. What source code allows you to
17 do is see not only how the software behaves in a
18 common case, but to consider uncommon cases, to
19 consider a variety of different things.

20 And I imagine we will talk about different
21 hypotheses later today.

22 Q Well can you, by just testing the machines,
23 can you conclusively eliminate the prospect of a
24 software bug?

25 A Testing can never eliminate the possibility of

1 bugs.

2 Q Now, we just talked a little bit about
3 theories. Are there some particular theories that you
4 would attempt to test by studying the source code?

5 A Yes, there are several theories.

6 Q Can you give Judge Gary some examples.

7 A So, one theory would be that there was a
8 malfunction between when the voter touched the screen
9 and when a particular candidate was selected. To
10 study that theory I would look at the code responsible
11 for interpreting touches on the screen.

12 Q So if I may just interrupt, would that mean
13 you have to look at every page of source code, let's
14 say it's 800 pages, from page one from A to Z to look
15 at that, to focus on that possible theory?

16 A I would probably not need to look at every
17 page. I would probably be able to quickly ascertain
18 the section of the software that was responsible for
19 dealing with touches on the screen. I imagine it
20 would be much smaller than the entirety of the
21 program.

22 Q What do we mean when we refer to the volatile
23 memory of a computer?

24 A So that refers to a computer's RAM, which
25 is --

1 Q RAM stands for?

2 A Random access memory.

3 Q Okay.

4 A Which means memory in the computer that can
5 store various states about how the computation is
6 proceeding, but when the power goes off, the RAM loses
7 its contents.

8 Q Okay. If one of us did not speak computerese,
9 and we looked for an everyday word for volatile
10 memory, would "temporary" work?

11 A "Temporary" is a reasonable term.

12 Q Okay. What, then, is the non-volatile memory
13 of a computer?

14 A That refers to permanent storage, where data
15 written to the non-volatile memory, whether that means
16 flash memory or hard disk or some other medium, will
17 survive power being removed from the machine.

18 Q Would access to the source code enable you to
19 study the adequacy of the connection between volatile
20 memory, which I think you describe as temporary, and
21 non-volatile, being the permanent memory of the
22 computer system?

23 A Yes, it would.

24 Q And is that something that would take you --
25 again, you would have to read every page and spend

1 years to get to the bottom of?

2 A I imagine it would be something that I could
3 study very quickly. There would be a portion of the
4 program that's responsible for storing votes once
5 they're complete. And I imagine that it would be
6 relatively easy to identify the appropriate portion of
7 the software.

8 Q Are there any other theories that you believe
9 could be either validated or eliminated by examination
10 of source code? And we're all referring to theories
11 of machine malfunction here.

12 A Sure. So another -- another possible theory
13 might be that something about the calibration of the
14 machine would affect its behavior. And to validate
15 that theory I would look at the source code
16 responsible for machine calibration. Similarly, there
17 might be something about the ballot definition that
18 causes the machine to misbehave in this particular
19 instance.

20 And I would look at the software responsible
21 for reading it and processing the ballot definition.

22 Q Would there be anything in the source code
23 that would tell you, for example, whether loading nine
24 candidate names on a ballot increases the likelihood
25 of tickling a software bug?

1 A What I might find is that -- is that a
2 programmer never anticipated so many things on the
3 page at once. And I might see software that -- I
4 might see software that, when you give it the
5 particular input, that it begins to misbehave.

6 Q Did you -- you were here in the courtroom when
7 Professor Stewart talked about some of his findings
8 earlier today; correct?

9 A Yes.

10 Q And you recall the nature of some of his
11 findings with respect to the particular days machines
12 were prepared and the number of machines prepared on a
13 particular date; do you recall that?

14 A Yes.

15 Q Do those findings suggest -- create clues or
16 leads that a computer scientist might try to pursue by
17 examining source code?

18 A Absolutely.

19 Q Can you explain?

20 A Dr. Stewart's findings are suggestive that
21 something in the control of the county worker who sets
22 up a machine might have an impact on the undervote
23 rate. And to my mind the thing that a county worker
24 has the most control over is the calibration of the
25 screen. So that would lead me to consider how

1 poorly-calibrated screens might impact the undervote
2 rate.

3 Q Now, does the process of this investigation
4 also include access to the machines themselves for
5 testing purposes?

6 A Yes.

7 Q Can you explain how the machine testing
8 process would interact with the source code analysis
9 that you describe?

10 A In the process of examining the source code, I
11 might determine that a particular set of conditions
12 might cause the undervote to be observed. I would
13 naturally want to try that out on a machine to see if
14 it actually worked. And likewise, through testing and
15 examination of machines, I might observe something
16 unusual, and then I might go back and look at the
17 software to see if I can find an explanation for why.

18 Q Do software bugs repeat themselves in exactly
19 the same way, based on exactly the same screen presses
20 every single time?

21 A The answer varies. Some software bugs are
22 repeatable, and others aren't.

23 Q What does the term "deterministic" mean in
24 connection with software bugs?

25 A The term of art that computer scientists use

1 is a bug is deterministic or non-deterministic, which
2 refers to whether the software behaves the same way
3 every time or whether the software behavior differs
4 every time.

5 Q And what is -- what does it mean to have a
6 non-deterministic bug in a voting machine?

7 A It could mean that the machine behaves
8 properly under many circumstances, but misbehaves
9 under some circumstances, or under the same
10 circumstances, it might behave properly sometimes and
11 behave improperly other times.

12 Q Now, I believe you were here in the courtroom
13 when Mr. Buchanan's attorney referred to whether the
14 same 12 percent excess undervotes might occur in every
15 vote. Would that kind of scenario be repeated
16 consistently with a non-deterministic bug?

17 A It's hard to say.

18 Q Would a non-deterministic bug occur 80 percent
19 of the time, 30 percent of the time, 5 percent of the
20 time?

21 A It's impossible to say without examining the
22 particular code in question.

23 Q What -- does computer science mean -- could,
24 for example, under computer science, a
25 non-deterministic bug occur 15 percent of the time or

1 12 percent of the time?

2 A It's certainly plausible.

3 Q Is that something that you believe you would
4 be able to examine and prove or disprove with access
5 to the source code?

6 A Yes, it is.

7 Q Are you familiar of a study done in California
8 with respect to 96 machines in the so-called sliding
9 bug report?

10 A Yes, I am.

11 Q And out of the 96 machines that were tested,
12 do you recall how many actually crashed or how many
13 crashes they were able to produce?

14 A I recall that they were able to crash 20 out
15 of the 96 machines in that particular study.

16 Q As we go through this definitional discussion
17 of deterministic versus non-deterministic, if you're
18 able to duplicate a crash in 20 out of 92 machines --
19 I think it was 92 -- which is that? Is that
20 deterministic or non-deterministic?

21 A Well this particular bug had to do with the
22 peculiarities of user behavior. And then, depending
23 on whether the user dragged their finger in a
24 particular fashion on the screen, the software would
25 possibly or possibly not crash immediately thereafter.

1 Q Now, you've talked about your opinion, your
2 professional opinion, that you need a whole lot of
3 hardware components, including machines, the personal
4 ballots, communications packs, a range of things,
5 operator manuals, the source codes, in order to prove
6 or disprove the theory.

7 How long, in your professional judgment, would
8 it take to reach a reasonable degree of professional
9 certainty? Are we talking two years? Are we talking
10 six months?

11 A Without having seen the exact source code,
12 it's difficult for me to make an estimate. However,
13 the Diebold source code that we analyzed and produced
14 a report on, the analysis phase consumed approximately
15 two weeks of time by four people.

16 Q And assuming that the hardware were being
17 examined at the same time, including the eight
18 machines your client has requested, presumably eight,
19 if the other side were to look at them, whatever that
20 number is, could that be done side by side within the
21 same time frame?

22 A Yes.

23 Q In your opinion, without an examination of the
24 source code in this machine components, will computer
25 science enable a reasonable -- within a reasonable

1 degree of professional certainty, the Jennings
2 allegation of machine malfunction to be sufficiently
3 proven or sufficiently disproven?

4 A Without source code we would be unable to rule
5 out the software bug hypothesis.

6 MR. COFFEY: Bear with me one second. Your
7 Honor, we are within five minutes of concluding the
8 direct, so we will be able to get done by 5:00 if
9 that works.

10 BY MR. COFFEY:

11 Q Professor Wallach, there was an allegation
12 made before Judge Gary about experts who make a living
13 on the lecture circuit addressing electronic voting
14 systems. Do you make a living on the lecture circuit?

15 MR. DeGRANDY: Your Honor, let me object. I
16 have not seen -- I've seen the two transcripts so
17 far before Your Honor. I have not seen that
18 allegation.

19 THE COURT: I don't agree with that allegation
20 either, Mr. Coffey.

21 MR. DeGRANDY: If so, we should name the
22 person and the hearing in which it occurred and see
23 what's relevant about it.

24 MR. COFFEY: Sure. Does Harry remember say at
25 page 40 on December 8th? If they're willing to

1 back off on that, I'm fine, Judge.

2 THE COURT: Why don't you ask him how he makes
3 his living instead of leading him.

4 BY MR. COFFEY:

5 Q Do you make a living on the lecture circuit --

6 THE COURT: That's leading, Mr. Coffey. Ask
7 him how he makes a living.

8 How do you make a living, sir?

9 THE WITNESS: I make a living as a professor
10 teaching at a university.

11 THE COURT: Do you do any lecturing?

12 THE WITNESS: I do some.

13 THE COURT: What percentage of the time do you
14 lecture?

15 THE WITNESS: I give a number of talks every
16 year.

17 THE COURT: How many, approximately?

18 THE WITNESS: Sometimes one or two a month.

19 THE COURT: Okay.

20 BY MR. COFFEY:

21 Q And how much do you make; is it 100,000; is it
22 50,000, on all your lecturing?

23 A If I'm lucky, I make a couple hundred bucks on
24 honorariums.

25 Q Do you sell election machines or election

1 software on the open marketplace or anywhere else?

2 A No, I do not.

3 Q Do you produce any software for sale?

4 A No, I do not.

5 Q Now, Professor Wallach, we talked a little
6 earlier about a confidentiality agreement and a
7 confidentiality order. I want to read you the
8 following language and ask you if there is anything
9 about it that you don't understand.

10 I will not disclose defendant ES&S's trade
11 secrets to anyone, other than persons specifically
12 authorized by the order, and agree to return all such
13 materials that come into my possession to counsel from
14 whom I received such materials.

15 Anything confusing about that?

16 A That's very clear.

17 Q If that order is entered, are you going to
18 obey that?

19 A Yes, I shall.

20 Q And the other thing I want to ask you about is
21 a statement that says that you would be subject to the
22 personal jurisdiction of the circuit court with
23 respect to any enforcement of the order, including any
24 proceeding relating to contempt of court. Do you know
25 what contempt of court is?

1 A Yes, I do.

2 Q And do you know that -- you know what
3 declaring under penalty of perjury means?

4 A Yes, I do.

5 Q Is there any doubt in your mind as to whether
6 you can and will comply to the letter with any
7 protective order that is entered by Judge Gary?

8 A There is no doubt.

9 MR. COFFEY: Nothing further, Judge.

10 THE COURT: Mr. Finley, do you have any
11 questions?

12 MR. FINLEY: Your Honor, my cocounsel, Matt
13 Zimmerman, will be doing direct for us. But I
14 believe he has --

15 THE COURT: No, you're on cross, because this
16 is not your witness.

17 MR. FINLEY: I'm sorry. In terms of
18 nomenclature, because we had been in that order
19 before, I thought the court was treating it as
20 direct. But we do have some questions, which
21 is approximately 15 minutes.

22 THE COURT: Go for it.

23 CROSS EXAMINATION

24 BY MR. ZIMMERMAN:

25 Q Professor Wallach, just to be clear, you are

1 not employed by the Fedder plaintiffs in this case; is
2 that correct?

3 A That's correct.

4 Q You previously testified regarding your
5 familiarity with voting systems and the process by
6 which they are purchased; is that correct?

7 A Yes.

8 Q Are you familiar -- are you familiar with the
9 process by which voting equipment receives federal
10 qualification?

11 A Yes, I am.

12 Q Are you familiar with the term, ITA, as it
13 refers to voting equipment?

14 A Yes.

15 Q Can you describe for the court what ITA stands
16 for?

17 A That stands for independent testing authority.
18 These are companies which enter into agreements with
19 the voting system vendors to study whether they meet
20 the federal standards --

21 MR. DeGRANDY: Your Honor, if Your Honor has
22 deemed this to be cross, this is clearly outside
23 the scope of direct.

24 THE COURT: It is a little outside the scope
25 of direct.

1 MR. ZIMMERMAN: I will try to narrow it, Your
2 Honor.

3 THE COURT: Sure.

4 BY MR. ZIMMERMAN:

5 Q Professor Wallach, are you familiar when the
6 iVotronic voting systems were purchased for use in
7 Florida -- excuse me, in Sarasota County?

8 A My understanding is that a large number of
9 them were purchased fairly early, sometime in the --
10 sometime after 2000, shortly thereafter. And then a
11 large number were purchased more recently.

12 I've seen the numbers; I've forgotten. I
13 don't have them off the top of my head.

14 Q Let's assume for the sake of argument that the
15 iVotronics were purchased in 2002. I think that fell
16 within your range.

17 A That sounds right.

18 Q If that is the case, is it true that the
19 software that is loaded on the iVotronics today is the
20 same software -- let me retract that and rephrase.

21 Based on your expert opinion with your
22 experience with voting systems, is it your belief that
23 software used on the iVotronics for the recent
24 election is the same software that was loaded on the
25 equipment when they were purchased in 2002?

1 MR. DeGRANDY: Objection, Your Honor, there
2 was no testimony elicited on direct as to what
3 software was operating on iVotronics in Sarasota
4 County.

5 THE COURT: If he knows, let him answer. Do
6 you know?

7 THE WITNESS: Yeah. My understanding --

8 THE COURT: Not your understanding. Do you
9 know, yes or no?

10 THE WITNESS: The voting machines today are
11 running software version 8.0.1.2. I don't know
12 what the original version was.

13 BY MR. ZIMMERMAN:

14 Q Is it true that software used in voting
15 equipment is updated as a matter -- let me retract
16 that. Is it true that voting equipment software is
17 updated after it has been installed and certified for
18 use in various jurisdictions?

19 A Yes. Vendors update their software.

20 Q What reason would a vendor have for updating
21 software?

22 MR. DeGRANDY: Objection, Your Honor. Again,
23 beyond the scope of direct --

24 THE COURT: It is beyond the scope of direct.
25 I don't know that that's an issue here, anyway.

1 MR. ZIMMERMAN: I will just stop there, then,
2 Your Honor. Thank you, Professor Wallach.

3 THE COURT: Is that it? Time for break. 9:00
4 in the morning?

5 MR. DeGRANDY: Yes, Your Honor. I would say
6 before we break, Your Honor, Your Honor granted
7 this evidentiary hearing obviously to provide an
8 opportunity for both the plaintiff and defendants
9 due process opportunity to present their case.
10 Tomorrow we have only three hours. And I just
11 wanted to, at this point, put on the record that we
12 do need a meaningful opportunity to present our
13 case.

14 THE COURT: I'm going to give you a meaningful
15 opportunity. If it goes beyond tomorrow, it goes
16 beyond tomorrow. I'm not going to short-circuit
17 anybody. I'm not going to keep anybody from
18 presenting their full side.

19 MR. DeGRANDY: Thank you very much, Your
20 Honor.

21 THE COURT: Have a good evening.

22 MR. ELBRECHT: Your Honor, I represent the
23 canvassing board of Sarasota. We tried to
24 scheduled a motion for judgment on pleadings. It
25 looks as if it now it won't heard tomorrow in the

1 time period. I was wondering if we could
2 reschedule that at another time?

3 THE COURT: I've worked for her for 28 years.
4 She's the woman you talk to, Ms. Jones. Have a
5 good evening.

6 (The proceedings were adjourned at 5:00 p.m.)
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CERTIFICATE OF REPORTER

STATE OF FLORIDA)
COUNTY OF LEON)

I, SARAH B. GILROY, Registered Professional Reporter, certify that the foregoing proceedings were taken before me at the time and place therein designated; that my shorthand notes were thereafter translated under my supervision; and the foregoing pages numbered 1 through 168 are a true and correct record of the aforesaid proceedings.

I further certify that I am not a relative, employee, attorney or counsel of any parties, nor am I a relative or employee of any of the parties' attorney or counsel connected with the action, nor am I financially interested in the action.

DATED this 23rd day of December, 2006.

Sarah B. Gilroy

SARAH B. GILROY, RPR, JRR
Notary Public
1-800-934-9090
850-878-2221

My Commission Expires: 02-02-10
My Commission Number: DD 075718

IN THE CIRCUIT COURT
OF THE SECOND JUDICIAL
CIRCUIT, IN AND FOR
LEON COUNTY, FLORIDA

CASE NO. 2006-CA-2973
Consolidated with 2006-CA-2996

CHRISTINE JENNINGS, nominee
of the Democratic Party for
Representative in Congress
from the State of Florida's
Thirteenth Congressional District,

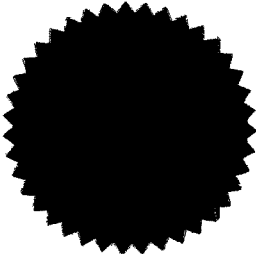
Plaintiff,

vs.

VOLUME 2,
Pages 170 - 391

ELECTIONS CANVASSING COMMISSION
OF THE STATE OF FLORIDA,
consisting of Governor Jeb Bush,
Chief Financial Officer Tom
Gallagher and State Senator
Daniel Webster, et al.,

Defendants.



IN RE:	Pending Motions
BEFORE:	HONORABLE WILLIAM L. GARY
DATE:	Wednesday, December 20, 2006
TIME:	Commenced at 9:00 a.m. Terminated at 2:50 p.m.
PLACE:	Courtroom 2F Leon County Courthouse Tallahassee, Florida
REPORTED BY:	SARAH B. GILROY, RPR, CRR Notary Public in and for the State of Florida at Large

1 APPEARANCES:

2 REPRESENTING THE PLAINTIFF JENNINGS:

3 KENDALL COFFEY, ESQUIRE
4 Coffey & Wright
5 2665 South Bayshore Drive
6 PH-2 Grand Bay Plaza
7 Miami, Florida 33133

8 MARK HERRON, ESQUIRE
9 Messer, Caparello & Self
10 2618 Centennial Place
11 Tallahassee, Florida 32308

12 SAM HIRSCH, ESQUIRE
13 JESSICA RING AMUNSON, ESQUIRE
14 Jenner & Block
15 601 Thirteenth Street NW
16 Suite 1200 South
17 Washington, DC 20005

18 REPRESENTING THE FEDDER PLAINTIFFS:

19 LOWELL FINLEY, ESQUIRE
20 1604 Solano Avenue
21 Berkeley, California 94707

22 MATTHEW ZIMMERMAN, ESQUIRE
23 454 Shotwell Street
24 San Francisco, California 94110

25 REGINALD J. MITCHELL, ESQUIRE
1550 Melvin Stret
Tallahassee, Florida 32301

REBECCA HARRISON STEELE
ACLU West Central Florida Office
Post Office Box 33679-8245
Tampa, Florida 33679-8245

1 REPRESENTING THE STATE DEFENDANTS:
PETER ANTONACCI, ESQUIRE
2 ALLEN C. WINSOR, ESQUIRE
GrayRobinson
3 301 South Bronough Street, Suite 600
Tallahassee, Florida 32301
4

5 REPRESENTING THE SARASOTA COUNTY DEFENDANTS:
STEPHEN E. DeMARSH, ESQUIRE
6 FREDERICK J. ELBRECHT, ESQUIRE
Office of the County Attorney
7 1660 Ringling Boulevard, 2nd Floor
Sarasota, Florida 34236
8

9 REPRESENTING KATHY DENT:
RONALD A. LABASKY, ESQUIRE
10 Ronald A. Labasky, P.A.
Post Office Box 669
11 Tallahassee, Florida 32302

12 REPRESENTING ES&S:
13 HARRY O. THOMAS, ESQUIRE
JEFFREY L. FREHN, ESQUIRE
14 Rady, Thomas, Yon & Clark
301 South Bronough Street, Suite 200
15 Tallahassee, Florida 32301

16 MIGUEL A. DeGRANDY, ESQUIRE
STEPHEN CODY, ESQUIRE
17 Miguel DeGrandy, P.A.
800 S. Douglas Road, Suite 850
18 Coral Gables, Florida 33134

19 REPRESENTING VERN BUCHANAN:
20 GLENN T. BURHANS, JR., ESQUIRE
HAYDEN R. DEMPSEY, ESQUIRE
21 ADAM LANDA, ESQUIRE (member of the New York Bar)
Greenberg Traurig
22 101 East College Avenue
Tallahassee, Florida
23
24
25

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1 THE COURT: Be seated, please. Morning. You
2 may proceed.

3 MR. FINLEY: Your Honor, Lowell Finley for the
4 Fedder plaintiffs, with just a quick housekeeping
5 matter. We have our motion for an order on
6 anti-spoliation pending. And I wanted to ask
7 whether the court expects to hear that following
8 the hearing on this motion today.

9 THE COURT: Well that depends upon when we
10 finish. Okay?

11 MR. FINLEY: Thank you.

12 THE COURT: I don't even know if we're going
13 to finish this today. I don't know how many
14 witnesses everybody has. And like I told y'all
15 yesterday, I'm not going to short-circuit anybody
16 from presenting their case. Okay?

17 MR. FINLEY: Thank you.

18 MR. DeGRANDY: Good morning, Your Honor.

19 THE COURT: Morning.

20 CROSS EXAMINATION

21 BY MR. DeGRANDY:

22 Q Morning, Professor.

23 A Good morning.

24 Q Professor, my name is Miguel DeGrandy. I
25 represent ES&S. I'm going to be asking you questions

1 in this matter. If there is anything that you do not
2 understand, please feel free to tell me. I will be
3 happy to repeat the question. If you answer the
4 question, I assume that you understand the basis of my
5 question.

6 A Okay.

7 Q Is that fair? Okay. Now, sir, first of all,
8 preliminarily, were you instructed by your attorney
9 yesterday regarding the judge's order not to discuss
10 the testimony that you will give in this case?

11 A Yes, I was.

12 Q And did you discuss your testimony with any of
13 the lawyers for the plaintiff's side?

14 A No, I did not.

15 Q Okay. Not at breakfast?

16 A Not at breakfast.

17 Q Now, sir, is it fair to say that you're
18 critical of all machines that don't have paper trail
19 verification features?

20 A I have said things along those lines, yes.

21 Q And you participate in an organizations that
22 advocates for a verifiable voter paper trail; is that
23 correct?

24 A That's correct.

25 Q What is thecomputeratemyvote.org?

1 A That was an organization produced by a group
2 run by Ben Cohen of Ben and Jerry's ice cream. And
3 they have a number of advocacy positions that they've
4 taken over the past. They decided to advocate against
5 paperless electronic voting machines.

6 Q And you're associated with that group somehow?

7 A They invited me to speak at a press conference
8 they were having.

9 Q And what is ACCURATE again?

10 A ACCURATE is a national science foundation
11 funded research center that studies the security and
12 policy and human factors issues of electronic voting
13 systems.

14 Q Okay. Now, speaking of being accurate,
15 yesterday you told the judge that you did not have to
16 review the Diebold code under the auspices of a
17 protective order; correct?

18 A That's correct.

19 Q But what you didn't tell the court is the
20 reason that happened is because Diebold had
21 inadvertently put their code on the Internet, so it
22 was accessible to the public; correct?

23 A That is correct.

24 Q So you didn't have to ask for permission to
25 evaluate it?

1 A That's correct.

2 Q Now in your report you reached no conclusion
3 regarding the cause of the undervote; correct?

4 A I have five hypotheses that could explain the
5 undervote.

6 Q But my question is, you reached no
7 conclusions; correct?

8 A That's correct.

9 Q Now, were you present in Sarasota for the
10 logic and accuracy tests?

11 A I was not.

12 Q Did you hear testimony by Mr. -- by Professor
13 Stewart regarding machines that were cleared and
14 tested after October 12th?

15 A Yes, I did.

16 Q Did you hear my colleague, Mr. Thomas, mention
17 two machines by serial number?

18 A Yes, I did.

19 Q Did you know those machines were the machines
20 in the precincts picked by Ms. Jennings for the
21 parallel tests?

22 A I believe you when you say that.

23 Q And those are the same ones that the state
24 said in its report yesterday that functioned with 100
25 percent accuracy; is that not correct?

1 A That is my understanding. I haven't actually
2 seen that document yet.

3 Q You have not seen that document?

4 A I believe you said yesterday that that
5 document only became available yesterday. I haven't
6 had a chance to read it.

7 Q You have not. Okay. Would that make any
8 difference to you if you saw a document, an official
9 report from the state that documented both parallel
10 reports and said --

11 A If you would like me to comment on what
12 they've done, it would be helpful if I had a chance to
13 study what was done.

14 Q Your attorneys haven't given that report to
15 you?

16 A They have not.

17 Q Now, did you know that both of those machines
18 that Mr. Thomas mentioned by serial number and that
19 were from the precincts that Ms. Jennings picked were
20 cleared and tested after October 12th?

21 A I was not aware of that.

22 Q Now, clear and test is a process that is done
23 between elections; correct?

24 A That's correct.

25 Q And the purpose of that is to empty the

1 machine's memory of all that it recorded from the
2 previous election --

3 A That's correct.

4 Q -- to prepare it for the next election? Now,
5 do you know how many steps are performed to do a clear
6 and test?

7 A I have read the manual, and I'm generally
8 familiar with the process.

9 Q It takes less than five minutes; right?

10 A Approximately.

11 Q Now, what is a zero tape?

12 A A zero tape is something that poll workers
13 will produce before the election begins. They hook a
14 printer up to a machine and ask the machine to state
15 on paper that it has no votes stored within it.

16 Q And that's done right before the election;
17 correct, either the -- if you boot them up at night or
18 in the morning, you would do that right about that
19 time?

20 A Typically it's done in the morning before the
21 polls open.

22 Q And the zero tape operation would show there
23 is nothing in the machine; correct?

24 A It states that, that's correct.

25 Q Okay. So, therefore, the zero tape function

1 in effect verifies that the clear and test was done
2 correctly?

3 A The clear and test operation is a part of many
4 other things that could potentially be done, and the
5 procedures would vary from county to county. For
6 example, the procedures might involve calibrating the
7 machine --

8 Q That's not my question. Does a zero tape
9 function verify that the clear and test was done
10 correctly?

11 A It will verify there are no votes in the
12 machine.

13 Q Which is what the clear and test function
14 does, erases the votes from the machine?

15 A Yes.

16 Q Now, in response to questions by Mr. Coffey,
17 you talked about certain theories you wanted to test;
18 correct?

19 A That's correct.

20 Q And you also showed us a program that
21 contained a bug?

22 MR. DeGRANDY: And that's Exhibit 10; is it?

23 MR. COFFEY: Yes.

24 BY MR. DeGRANDY:

25 Q Do you have that in front of you?

1 A I do not.

2 Q Would you like a copy?

3 A Sure.

4 MR. DeGRANDY: May I approach, Your Honor?

5 THE COURT: Sure.

6 MR. DeGRANDY: Thank you, sir.

7 BY MR. DeGRANDY:

8 Q Now, let's go over that. In this election

9 there are three candidates; Alice, Bob and Charlotte;

10 correct?

11 A Yes.

12 Q And what you said this bug does is that it

13 does record the votes cast for Alice to Alice;

14 correct?

15 A Yes.

16 Q It records the votes cast for Bob to Bob?

17 A Yes.

18 Q But as to Charlie, it records Charlie's votes

19 plus everybody else's votes?

20 A That's correct.

21 Q Okay. So if we had 60 people vote in the

22 election, let's assume that 20 voted for Alice, 20

23 voted for Bob, 20 voted for Charlie; correct?

24 A Yes.

25 Q What would this software program produce?

1 A This particular program would produce 60 votes
2 for Charlie.

3 Q And 20 votes for Alice?

4 A And 20 for Bob.

5 Q And 20 for Bob. So you wouldn't have to look
6 at the source code to determine that there was a
7 malfunction, because there are 100 votes recorded, and
8 only 60 people voted?

9 A In this particular example, yes.

10 Q So whether it was ballot stuffing or source
11 code malfunction, you don't have to look at the source
12 code to know it's an invalid election; correct?

13 A For this particular example, yes.

14 Q Now, one of the theories you wanted to test
15 was a malfunction between the time the voter touched
16 the screen and the time the voter -- the vote was
17 recorded; correct?

18 A Yes.

19 Q Now, if there was a malfunction that caused
20 the vote to be lost in that process, that could be
21 replicated in a parallel test; correct?

22 A Maybe, maybe not.

23 Q Now, a parallel test is a test where you
24 basically use a script; correct?

25 A Yes.

1 Q And that script is based on event logs;
2 correct?

3 A Can be.

4 Q Okay. Are you aware that the parallel tests
5 done by the state were based on an event log?

6 A They were.

7 Q So basically a person has that script and
8 tries to replicate those votes; correct?

9 A That's correct.

10 Q In the sequence that the script says and in
11 the timing that the script says; correct?

12 A That's correct.

13 Q And if you're doing it based on an event log,
14 it parallels the sequences of votes and the timing in
15 that event log?

16 A Approximately, but not exactly.

17 Q Okay. And so your testimony is that a
18 parallel test would not show a malfunction of that
19 nature?

20 A A broad truism is that testing can never
21 identify the absence of bugs; it can only show the
22 presence of bugs.

23 Q Nor can the review of a source code. It may
24 take years, and you may not find it?

25 A Or I might find something very quickly.

1 Q But you have given testimony in certain
2 legislative committees where you have said that, even
3 an open source platform, it may take years for anyone
4 to find something if something is there?

5 A That's also a possibility.

6 Q Now, you also wanted to study the connection
7 between volatile and nonvolatile memory. Now if a
8 problem existed with that connection that caused votes
9 to be lost, that could be replicated in a parallel
10 test; right?

11 A Perhaps, perhaps not.

12 Q Calibration of the machine and the source code
13 on calibration, that's another thing you wanted to
14 look at.

15 A That's correct.

16 Q And that deals with how the screen is
17 calibrated so that when you touch this part, that vote
18 for that candidate is recorded; correct?

19 A That's correct.

20 Q Okay. And that would also show up in a
21 parallel test; wouldn't it?

22 A Perhaps, perhaps not.

23 Q Now, reading and processing ballot definitions
24 like too many candidates on one page, have you studied
25 other races with these characteristics that would lead

1 you to believe that there is a problem?

2 A I have anecdotal evidence that suggests there
3 might be a problem, namely the 18,000 undervotes.

4 Q And the anecdotal evidence is just the fact
5 there were 18,000 undervotes?

6 A I guess that's not anecdotal; that's a fact.

7 Q Now basically you state you can't rule out, to
8 a reasonable degree of scientific certainty, that
9 there was a bug without the source code; correct?

10 A That's correct.

11 Q So if I were to have -- well in this case
12 Ms. Jennings lost by 369 votes; is that correct?

13 A I believe that was the certified total.

14 Q All right. And that's a small fraction, small
15 percentage of difference between the candidates;
16 correct?

17 A That's correct.

18 Q But if I were to file a complaint because I
19 lost an election, and I said, you know, lost by a
20 10-point spread, but there was some sort of source
21 code bug that would assign every, you know, one out of
22 every five of my votes to the opponent, you would have
23 the same conclusion; you couldn't prove or disprove
24 without the source code?

25 A The source code -- I have to read the source

1 code in order to reason about its correctness.

2 Q And if the spread was 20 points in the
3 election, you would have the same response?

4 A Yes.

5 Q And if the spread was 50 points, you would
6 have the same response?

7 A Yes.

8 Q Now, your report says that you were retained
9 to provide an opinion concerning information and
10 equipment that might be necessary to conduct a
11 forensic investigation; correct?

12 A That's correct.

13 Q And you posit five different hypotheses?

14 A That's correct.

15 Q And let's go through those. The -- on the
16 voter abstention hypothesis, you talk about how you
17 can try to vent that hypothesis, and you say, for
18 example, the telephone-based voter polls would not be
19 reliable because survey participants, in other words,
20 might lie to best support their candidate or
21 preference; is that correct?

22 A That's correct.

23 Q So anecdotal evidence isn't very reliable in
24 that case; is it?

25 A In that particular case, anecdotal evidence

1 would not be reliable.

2 Q Now, also a well-meaning, honest person, you
3 know, could believe and swear on the bible that they
4 cast a vote, but they could have made a mistake;
5 correct?

6 A It's a well-understood effect.

7 Q And we can't tell with any reasonable degree
8 of scientific certainty how many undervotes are a
9 result of voter abstention?

10 A I would disagree with that.

11 Q Okay. You think that you can determine, with
12 a reasonable degree of scientific certainty, how many
13 votes were a result of voter abstention?

14 A I believe that Dr. Stewart's testimony
15 addressed that issue quite well.

16 Q What Dr. Stewart said was that he could
17 conclude that there was a certain degree of excess
18 undervotes.

19 A Yes.

20 Q Okay. But as to what I would guess would be
21 the nonexcess or not normal undervotes, he didn't say
22 that he could say how many were voter abstention, how
23 many were mistakes, or how many were other reasons;
24 correct?

25 A Well, he could compare the rates from the

1 absentee voting to the regular voting, and he could
2 predict approximately how many he would consider to be
3 normal undervotes.

4 Q But normal undervotes do not necessarily mean
5 voter abstention; they could be voter mistakes, a
6 person that meant to vote but didn't?

7 A It's possible that a portion of the normal
8 undervotes would be normal error that normal voters
9 might experience.

10 Q Now, then you posit the human error
11 hypothesis. And basically two or more races on the
12 same page or other factors and how the race was
13 presented may cause voter confusion; correct?

14 A Correct.

15 Q Now, that's not an outlandish theory; that is
16 reasonable theory?

17 A As are my other theories.

18 Q Now, in that part of your report you state
19 that, while the summary screen was presented
20 immediately prior to when the voter casts a ballot,
21 and it gives the opportunity for voters to recognize
22 and correct mistakes, some voters may not read this
23 carefully and would likewise miss the opportunity to
24 correct their undervote; correct?

25 A Yes.

1 Q And then -- well let me backtrack. Let me ask
2 you this. You heard the testimony of Professor
3 Stewart; correct?

4 A Yes, I did.

5 Q And Professor Stewart did not do an analysis
6 of other races in November in Florida with similar
7 ballot configurations to do statistical analysis;
8 correct?

9 A I believe that's correct.

10 Q But you said that the first thing that you
11 should look to, in other words, is look to other races
12 in Florida, using iVotronics, that have a similar
13 visual presentation to CD 13 page in Sarasota County.
14 That's what you said in your report is the first thing
15 you're supposed to do to validate or disprove that
16 theory; correct?

17 A It's one of the many things you should do.

18 Q But that's -- in your report you say first you
19 would do this.

20 A If that's what I wrote, then that's what I
21 wrote.

22 Q Do you want to look at your report and see if
23 that's what you wrote? Would you agree with me that
24 that's a fair assessment of what you wrote?

25 A I believe that's something I would have

1 written.

2 Q Professor Stewart didn't do that; did he?

3 A He did what he did.

4 Q That's not my question. He didn't do that;
5 did he?

6 A I -- I've read his report. I don't recall him
7 having done such an analysis, although he did discuss
8 it when you examined him yesterday.

9 Q Okay. Well let me ask you this: You're a
10 scientist. If a professional in his field does not
11 perform the basic analyses that should be performed to
12 validate or disprove a theory, isn't it a fact that
13 his opinion is pretty worthless?

14 A I would strongly disagree with that
15 characterization.

16 Q Now you did say the statistical comparisons of
17 those county results may validate the voter human
18 error theory; correct?

19 A If that's what I said, that was not what I
20 meant to say, or you're misconstruing it.

21 Q Okay. Let me ask you this: You were here for
22 Professor Stewart's testimony, and Mr. Thomas
23 cross-examined him; correct?

24 A Yes.

25 Q And Mr. Thomas asked him about Lee and Sumter

1 County.

2 A Yes.

3 Q And Mr. Thomas stated, well, those didn't use
4 ES&S machines; correct?

5 A That's correct.

6 Q Okay. And he misspoke; didn't he?

7 A I don't recall.

8 Q In fact, they did use ES&S machines.

9 A I will take your word for it.

10 Q But Professor Stewart didn't know that, didn't
11 challenge him on that; did he?

12 A I'm not aware. I wasn't paying that careful
13 attention.

14 Q Now, if you would find that in three counties
15 in the same election day similar ballot layout led to
16 undervote rates in the attorney general's race of 20
17 to 25 percent, wouldn't that be strong evidence that
18 ballot layout may be the cause of the undervote in
19 Sarasota County?

20 A Only if the other machine was not produced by
21 ES&S. If both machines are the same exact machine,
22 then this condition of having a crowded screen could
23 result in a human factors problem, or it could result
24 in a software problem, and we can't distinguish.

25 Q Twenty-five percent in Charlotte County, 21

1 percent in Lee, 24 percent in Sumter, but it wouldn't
2 be a calibration problem, for example, if the AG race
3 was at the bottom of the screen instead of at the top?

4 A We don't know until we can examine the code.

5 Q Now, then you posit a software bug hypothesis;
6 correct?

7 A That's correct.

8 Q You say that, latent mistakes or errors in
9 design that escape normal testing certification
10 processes can be in the software; correct?

11 A That's correct.

12 Q Now, without looking at the software, would
13 you agree that there is a sufficient number of time
14 that you could replicate votes, that you could vote on
15 a machine that would show, to a reasonable degree of
16 scientific certainty, that there is no bug in the
17 program?

18 A As I said before, no amount of testing can
19 ever prove the absence of a bug.

20 Q Okay. But in general it's an accepted
21 scientific premise that it is impossible to prove the
22 absence of anything?

23 A That's not true at all.

24 Q Okay. All right. Now, if I voted on the
25 machine 100,000 times, and -- according to a script,

1 and it operated correctly 100,000 times, would that be
2 significant evidence to you?

3 A That would be indicative of something, but it
4 wouldn't be conclusive.

5 Q How about 1 million times?

6 A The number of votes you cast is irrelevant to
7 its ability to offer sufficient test coverage.

8 Q To be certified, isn't it correct that it has
9 to go through 1 million operations without error?

10 A That varies from state to state.

11 Q Do you know the standards in this state?

12 A I understand that Florida is one of only nine
13 states that doesn't require federal certification, and
14 they do it their own way.

15 Q Okay. And do you know if ES&S equipment is
16 federally certified?

17 A I believe it is.

18 Q And it's state certified too?

19 A It ought to be before it can be used here.

20 Q Now, you stated that you needed both the
21 equipment of ES&S to run parallel tests and the
22 software, to look at the software; correct?

23 A That's correct.

24 Q And in your report you stated that there are
25 things that you may be able to see in the parallel

1 tests are going to give you indications as to whether
2 there would be or wouldn't be a software code problem;
3 correct?

4 A That's correct.

5 Q But you haven't reviewed the results of the
6 parallel tests that were conducted November 28th and
7 December 1st?

8 A My understanding is that the DVDs still
9 haven't arrived. So we haven't had the opportunity to
10 review that material yet.

11 Q You weren't down there to observe the tests
12 then?

13 A Physical presence would be sufficient. One
14 would need to go over the DVDs, and I could offer a
15 number of criticisms of how the process was conducted.

16 Q I'm sure you can. Now you are aware that
17 Ms. Jennings was allowed to observe and provide input
18 pursuant to this judge's direction; correct?

19 A That's my understanding.

20 Q And are you aware that some of her suggestions
21 after the first parallel test were used in the second
22 parallel tests?

23 A And I believe a number of them weren't.

24 Q And are you aware that both candidates were
25 allowed to choose the precincts from which machines

1 would be utilized for those tests?

2 A And I'm aware that not enough machines were
3 used to be a statistical example.

4 Q Sir, if you could answer my question first and
5 then give your editorial.

6 A Restate the question.

7 Q Are you aware that both candidates were
8 allowed to choose machines -- choose precincts from
9 which those machines were pulled?

10 A That's correct.

11 Q It's correct to say that 40 percent of the
12 machines, two out of five, were chosen by Jennings;
13 correct?

14 A Two out of the five machines were chosen by
15 Jennings.

16 Q And you are aware, even though you haven't
17 read the report, that there were no anomalies found in
18 these tests; correct?

19 A That's my understanding of the report, but I
20 haven't had the opportunity to read it yet.

21 Q And it's your testimony that, despite those
22 results, there is no greater evidence that it would be
23 much less likely that the machines malfunctioned based
24 on these results?

25 A These -- the tests weren't conducted the way

1 we would have wanted, and even then they are not
2 sufficient to rule out the possibility of a software
3 bug.

4 Q But you do foresee that they were conducted
5 based on the standards set forth by the state and the
6 secretary of state; correct?

7 A I don't know what you mean by "standards."

8 Q Their protocols and their rules as to how to
9 conduct the parallel test, whether you agree with them
10 or not?

11 A The state drafted protocols.

12 Q And the state also accepted input from
13 candidates?

14 A The state took input. What they did with it,
15 I'm not so sure.

16 Q Now, the next theory that you posit is the
17 postelection corruption hypothesis. And to be clear,
18 you're not stating that people were bribed; you're
19 talking about corruption of data; correct?

20 A All of those are possibilities.

21 Q Including that people were bribed?

22 A Until you rule it out, it's a hypothesis.

23 Q You don't have any evidence of that; do you?

24 A I don't believe it's very likely.

25 Q Nor do you have evidence that there was

1 corruption of data after the election; correct?

2 A We have no evidence to date.

3 Q And you said that the recount processes
4 already provided provides a check against that form of
5 corruption; correct?

6 A That's correct.

7 Q And then you posit the malicious software
8 hypothesis; correct?

9 A That's correct.

10 Q An intentional, illegitimate modification of
11 software or firmware?

12 A Yes.

13 Q Do you have any evidence that that happened?

14 A Not at present.

15 Q So the answer is no?

16 A We currently have no evidence to support that
17 hypothesis.

18 Q Okay. Now, sir, you were an expert witness in
19 the case of Conroy vs. Dennis; correct?

20 A That's correct.

21 Q And in that case you were allowed to review
22 certain information, but the judge did not allow you
23 to review source code; correct?

24 A That's correct. No source code was provided
25 in that case.

1 Q And your position was that, not only should he
2 have given you the source code, but the source code
3 should be public and put up for everybody to view and
4 everybody to examine?

5 A My position is that trade secrecy is not
6 appropriate in elections systems.

7 Q And, therefore, the answer to my question
8 would be yes, you believe it's appropriate that it be
9 published to everyone?

10 A I believe that's appropriate.

11 MR. DeGRANDY: Thank you, Your Honor, nothing
12 further.

13 CROSS EXAMINATION

14 BY MR. LANDA:

15 Q Morning, Your Honor. Morning, Mr. Wallach?

16 A Good morning.

17 Q Now, it's been nearly a decade since you've
18 done any professional programming; is that correct?

19 A That's not correct.

20 Q You've done professional programming the last
21 decade that does not appear on your resume?

22 A My resume discusses my professional
23 consulting, some of which includes professional
24 programming.

25 Q In which languages?

1 A I have consulted in C and Java, and I've also
2 done some work in languages like Perl.

3 Q Now, Mr. Wallach, is there an electronic
4 voting machine that you advocate?

5 A I'm reasonably happy with ES&S's AutoMark
6 product. I like the electronic precinct-based optical
7 scanners, and I understand that there are a number of
8 other products in development by other vendors that
9 have apparently good properties as well.

10 Q Have you written with approval about any of
11 these?

12 A I'm not sure.

13 Q I didn't notice it on your resume. Can you
14 point it out if it's there.

15 A I discuss some of these systems in my standard
16 talk. And my slides are on my website.

17 Q So you wouldn't find that in your resume;
18 would you?

19 A My resume lists all of the talks that I've
20 given, and the slides from my talk are on my website.

21 Q So I would have to consultant your website to
22 find out if you put in writing anything critical of
23 electronic voting systems?

24 A My website would be a good place to find out
25 about things that I've said.

1 Q All right. Now you said you've testified in
2 six voting cases; is that correct?

3 A That's correct.

4 Q How many of those cases were electronic voting
5 cases?

6 A Let's see. All of them.

7 Q And in how many of them did you suggest that
8 the electronic voting system was appropriate or worked
9 correctly?

10 A In the Webb County cases, I suggested that I
11 didn't see any software bugs, although I did discover
12 discrepancies, including test votes that were included
13 in the final tally.

14 Q So you've never seen an electronic -- never
15 testified about an electronic voting that's taken
16 place that you've approved of?

17 A I don't really understand the question.

18 Q Okay.

19 A Perhaps you could restate it.

20 Q Have you ever used an iVotronic machine?

21 A I have never voted on one, though I have
22 operated them.

23 Q You have operated them?

24 A Yes.

25 Q Now, when you operated them, and I want to --

1 we saw some pictures yesterday, you remember, of what
2 the iVotronic looked like?

3 A Yes.

4 Q When you select a candidate, what happens?

5 A You touch the screen; the software interprets
6 the location of your finger on the screen, and it
7 places an X in the box for the appropriate candidate.

8 Q Is that all?

9 A I imagine that there are a number of things
10 that go on, but that would require examining the
11 source code to find out.

12 Q Well wait a minute. Let's focus on the user
13 experience for a minute. All the user sees is an X in
14 the box? The user doesn't see anything else when he
15 touches the screen?

16 A I'm not certain, and there are several
17 different versions of ES&S's software, and they all
18 behave slightly differently.

19 Q You didn't observe the testing, so you
20 wouldn't actually know what happens on these machines;
21 would you?

22 A Which testing are we referring to?

23 Q Parallel testing that the state did in this
24 case.

25 A I wasn't an observer at the testing.

1 Q So would it surprise you to learn that when a
2 user touches the screen, that the candidate flashes,
3 big blue line behind it, and it's pretty obvious the
4 candidate that was selected, and then the X gets put
5 in the box; would that surprise you?

6 A That wouldn't surprise me.

7 Q You've seen that on voting machines; haven't
8 you?

9 A Voter machines have a number of ways of
10 indicating how you've selected your vote.

11 Q Well you've operated iVotronic machines. Have
12 you ever seen that flashing before?

13 A When I've operated iVotronics, it's been the
14 administrative interface, not the voting interface.

15 Q I see. So you've never operated a machine of
16 the type used in this election in the way it was used
17 in this election?

18 A I haven't had the opportunity.

19 Q And nobody told you about this flashing?

20 A I don't see how this flashing is relevant.

21 Q We will get to that in a little while. Nobody
22 told you about it; right?

23 A Nobody has told me about the flashing feature.

24 Q Can you use an iVotronic machine? Are you
25 capable of doing that?

1 A Yes, I would be capable of that.

2 Q Can you use it just like a Sarasota voter?

3 A There are several hundred thousand Sarasota
4 voters who would use it differently.

5 Q Can you use it like a typical Sarasota County
6 voter?

7 A I imagine I can.

8 Q Now, can you show manifestations of software
9 bug by testing?

10 A Testing can show the presence of bugs, yes.

11 Q And you said that it couldn't prove the
12 absence of bugs; right?

13 A That's correct.

14 Q What did you mean "prove"? Do you mean prove
15 beyond any doubt whatsoever?

16 A That's what I meant, yes.

17 Q But in a legal sense you weren't using that
18 term?

19 A I was using "prove" in the scientific sense.

20 Q So testing could certainly make something more
21 likely than not; couldn't it?

22 A Testing can demonstrate beyond a doubt that a
23 problem exists.

24 Q Can testing demonstrate that it's more likely
25 than not that a problem doesn't exist?

1 A I don't believe you can assign probabilities.
2 I don't think that that's a meaningful question to
3 ask.

4 Q Okay. Let's talk about what happened in the
5 2006 election in Sarasota County. Now, there were
6 something like 18,000 undervotes; is that correct?

7 A That's approximately correct.

8 Q All right. And one of your theories is that a
9 software bug or some malicious code led to some 14,000
10 or so of those undervotes; is that right?

11 A That was two different theories, but, yes.

12 Q Some machine malfunction; right?

13 A You said software bug or malicious. So that
14 was two separate theories.

15 Q Let me separate those out. Some machine
16 malfunction led to some 14,000 undervotes is your
17 theory?

18 A That is one of my theories.

19 Q One of your theories. Now, that's what
20 percentage of the total vote in Sarasota County?

21 A Off the top of my head, I seem to recall that
22 that's about 12 percent of the cast votes.

23 Q Now, if you could run an iVotronic like a
24 voter, don't you think you would see some number of
25 undervotes for Ms. Jennings if 10 percent, 12 percent

1 of the votes showed up as an undervote as part of one
2 of your theories?

3 A Maybe, maybe not. It depends on exactly how
4 the procedures were put together.

5 Q So you might not see 10 percent of them. Do
6 you think you would see, you know, some percentage,
7 5,000 undervotes, 2,000 undervotes, some number of
8 undervotes if you reran, 100,000?

9 A Maybe, maybe not.

10 Q You might not see any; right?

11 A I wouldn't know until I tried.

12 Q So part of your hypothesis might be that on
13 election day the machines worked one way with one set
14 of voters, but if you tested them again on another
15 day, they might not work that way?

16 A It could be the case that there is some
17 dependency on the date.

18 Q Now let's talk about that. The machine, the
19 iVotronic machine, where does it get the date?

20 A It has an internal clock. It knows what time
21 it is.

22 Q Absolute time?

23 A Yes. Actually it does know the absolute time.

24 Q Who tells it what the absolute time is?

25 A It's probably configured in the factory, and

1 the county has the ability to change the clock on the
2 machine through the administrative options.

3 Q Do you know if the clocks were changed to
4 election day for the test?

5 A I'm not aware whether they were or weren't.

6 Q Would that affect any of your opinions?

7 A It might; it might not. I would have to look
8 at the software to be able to determine.

9 Q Let's talk a little bit about your malicious
10 code theory.

11 A Uh-huh.

12 Q How do you posit that the malicious code
13 entered the software? Do you posit that it was placed
14 in the firmware or was added after the machine left
15 the factory?

16 A Any of these things are possibilities.

17 Q And do you posit that the malicious software
18 affected only one one race or that it affected
19 numerous races?

20 A Malicious software could be engineered in any
21 fashion.

22 Q Ah. It could be. But I'm talking about in
23 this case. You examined event logs, examined the
24 votes returned. And I'm talking about your theory, to
25 a reasonable degree of professional certainty, about

1 what happened in this case. Let me ask that again.
2 Did the malicious software affect only the race at
3 issue in this case, or did it affect all of the races
4 on those machines?

5 A The malicious software at this point is
6 hypothetical, so I can't say.

7 Q Hypothetically, would you say it affected only
8 one race or many, based on all the data you've
9 reviewed?

10 A It could well have affected other races if it
11 existed.

12 Q But you did not see any other races where you
13 formed an opinion that it affected them?

14 A There is no reason for me to form an opinion
15 until I've had something to examine.

16 Q Well maybe that's what we're here to decide
17 today is whether you need something to examine if
18 you've got no basis. But we will get to that. Let's
19 go back to your malicious code theory.

20 A Okay.

21 Q Now, isn't it true that the iVotronic machine,
22 when it leaves the factory, doesn't know anything
23 about the candidates or the races?

24 A That should be true, although my understanding
25 is that in some cases ES&S preconfigures the machines

1 for counties who aren't prepared to do it for
2 themselves. I don't think that's universally true.

3 Q Let's talk about Sarasota County. Isn't it
4 true that the iVotronic machine didn't know anything
5 about the Sarasota County race when they were received
6 by the county?

7 A That should be true.

8 Q Do you have any reason to believe that's not
9 true?

10 A I have no reason to believe it's not true.

11 Q So it would be part of the basis of your
12 opinion to assume that that was true?

13 A I want to be clear. That would be an
14 operating assumption, but that could well be proven
15 false based on evidence that I might observe later.

16 Q But as you're testifying here today, that's a
17 working assumption of yours that you rely on to form
18 your opinions?

19 A I consider the malicious software hypothesis
20 to be less likely than the software bug hypothesis.

21 Q I'm going to go through these one at a time.

22 A Okay.

23 Q We're talking about malicious software now.

24 Do you have any reason to believe -- withdrawn.

25 Is part of the foundation of your opinion that

1 when the machines, the iVotronic machines that were
2 received by Sarasota County, they didn't know anything
3 about the race that ultimately was run in Sarasota
4 County in 2006?

5 A They shouldn't have.

6 Q And then -- well isn't it a fact that it's
7 part of your working theory that they didn't?

8 A Yes, it is.

9 Q Okay. Now, isn't it also true that, in order
10 to clear and test, and in order to get a machine ready
11 for a race, that you put a cartridge into that machine
12 which tells the machine about the race?

13 A That's one of several ways to configure the
14 machine.

15 Q How did it happen in Sarasota County?

16 A I haven't had -- I haven't seen their exact
17 procedures. There are several different ways that the
18 machine allows -- there are several different ways
19 that you can do it.

20 Q So your opinion is not based on your knowledge
21 of how this was done in Sarasota County; you're just
22 saying, well, they could have done it in any number of
23 ways?

24 A There are several different ways.

25 Q Okay. Now, let's assume that what Sarasota

1 County did is they loaded up the race as they were
2 setting the machines up. Is that fair?

3 A That would be a reasonable way to do it.

4 Q All right. Let's assume that for now. What
5 happened when the candidates were brought into the
6 machine on this -- from this -- I think you called it
7 a PCB?

8 A PEB.

9 Q PEB. Thank you. From the PEB they're brought
10 into the machine. Aren't they then assigned an index
11 number by the machine?

12 A I believe the index numbers are assigned
13 before it gets to the machine, but yes.

14 Q So each candidate is given an index number?

15 A Yes.

16 Q That's a function of what the PEB looks like,
17 not a function of the software of the machine; right?

18 A The machine interprets what's on the PEB, and
19 it could interpret it in any of a variety of fashions.
20 And I can't know that for certain until I can see the
21 software.

22 Q Well I hear you saying that, but I want to
23 focus you in on the fact that the PEB defines the
24 index number for a candidate, not the machine; right?

25 A It defines it, yes.

1 Q Okay. So that it was entirely within Sarasota
2 County's control whether to put Candidate Jennings at
3 one location and Candidate Buchanan at another
4 location, and the number that they would get to be
5 indexed inside the machine could -- was entirely
6 within Sarasota County's control?

7 A That's approximately true.

8 Q So that if someone were to have tried to put
9 malicious software on the iVotronic machine before it
10 arrived in Sarasota County, they would have to know in
11 advance what the Sarasota County ballot looked like in
12 order to have this malicious software undervote
13 Jennings votes?

14 A That's false.

15 Q Okay. Let's try that one step at a time.

16 A Okay.

17 Q Wouldn't someone writing malicious code have
18 to add, you know, votes or take votes away from a
19 candidate?

20 A That would be one vote of malice. There are
21 others.

22 Q Okay. Okay. So let's get to some of your
23 malice theories. What other malice theories do you
24 have?

25 A Malicious software could be engineered in a

1 number of fashions. Malicious software could be
2 engineered to tamper with vote totals. It could be
3 engineered to simply cause machines to fail in
4 unexpected ways.

5 Q Okay. Any anecdotal evidence of machines
6 failing in unexpected ways?

7 A In this particular election, I'm not aware of
8 any such anecdotes.

9 Q We're focused on this election. In this
10 election is there any anecdotal evidence of any memory
11 exception errors?

12 A The anecdotal evidence that might be germane
13 to this is that there is some anecdotal evidence --
14 I'm answering your question.

15 Q Memory exception errors?

16 A Would you like me to answer your question, or
17 do you want to challenge me?

18 Q I'm making sure you're answering the question.

19 A I am answering your question.

20 Q Is there any anecdotal evidence of memory
21 exception errors; yes or no?

22 A There is evidence of ballots sometimes not
23 appearing on the screen. Now, that could possibly be
24 the result of an internal memory exception, among
25 other things. Something such as a memory exception

1 error, which is an internal error, could manifest
2 itself in a number of externally-visible ways.

3 Q Frequently by program termination; right?

4 A Including but not limited to program
5 termination.

6 Q Any anecdotal evidence of program termination?

7 A I'm not aware of any such evidence.

8 Q So the malicious software as you posit, you
9 were going through a series of theories as to how
10 this malicious software -- you said it could affect
11 vote totals; right?

12 A Yes.

13 Q But you have to know in advance which index
14 number a candidate would be --

15 A No, you don't.

16 Q Why not?

17 A That's not true.

18 Q How would you do it to affect a specific
19 race -- let me ask that differently. Isn't it true
20 that to affect a specific race in a specific way, you
21 have to know in advance what the PEB's ballot
22 definition file would look like?

23 A No, you do not.

24 Q Okay.

25 A It's not necessary. I can explain how you can

1 do it if you would like to know.

2 Q No. No. I'm sure you will be able to do
3 that.

4 And let me just make sure that I have you
5 clear, that you are saying that someone could, at the
6 factory, for example, write a malicious program that
7 would undervote Jennings without knowing what the
8 ballot definition file looks like?

9 A That's less likely, but it's possible.

10 Q Anything is possible; right?

11 A I can detail for you exactly how somebody
12 would do it if they really wanted.

13 Q Anything is possible; right?

14 A It could be done with a certain number of
15 insiders with certain skills that we could detail if
16 you would like.

17 Q All right. Are you able to demonstrate
18 software bugs in the operation of systems generally?

19 A Yes.

20 Q And how about bugs that create, say, in excess
21 of 10 or 12 percent errors? Are you able to
22 demonstrate those in the operative systems?

23 A I don't understand your question.

24 Q If a bug causes 10 percent errors in the
25 calculation or 12 percent errors in the calculation,

1 can you demonstrate that?

2 A If I can identify the root cause of the bug,
3 then I might be able to produce a demonstration of it
4 taking effect.

5 Q But you don't think that you could demonstrate
6 it simply by testing a machine and seeing if the
7 machine would evidence that bug?

8 A As I've said several times today, testing can
9 never prove -- can never prove the absence of a bug.

10 Q I understand. But we're talking about votes
11 here, not bugs.

12 A As I've said several times, by examining a
13 source code I might be able to identify the root cause
14 of the problem, and that would lead me to be able to
15 produce an appropriate demonstration.

16 Q Isn't it true that by examining the machine
17 you might be able to identify the bug?

18 A Depends on the nature of the bug.

19 Q I'm sure it does. And how about a bug that
20 would occur, say, 12 percent of the time? Don't you
21 think by demonstrating -- by testing the machine you
22 could demonstrate the existence of a bug that would
23 occur more than one in ten times?

24 A Depends how you test the machines.

25 Q Certainly you would be intelligent enough to

1 do that; right?

2 A I could construct tests. They may or may not
3 be able to reproduce the bug.

4 Q Okay. Now, what percentage error was found in
5 the parallel testing done by the state?

6 A My understanding, based on documents I've not
7 yet read, is that they found no errors.

8 Q Zero percent?

9 A That's my understanding.

10 Q All right. Now, if Dr. Stewart is right, how
11 many errors should we have seen in the parallel
12 testing; that is, you know, according to Dr. Stewart?

13 A I can't speak for Dr. Stewart, so I don't know
14 what he would say.

15 Q Well he attributed some number to machine
16 malfunction; I think he said the number was 14,000 for
17 the vote?

18 A I believe that's what he said.

19 Q Something like 12 percent; right?

20 A I believe that's what he said.

21 Q So that, according to Dr. Stewart, we should
22 have seen in the parallel testing about 12 percent,
23 which is a pretty large number; right?

24 A That would depend how the parallel testing was
25 constructed.

1 Q How many votes were cast in the parallel
2 testing?

3 A A number roughly equivalent to the number of
4 votes that a typical machine would experience in a
5 day.

6 Q Times five machines, times two days; right?

7 A That's correct.

8 Q So that would be the number of votes that
9 would have been experienced by ten machines in a day
10 or something like 500; right?

11 A Approximately, yes.

12 Q All right. And what's 12 percent of 500?

13 A Sixty.

14 Q All right. And how many errors were actually
15 observed over those 500 cast ballots?

16 A My understanding is that they observed no
17 errors.

18 Q Zero?

19 A That's my understanding.

20 Q All right. Now, I want to talk a little bit
21 about something that I heard you say yesterday where
22 you were talking about a calibration problem.

23 A Yes.

24 Q All right. By "calibration," I guess you mean
25 that where you touch the screen might not be

1 reflective of where the machine understands that you
2 touched it; right?

3 A That's approximately correct.

4 Q So that if you touch the screen here, the
5 machine might see you touching it down here, that kind
6 of thing.

7 A Probably not that gross of an error, but
8 approximately.

9 Q Okay. Maybe that far apart (indicating)?

10 A Depends on how the machine is calibrated.
11 There have also been studies that show if, for
12 example, you have your hand where your thumb is
13 touching the screen on one side while you're touching
14 it on the other, that could cause errors.

15 Q I want to talk about this calibration bug.
16 Does it affect your opinion at all if I tell you when
17 someone touches that screen, the candidate flashes?

18 A That has nothing to do with calibration.

19 Q Nothing to do with it? You use ATMs?

20 A Yes, I do.

21 Q You ever not see them quite right in
22 calibration?

23 A ATMs are often miscalibrated.

24 Q You manage to use them though; right?

25 A Sometimes it's difficult, but, yes.

1 Q But you get your money out of them when you
2 need it?

3 A Yes, I do.

4 Q Okay. Let's talk about another one of your
5 theories, the ballot definition file overloading the
6 machine theory; right?

7 A Yes.

8 Q You remember that. You had three theories.
9 You had the malfunction on calibration; you had the
10 volatile to nonvolatile malfunction, which we will
11 talk about in a minute, and you had the ballot
12 definition file overloading the system.

13 A That could be a possibility.

14 Q You gave those yesterday as your theories.

15 A Those are some starting theories, yes.

16 Q Those are the ones I heard you testify about,
17 so we will talk about those.

18 A Okay.

19 Q Now, definition file overloaded. Now, do you
20 have any basis to suggest that the ballot definition
21 file did in fact overload the iVotronic machine?

22 A Actually I do.

23 Q Okay. Let's talk about that. The same ballot
24 definition file was used in parallel testing.

25 A Uh-huh.

1 Q No errors were observed in parallel testing.

2 A Okay.

3 Q Do you find that concerning?

4 A I find it to be an interesting data point, but
5 it's not conclusive in any way.

6 Q No, of course not. Now, how many -- you spoke
7 at one point about having to conduct a large number
8 of -- to cast a large number of votes. Do you
9 remember that?

10 A Yes.

11 Q And I think when you said "cast a large
12 number," you didn't quantify that.

13 A That's correct.

14 Q How many?

15 A I can't quantify it. The way the process
16 would work is that you would try to assume the
17 behavior of a variety of different voters, whether
18 it's a shaking hand or large fingers or small fingers.
19 You would try a number of different things that
20 weren't considered during the parallel test.

21 Q You didn't say you would have to cast a number
22 of different kinds of votes; you just said a large
23 number. You're now suggesting that what you actually
24 have to do is have different, you know, people operate
25 the test.

1 A That would be a proper way of conducting a
2 test.

3 Q So you couldn't do it?

4 A That's not my expertise.

5 Q Okay. Now, you talked about a volatile to
6 nonvolatile memory malfunction.

7 A Yes.

8 Q Now, isn't part of the recount process review
9 to make sure that the memories inside the machine
10 match?

11 A The recount process doesn't actually consider
12 all the different memories inside the machine.

13 Q Does it consider any of them?

14 A It considers one of them.

15 Q And it makes sure that it matches the totals
16 previously reported?

17 A That's correct.

18 Q Nonvolatile memory is gone; isn't it?

19 A Yes, it is.

20 Q That's the nature of it being nonvolatile?

21 A That's the definition of the term.

22 Q You can't actually know what happened during
23 the election, because that information is gone?

24 A That depends.

25 Q You can't somehow recover the nonvolatile

1 memories that existed during the election?

2 A That depends on how the machine behaved and
3 whether it might have written something differently
4 onto its three different redundant memories.

5 Q Wasn't your testimony yesterday that
6 nonvolatile memory means that that memory is gone when
7 the machine is turned off?

8 A That is correct.

9 Q Okay. Those machines have all been turned off
10 since the election?

11 A That's correct.

12 Q That's your understanding? Good. Now you
13 said when you explained your three theories yesterday,
14 your malfunction between the touch and the selection,
15 that's the calibration problem --

16 A Yes.

17 Q -- without discussing the flashing. And you
18 discussed the volatile to nonvolatile malfunction, and
19 you discussed this ballot definition overload theory.
20 You said, when you discussed your three theories, you
21 actually had some leads from Dr. Stewart?

22 A Yes.

23 Q You mentioned one lead; do you remember that?

24 A Yes, I did.

25 Q Only one. And the one lead you mentioned was

1 that the machines that were cleared and tested later
2 had higher undervotes. Do you remember thinking that
3 that was a data point?

4 A It's an interesting fact, yes.

5 Q Statistical anomaly, huh?

6 A It's interesting.

7 Q All right. Now, how do you explain that
8 single machines that were cleared and tested later in
9 the process exhibited both higher and lower
10 undervotes?

11 A The -- my one hypothesis that could explain
12 the difference between early and late machine setup is
13 that, if calibration is part of the county's
14 procedure, they might have been sloppier about
15 calibration as they got closer to election day.
16 Because in the parallel testing the machines weren't
17 operated at normal angle of view, it's difficult to
18 make any statements about whether miscalibration would
19 be effective or not.

20 Q That's excellent. That goes right to your
21 calibration theory. That's what I was hoping you
22 would tell me, because the calibration theory is the
23 one where a person touches the screen, but somehow
24 accidentally votes for the wrong candidate; right?

25 A That would be one possible effect of

1 miscalibration.

2 Q Okay. And that would affect the orientation,
3 the orientation of the touch screen vis-a-vis the
4 image behind it; right?

5 A That's correct.

6 Q On every single voting page?

7 A Perhaps, perhaps not.

8 Q You think the calibration changes from voting
9 page to voting page?

10 A As I mentioned earlier, the question is not
11 the mapping from where you touch to something on the
12 screen behind it, but the mapping from where you touch
13 to one of the boxes. That mapping is operated in the
14 software, and it might vary depending on how many
15 boxes there are.

16 Q But do you suggest that the candidate that
17 flashes is not the same -- the candidate that gets the
18 X is not the same candidate that gets recorded?

19 A I don't know until I look at the software.

20 Q Couldn't one test that? You touch a
21 candidate; you see what the software records?

22 A One could possibly identify problems, but one
23 could never identify the absence of problems.

24 Q I understand. You can't be 100.00 percent
25 sure of anything. I understand your testimony about

1 that. But my question is, couldn't one touch the
2 screen, see which candidate lights up, say, on 500
3 votes in parallel testing, and then look at the
4 results of that and say, huh, no errors?

5 A Without knowing exactly the details of how the
6 parallel testing was conducted and how they reconciled
7 the errors that naturally occurred during parallel
8 testing, I can't really speak to that.

9 Q You don't know those details?

10 A Because they haven't been made available yet.

11 Q You don't know those details?

12 A Because they haven't been made available yet.

13 Q I'm sorry. You don't know them; right?

14 A Yes, I don't.

15 Q And you didn't go to the parallel testing to
16 watch what happened?

17 A That wouldn't have been helpful in this
18 regard.

19 Q In any regard; right?

20 A In this specific regard.

21 Q Okay. Let's talk about voter abstention, one
22 of your theories. Do you remember you had a theory
23 that voter abstention, you know, may have accounted
24 for some of the anomaly?

25 A That's correct.

1 Q All right. And you said that it's unreliable
2 to do a telephone poll; right?

3 A That's correct.

4 Q Because people will lie to support their
5 candidate; that's what you said?

6 A People can.

7 Q People can lie?

8 A Yes.

9 Q That's what you said, lie; right?

10 A That is something people can do.

11 Q To support their candidate, that's why you
12 said they might lie?

13 A That's correct.

14 Q Let me focus in. If someone in the election
15 voted for Jennings, and you called them up and said,
16 can you tell me who you voted for, how could they lie
17 to support their candidate?

18 A For that particular question -- the issue is,
19 if you were surveying them to ask whether they saw any
20 of the issues that have been discussed earlier, such
21 as disappearing, you know, not seeing, things like
22 that.

23 Q Let's focus on undervote. How could a person
24 asked if they voted for Jennings lie to support their
25 candidate?

1 A They might state that everything they saw
2 appeared normally, as it was meant to.

3 Q And that would be a lie to support Jennings?

4 A I'm sorry. The lie to support Jennings would
5 be stating that they saw problems with their vote
6 being counted properly.

7 Q Well they couldn't tell how their vote was
8 counted; could they?

9 A They can't tell how their vote is counted, but
10 they can observe anomalies in the machine's visible
11 behavior.

12 Q So someone who voted for Jennings might lie
13 and say that their vote wasn't recorded properly?

14 A That is a possibility.

15 Q Okay. What about someone who voted for
16 Buchanan? How might they lie to support their
17 candidate?

18 A They might lie to say that they experienced no
19 problems, when in fact they did experience a problem.

20 Q But it goes back to, if someone believes they
21 voted for Buchanan, they would say that they voted for
22 Buchanan; right?

23 A Not necessarily. It might be in their
24 interests to say that they experienced --

25 Q In their interests?

1 A I want to get this correct. Somebody who
2 supports Buchanan, it would be in their interests to
3 say that they experienced no problems, even if in fact
4 they did experience a problem.

5 Q Well if they believe they voted for Buchanan,
6 regardless of any problems they may have experienced
7 in getting there, if they believe they voted for
8 Buchanan, they couldn't really lie to support their
9 candidate; could they?

10 A They could lie to support Buchanan by stating
11 that they experienced no problems if in fact they did
12 experience problems.

13 Q But with the question of who they voted for,
14 in other words, if we're trying to determine the
15 number of undervotes, and we asked people who voted
16 for Jennings whether or not -- who they voted for, and
17 they said, I voted for Jennings, how could they lie to
18 support their candidate in terms of us trying to
19 determine what the undervote was?

20 A The issue in the undervote concerns whether
21 the machines malfunctioned. And falsifying statements
22 about observable malfunctions is how they could lie.

23 Q Okay. So let me ask maybe the simplest
24 question of all. If someone intentionally
25 undervoted --

1 A Yes.

2 Q -- and according to the election results,
3 there were 18,000 undervotes. If someone abstained;
4 you call that an undervote, how could they lie to
5 support their candidate?

6 A If somebody is abstaining, then they don't
7 have a candidate to lie to support.

8 Q That's right. They couldn't lie to support
9 their candidate, because they don't have a candidate
10 to support.

11 A Uh -- actually that's not true.

12 Q Ah, okay.

13 A Somebody who chose on election day to abstain
14 might have changed their opinion subsequent to
15 election day and could then strategically lie to a
16 surveyor.

17 Q I see. So your theory of why telephone polls
18 to determine how many people undervoted would be
19 unreliable is because all the people who undervoted on
20 election day intentionally have since decided they
21 want to support a candidate and realized that that's
22 what this poll will do and will lie?

23 MR. COFFEY: Your Honor, I object. We didn't
24 discuss telephone polls on direct. And we're going
25 on and on about telephone polls.

1 THE COURT: We've been into telephone polls;
2 you didn't object before. You can't object now.
3 Answer the question.

4 THE WITNESS: I'm sorry. Could you restate
5 the question?

6 (Pending question read).

7 A I can't make any statement as to how many
8 voters will or will not choose to strategically lie to
9 a phone surveyor.

10 BY MR. LANDA:

11 Q Now you suggest that instead of doing a poll,
12 that we use some form of demographic data to fill in
13 the gaps; right?

14 A Which is what Dr. Stewart did.

15 Q That's what you suggest in your report.

16 A Yes.

17 Q Let's talk about demographic data. Which
18 county would you suggest using to fill in these gaps?

19 A It would be more complicated than that. And
20 this really isn't my specialty.

21 Q It's in your report. I'm trying to understand
22 the basis --

23 MR. COFFEY: Your Honor, the report was not
24 presented in part of his direct examination. They
25 now want to go into what was a direct on computer

1 science issues, and to I guess what is a human
2 factors or demographic analysis, which he did not
3 testify about. I simply think it's beyond the
4 scope of the direct.

5 MR. LANDA: Your Honor, this goes directly to
6 the foundation that sits beneath the witness's
7 testimony of his necessity to review the code; that
8 is, his theories of how the code is going to assist
9 him.

10 THE COURT: I will allow it, counsel.

11 THE WITNESS: Could you please restate the
12 question?

13 MR. LANDA: Madam Reporter, can you read that
14 back, please.

15 (Pending question read).

16 BY MR. LANDA:

17 Q Which county would you use to fill in the
18 gaps?

19 A You wouldn't go county to county. You would
20 go precinct to precinct, try to do what's called I
21 believe precinct matching, where you try to identify
22 precincts of comparable demographics, and you would
23 look for such precincts outside of -- outside of
24 Sarasota County that had demographics comparable to
25 the precincts inside Sarasota County. And that might

1 be one of many ways that you could try to fill in the
2 blanks.

3 But, again, this is something that political
4 scientists do for a living, and I don't. So I am just
5 presenting a very -- my broad understanding of how
6 political scientists do what they do.

7 BY MR. LANDA:

8 Q So you have no opinion as to how you would
9 select that data?

10 A That's not really what I do.

11 Q You are aware Buchanan won all of the other
12 counties other than Sarasota County?

13 A What happened in the county is irrelevant to
14 what happened in particular precincts.

15 Q I'm sorry. You are aware that Buchanan won
16 all of the other counties other than Sarasota County?

17 A I am aware of that.

18 Q And the data you would take from that county,
19 that would be just undervote data, not election result
20 data?

21 A As I've said before, this is not my specialty.
22 What you would do is that you would most likely look
23 at the vote totals by precinct, and you would try to
24 match precincts and, you know, where possible,
25 between, you know, from -- demographically.

1 Q Is it your understanding that you can use
2 demographics to predict the outcome of an election?

3 A That's a very broad question, and that's not
4 my -- I don't really have the experience to be able to
5 answer it.

6 Q You weren't around in 1948 when the paper said
7 President Dewey?

8 A I'm aware of the Dewey defeats Truman
9 photograph was -- resulted telephone polls that were
10 conducted at the time predicted that Dewey would win
11 in a landslide, when in fact Truman won.

12 Q My question is, you weren't around then?

13 A I was not around then.

14 Q Now, do you have any idea -- I'm going back to
15 the idea that in your report you suggested casting a
16 large number of votes. Do you have any idea what you
17 would expect to see if you casted a large number of
18 votes?

19 A A scientist doesn't have expectations. You
20 collect the data and see what the data has to say.

21 Q Do you have any evidence, as you sit here
22 today, that a software bug changed votes in the
23 Congressional District 13 race in the 2006 election?

24 A I have -- I have -- I do have evidence that
25 suggests that some of the anecdotal descriptions of

1 visible problems of the display might be factual.

2 Q Visual problems on the display might be
3 factual.

4 A That's what I said.

5 Q Do you have any evidence that a software bug
6 changed votes in the Congressional District 13 race in
7 the 2006 election?

8 A I have evidence that is suggestive of that.

9 Q And that's anecdotal evidence?

10 A No, it's not.

11 Q It's not?

12 A Would you like me to describe it for you?

13 Q Well I suspect you will anyway, but I thought
14 you did on direct; did you not?

15 A I did not.

16 Q Okay. Then that's fine. How many counties do
17 you think, or how many precincts do you think were
18 affected by the software bug?

19 A I don't know.

20 Q How many races were affected?

21 A I don't know.

22 Q You didn't do any of that analysis; right?

23 A That's not -- that's what Dr. Stewart did.

24 Q But all that data is available to you; right,
25 the number of counties, the number of races that might

1 have been affected?

2 A Yes.

3 Q All right. Now, I take it you have no opinion
4 on why this alleged bug operated in -- might have
5 operated in only a single precinct or a single county
6 and in only one race; right?

7 A I have suggested before that this could be
8 related to the large number of check boxes appearing
9 on a single screen.

10 Q Okay. You mentioned in your report buffer
11 overflow, latent buffer overflow?

12 A Yes.

13 Q "Latent" meaning something that happens later?

14 A No, meaning it's there, but hasn't manifested
15 itself yet.

16 Q We're talking about buffer overflow; right?

17 A Yes.

18 Q Can you do tests to see if there is a buffer
19 overflow?

20 A There are software testing tools that can
21 identify possible overflows in software.

22 Q First you have to identify which buffer;
23 right?

24 A There are automated tools that can do this;
25 you just feed it in the program and hit the go button

1 and have a complete report.

2 Q You need to figure out which buffer you're
3 trying to see if it overflowed; right?

4 A I don't understand -- your question is
5 incomplete.

6 Q You're talking about latent buffer overflow.
7 What buffer are you talking about?

8 A There are numerous buffers throughout any
9 piece of software.

10 Q So you have no idea?

11 A It actually doesn't matter.

12 Q Doesn't matter. It could be any buffer?

13 A A buffer overflow of any buffer could result
14 in some of the paper we've seen.

15 Q Could potentially. Is there a statistical
16 number you have for that, like .01 percent or
17 something?

18 A The statistic I have is 18,000 undervotes.

19 Q Yes, yes, which you can't reproduce; right?

20 A Haven't had an opportunity to try.

21 Q Which the parallel testing did not reproduce?

22 A Parallel testing did not reproduce.

23 Q Can you test for buffer overflows? Can you
24 test the machine for buffer overflows?

25 A You can test software for buffer overflows.

1 Q But you can't test the machine?

2 A This is -- buffer overflows are something that
3 you can detect by examining software; you can't detect
4 by pressing buttons on a screen.

5 Q If it's a keyboard or touch screen buffer?

6 A A buffer overflow might manifest itself as
7 some of the things that we've seen in the anecdotal
8 evidence.

9 Q Hold on.

10 A But you won't see a thing on the screen that
11 says buffer overflow.

12 Q Hold on. There is a touch screen on the
13 iVotronic machine; right?

14 A Yes.

15 Q That's the principal interface between the
16 voter and the machine?

17 A Except for disabled voters, but yes.

18 Q Okay. For most voters, for non-disabled
19 voters, that's the principal interface?

20 A Yes.

21 Q And there is a touch screen buffer; right?

22 A I don't know.

23 Q Okay. So you really --

24 A Presumably there is.

25 Q You really don't know what buffer you're

1 talking about. When you said buffer overflow, you
2 said any one of a number of software bugs, including
3 buffer overflow. You have no basis --

4 A I do have a basis.

5 Q Let's focus on that. What buffer are you
6 talking about?

7 A I can't name the specific buffer.

8 Q Can you tell me what the buffer does?

9 A I said I can't name a specific buffer.

10 Q I'm asking for a function.

11 A I can't name a specific function.

12 Q Okay.

13 A That's why I need to look at the software.

14 Q Now you said the testing can never prove the
15 absence of relevant software bugs.

16 A That's correct.

17 Q What did you mean "relevant," the word
18 "relevant"?

19 A Well, by "relevant," I meant germane to the
20 undervote rate observed the Sarasota County.
21 Presumably there may be software bugs that aren't
22 germane to that undervote rate in Sarasota County.
23 Testing couldn't determine the absence of those
24 either.

25 Q Can you show that something is more likely

1 than not?

2 A I don't -- in my world something either is or
3 isn't. Likely -- I mean I don't understand what you
4 mean by that phrase.

5 Q Okay. So it's got to be either is or isn't.
6 There is no kind of more likely than not in your
7 world; right?

8 A When talking about software bugs, either
9 they're present or absent.

10 Q Let's talk about that now. When -- let's say
11 you had access to the software.

12 A Yes.

13 Q Hypothetically, because I suggest you
14 shouldn't. Let's say you had access to it, and let's
15 say another expert had access to it. Are you telling
16 me there is zero chance the two of you would give
17 different factual testimony about -- different expert
18 testimony about how that software works?

19 A What would happen is, different experts might
20 identify different problems, and we could verify each
21 other's. If I find a problem, the other expert could
22 verify it. If they find a problem, I could verify it.

23 Q Is it possible the two of you disagree about a
24 problem?

25 A If we identify a problem, then the

1 verification would be very straightforward. And by
2 and large we would probably agree with each other.

3 Q So that it would be fine to give the source
4 code to a different expert, because it's an objective
5 standard; right? In other words, experts wouldn't
6 disagree about whether or not a program works?

7 A I disagree with your characterization.

8 Q Okay. So this is just going to create two
9 different experts with two different opinions about
10 how the software works?

11 A I disagree with that as well.

12 Q If you found a software bug, could you use it
13 to show the number of legal votes for Jennings that
14 were rejected?

15 MR. COFFEY: I just object, as we have
16 consistently, Judge, to attempting to give a
17 nonlawyer some question about what's a legal vote
18 versus what's an illegal vote. I don't think --

19 THE COURT: Rephrase your question.

20 BY MR. LANDA:

21 Q Sure. If you found a software bug, could you
22 use it to show the number of votes cast during the
23 2006 Congressional District 13 race in favor of
24 Jennings, Jennings, that were rejected?

25 A I don't understand what you mean by

1 "rejected."

2 Q That weren't shown as votes for Jennings.

3 A The answer to your question would depend on
4 the nature of the particular bug. In some cases a bug
5 might have left behind cookie crumbs from which I
6 could reconstruct what actually happened; in other
7 cases a bug might not leave behind a trail. It all
8 depends on the specific bug. I won't know until I
9 look.

10 Q Bugs leave cookie crumbs?

11 A Sometimes they do; sometimes they don't.

12 Q Couldn't testing reveal these bugs?

13 A Sometimes it might; sometimes it might not.

14 Q Let's focus on that.

15 THE COURT: Excuse me, counsel. That's the
16 fourth time you've gone down that road. Move on.

17 MR. LANDA: Thank you, Your Honor.

18 BY MR. LANDA:

19 Q Do you doubt the accuracy of the parallel
20 testing that was conducted by the county?

21 A I don't doubt its accuracy. I doubt its
22 completeness.

23 Q Okay. And in that test, is it correct that
24 the input that was given to the iVotronic machines was
25 equal to the output that the machines reported?

1 A That's my understanding, based on documents
2 that I have not read.

3 Q All right. Now, I just want to confirm your
4 understanding of the iVotronic machine itself again.
5 And I know you haven't used it, so maybe you don't
6 have an understanding of it. But to cast the vote,
7 what do you do?

8 A After you've completed the review screen,
9 there is a button on the top that has a red light
10 behind it that has "vote" printed on the surface, and
11 the voter presses the blinking red light.

12 Q Okay. And it's correct; is it not, that the
13 voter can review selection for every race and every
14 ballot measure before casting their vote?

15 A That is the design of the machine.

16 Q That's true; right?

17 A There are -- there is some evidence to suggest
18 there might be problems with that process.

19 Q But they can review their selection for the --
20 for every race and ballot measure before casting the
21 vote?

22 A If and only if the machine is operating
23 correctly.

24 Q Right. And they can confirm their selection
25 for every race in every ballot measure before casting

1 their vote?

2 A If and only if the machine is operating
3 correctly.

4 Q Okay. As it was in the parallel testing?

5 A As it appears to have been in the parallel
6 testing.

7 Q Okay. And the iVotronic warns voters when
8 they fail to make a selection for an office or a
9 ballot measure?

10 A If and only if the machine is operating
11 correctly.

12 Q As it was in the parallel testing?

13 A As it appears to have been.

14 Q Okay. And it warns them by placing a red "no
15 selection made"?

16 A That's my understand.

17 Q Okay. And it shows that red directly beneath
18 the office or ballot measure in question; right?

19 A If and only if the machine is operating
20 correctly.

21 Q The iVotronic machine doesn't permanently
22 record the voter selection until the voter pushes the
23 vote button?

24 A That's my understanding.

25 Q I think I only have one more question. Have

1 you ever seen a bug cause a voting machine to create
2 undervotes for a specific candidate during an election
3 but not show up at all in parallel testing?

4 A I have never seen such a bug before.

5 MR. LANDA: Thank you.

6 MR. LABASKY: No questions, Your Honor.

7 MR. WINSOR: Nothing from the state
8 plaintiffs.

9 THE COURT: Anyone else? Redirect?

10 MR. COFFEY: Yes, Your Honor.

11 REDIRECT EXAMINATION

12 BY MR. COFFEY:

13 Q Professor Wallach, just sort of beginning with
14 the last question, have you ever seen a competitive
15 congressional election in a non-presidential year that
16 had 18,000 undervotes before?

17 A I'm not an expert on the history of
18 congressional elections in this country. But it is
19 certainly an anomalous result.

20 Q And have you ever had the opportunity to
21 review the source code in an undervote controversy in
22 order to find out whether there is a software bug or
23 not?

24 A I have never had any such opportunity.

25 Q With respect to the questions that you heard

1 about parallel testing, I think your comment was that
2 it was incomplete?

3 A That's correct.

4 Q And would it have been more complete if the
5 testing had been done by people who did not work for
6 the same agency that had already certified the
7 equipment and the software?

8 A Irregardless of who they work for, I think you
9 would have had -- you would have needed to have a
10 broader selection of voters who would be doing the
11 vote presses.

12 Q And would it have been more complete if you
13 had more than 12 people doing the voting testing who
14 were randomly selected from the public according to a
15 matching demographic profile as opposed to employees
16 of the State of Florida?

17 A I would certainly -- the tests would be more
18 complete if you have broader demographics of the
19 testers.

20 Q Would it be more complete if you used testers
21 who were not employees of the same state agency that
22 was involved in certifying the process?

23 MR. LANDA: Objection, Your Honor. These are
24 all leading questions.

25 THE COURT: They are leading, Mr. Coffey.

1 BY MR. COFFEY:

2 Q Does it matter whether or not testers were
3 used who did not reflect the demographic composition
4 of Sarasota? Is that something that matters?

5 A That absolutely does matter.

6 Q Why?

7 A Because different demographics of people might
8 exhibit different behaviors. And there was, for
9 example, a test that the State of California conducted
10 on Diebold machines, where they discovered that one
11 particular voter had a habit of dragging her finger on
12 the screen, and that one particular voter's behavior
13 induced the machine to crash.

14 Had they not had a broad demographic of test
15 voters, they would never have discovered this
16 particular bug in the Diebold system.

17 Q Now, is there a difference in the way the
18 fingers press to a computer screen when the screen is
19 flat as opposed to when the screen is vertical?

20 A Absolutely. The angle of touch could have a
21 broad impact on how the touch is registered by the
22 screen.

23 Q If one of the possible bug ticklers was
24 somebody resting a thumb on a horizontal screen at the
25 same time they pressed a button, would that kind of

1 physical interaction with the screen be replicated in
2 a screen that was positioned vertically in front of
3 the tester?

4 A It would not be replicated.

5 Q Do you have any idea why, in doing the
6 parallel testing, they used a screen that was
7 displayed vertically rather than horizontally the way
8 the voters use the screen?

9 A I do not know why they chose to do it that
10 way.

11 Q In your opinion, does that affect the validity
12 of the so-called parallel testing?

13 A It certainly raises the need to perform new
14 tests that would be done closer to how the machines
15 were used on election day.

16 Q Why do you believe a testing of eight machines
17 is more meaningful than the level of testing that was
18 already done, where four machines -- four election day
19 machines were tested by the secretary of state's
20 office?

21 A There were nine different ballot styles used
22 in Sarasota County. And by having a broader selection
23 of machines, you can test all the different ballot
24 styles. It also lets you move a larger number of
25 voters and get a more statistically significant

1 sample.

2 Q Does it matter, in exploring through physical
3 testing, how -- what the sequence and rapidity is of
4 finger presses on a screen?

5 A Certainly you want to explore the space of all
6 possible ways that a voter might interact with the
7 voting machine.

8 Q Would a script that had longer intervals
9 between screen presses in your opinion faithfully
10 duplicate election day voting by voters?

11 A For some voters, yes; for others, no.

12 Q Why no?

13 A Because some voters might have -- might touch
14 things very rapidly; some voters might have fingers
15 that shake. There are a number of conditions you
16 could imagine that would not be captured adequately by
17 having touches spaced broadly apart.

18 Q In your experience, either as a scientist or
19 computer operator, has rapid touches of a computer
20 screen ever caused things to freeze or otherwise
21 malfunction?

22 A Sometimes crashes my cell phone if I press the
23 buttons too fast.

24 Q What about simultaneous movements on a
25 keyboard; can that have a different effect, or can

1 that trigger some either freeze of the computer screen
2 or other species of malfunction?

3 A Believe it or not, the keyboard I have on my
4 computer sometimes malfunctions in exactly the way you
5 describe. I need to get a new keyboard.

6 MR. COFFEY: Just a second.

7 BY MR. COFFEY:

8 Q Does it matter whether the test scripts
9 followed in the state audit for CD 13 either never or
10 hardly at all used a vote pattern in which a vote for
11 Buchanan was entered when screen two first appeared?

12 MR. LANDA: Objection, leading.

13 THE COURT: I'm going allow it. It takes
14 longer to argue it.

15 A If there was a miscalibration with the screen,
16 then you might have a voter who intended to vote for
17 Jennings, but it registered a vote for Buchanan, and
18 then the voter would need to correct that. And you
19 would need -- and since that probably -- we can assume
20 that that happened with some number of voters, that it
21 would be something you need to test as part of your
22 testing.

23 BY MR. COFFEY:

24 Q Now during the cross you mentioned that in a
25 previous experience you were involved with, you

1 indicated that, even with an open source platform, an
2 examination could take years; do you recall that
3 testimony?

4 A That's certainly possible.

5 Q Is the examination, based on your judgment,
6 within a reasonable degree of professional certainty,
7 necessary to prove or disprove the theory of machine
8 malfunction, is that going to take years here?

9 A It will not.

10 Q And what is your best professional judgment as
11 to how long that's going to take?

12 A Based on the analysis that we did of the
13 Diebold system, where four people spent two weeks
14 conducting the analysis, I would anticipate that a
15 similar level of effort would produce a similar result
16 in this case.

17 Q And you were also asked about the fact that in
18 the Diebold system there were no confidentiality
19 orders in place; do you recall that?

20 A That's correct.

21 Q And that you have advocated open source code
22 for election systems; is that correct?

23 A That's correct.

24 Q And if you are permitted to examine the source
25 code and other components that are considered by ES&S

1 to be its trade secrecy, are you going to ignore Judge
2 Gary's order because you think in a perfect world the
3 public should have greater access to voting
4 technology?

5 A I will obey any order of the court.

6 MR. COFFEY: Nothing further.

7 THE COURT: Thank you. You may step down.

8 MR. LANDA: Your Honor --

9 THE COURT: Nothing new was gone into.

10 MR. LANDA: Thank you, Your Honor.

11 THE COURT: You may step down.

12 Have any other witnesses, Mr. Coffey?

13 MR. COFFEY: No, Your Honor.

14 MR. CODY: Your Honor, I would ask to have
15 Professor Lewis go over to the computer terminal.

16 We're going to be putting a number of slides on
17 that --

18 MR. DeGRANDY: Your Honor, if we could have
19 five minutes to set up.

20 THE COURT: Why don't you take ten minutes.
21 Be back at quarter of by that clock.

22 (Short recess).

23 THE COURT: Okay. If you can't see, move the
24 chairs or come join the cameramen if you want.

25 MR. HERRON: I'm all right.

1 THE COURT: Y'all want to come over here to
2 see better, feel free to do so.

3 MR. FINLEY: Would it be possible for us to
4 obtain paper copies so that we don't have to --

5 THE COURT: I don't know if they have paper
6 copies.

7 MR. CODY: We do. I'm going to introduce
8 those into evidence at the conclusion of this.

9 THE COURT: It might be quicker -- do you have
10 copies for them?

11 MR. CODY: Yes.

12 THE COURT: If you give it to them now, it
13 might go a little quicker.

14 MR. CODY: While we're waiting for those to
15 get distributed, I'm Stephen Cody, representing
16 ES&S. I would like to move into evidence, from our
17 appendix we had Exhibits 1 through 6, which have
18 been provided with our brief on this issue. I
19 would like to move those into evidence at this
20 time.

21 I can provide the court with additional
22 copies. We've already filed them with the court as
23 part of our submission. So whatever is the court's
24 pleasure.

25 No. 1 is page 42 of the hearing that was held

1 in this matter. No. 2 is the November 30th public
2 statement issued by Sue Cobb regarding the parallel
3 tests. No. 3 is certificates issued by the Florida
4 Department of State concerning the certification of
5 Unity 2.4.4. No. 4 are certificates issued -- and
6 both of those, 3 and 4, are under seal --
7 certificates issued by the state for Unity 2.4.2.
8 Five is an advertisement by the Sarasota County
9 supervisor of elections regarding the logic and
10 accuracy testing of the voting tabulation equipment
11 that was scheduled on October 20th, 2006.

12 And 6 are the certified results of the logic
13 and accuracy testing issued by the canvassing board
14 of Sarasota County. I would move all of those into
15 evidence.

16 THE COURT: Any objection?

17 MR. HIRSCH: No objection.

18 MR. LANDA: No objection, Your Honor.

19 THE COURT: So received.

20 (ES&S's Exhibit Nos. 1 through 6 were
21 identified for the record and received in
22 evidence).

23 MR. CODY: As No. 7 we would move in a
24 certified copy of the results of the parallel
25 testing, which was issued on December 18th, 2006 by

1 the Bureau of Voting Systems Certification of the
2 Florida Department of State, Division of Elections.

3 MR. HIRSCH: Objection, Your Honor.

4 MR. FINLEY: Objection.

5 THE COURT: What basis?

6 MR. HIRSCH: The relevant hearsay objections
7 for public records and reports expressly doesn't
8 cover records that contain evaluations or
9 statements of opinion by public officials. Florida
10 Supreme Court case, Lee v. Department of Health and
11 Rehabilitative Services, which I'm happy to hand up
12 to the court, expressly says, in Florida rather
13 than offering this type of record, a witness must
14 be called who has personal knowledge of the facts.

15 Under the federal rules this might be
16 admissible. Under the public records exception of
17 Florida, it expressly doesn't have that exception.
18 It's limited to other types of public records.
19 This is not one of them.

20 MR. FINLEY: Your Honor, I would add that, as
21 defense counsel argued repeatedly yesterday, when
22 they believed that they were not allowed a live
23 witness that they could cross-examine. This report
24 doesn't even have an author. It indicates by
25 initials that it may have been composed by David

1 Drury, who is the head of the state division's
2 bureau of voting systems certification. But if
3 they're going to rely on this for its facts, for
4 the truth of what's asserted in it, we're certainly
5 entitled to examine the author.

6 MR. CODY: Your Honor, I believe that, one, as
7 a record which is under seal, there is no doubt
8 that this is a record from the department of state.
9 This is completely different from an e-mail which
10 is sent from one person to the other. This is an
11 official declaration by a division of the
12 government of the State of Florida.

13 And, two, it is a compilation of results of a
14 test which happened, which would be similar to
15 election results coming in. We don't require that
16 the supervisor of elections come in to certify the
17 result of any election that is going to be
18 determined by this court.

19 And on that basis, since it is the reflection
20 of official action by the state, we would ask that
21 it be admitted into evidence.

22 MR. HIRSCH: Your Honor, if I may. It's not a
23 question of authentication; it's a question of
24 hearsay. I mean, let me hand up to you --

25 THE COURT: Let me see it.

1 MR. HIRSCH: (Tendering document).

2 THE COURT: This was issued by the Department
3 of State; correct?

4 MR. CODY: Yes, sir.

5 THE COURT: This case cited here relates to
6 factual findings as a result of determining an
7 investigation made pursuant to authority granted by
8 law. I believe what they have there is a
9 certification from the Department of State, who is
10 not only authorized, but is the one agency that can
11 issue those things and the only agency that can
12 certify the accuracy of the testing.

13 I'm going to allow it over objection. Your
14 objection is noted.

15 MR. CODY: Thank you, Your Honor. We ask that
16 it be admitted as Exhibit No. 8.

17 MR. HIRSCH: Seven.

18 MR. CODY: Excuse me, Exhibit No. 7.

19 THE COURT: Seven.

20 (ES&S Exhibit No. 7 was identified for the
21 record and received in evidence).

22 MR. CODY: All right. I would now call
23 Professor Michael Herron.

24 Thereupon,

25 MICHAEL CHARLES HERRON

1 was called as a witness, having been first duly sworn,
2 was examined and testified as follows:

3 THE COURT: State your full name, spell your
4 last name for the court reporter.

5 THE WITNESS: Michael Charles Herron,
6 H-E-R-R-O-N.

7 DIRECT EXAMINATION

8 BY MR. CODY:

9 Q And, Mr. Herron, where are you presently
10 employed?

11 A I'm an associate professor of government at
12 Dartmouth College.

13 Q And what is your area of academic study?

14 A I have several, but one of my areas is
15 studying of voting irregularities, undervotes,
16 overvotes, and so forth.

17 Q Can you give me a brief rundown of your
18 educational background?

19 A I received a bachelor's from Carnegie Mellon
20 University. I've received a master's in political
21 science from the University of Dayton. I received a
22 master's degree in statistics from Stanford University
23 and a Ph.D. from the graduate school of business at
24 Stanford University.

25 Q What is your your Ph.D. in?

1 A A field call political economics, which is at
2 the business school, mathematical political science.

3 Q And at Dartmouth College do you teach courses
4 in political science?

5 A The main courses I teach are in statistical
6 methods and American politics.

7 Q Have you published any academic papers
8 regarding the areas of your -- the focus that you
9 talked to us about?

10 A Yes, I have.

11 Q And can you briefly describe those.

12 A One paper that I have published with coauthors
13 was a study of the butterfly ballot in Florida in Palm
14 Beach County, which we've heard discussed. And
15 another paper was undervotes and overvotes in a
16 variety of counties as well.

17 Q And have you been asked by -- let me ask you,
18 have you looked into the Sarasota 2006 congressional
19 election prior to coming to the courtroom today?

20 A Yes, I have.

21 Q Now, did you begin that work as part of being
22 retained by ES&S?

23 A No, I did not.

24 Q What caused you to begin looking into this?

25 A Two things caused me to become interested in

1 this project. One, I have an ongoing research project
2 joint with Professor Jeff Lewis of UCLA, in which we
3 are looking at Pasco County, Florida, because we are
4 studying the effects of touch screen data there. The
5 sort of data we're interested in gathering, we thought
6 this case would provide an interesting opportunity to
7 gather more data relative to that touch screen
8 project.

9 The second reason is, on account of my past
10 experiences in studying voting irregularities, this is
11 simply academically interesting, and that motivated my
12 interest as well.

13 MR. CODY: At this point I would tender the
14 professor as an expert on elections and voting
15 patterns.

16 MR. HIRSCH: No objection, Your Honor.

17 MR. COFFEY: No objection.

18 MR. FINLEY: No objection.

19 THE COURT: So received.

20 BY MR. CODY:

21 Q Now, when did -- when were you contacted by
22 representatives of ES&S regarding your involvement in
23 this case?

24 A I believe in my declaration, of which I don't
25 have a copy in front of me, that was approximately two

1 weeks ago.

2 Q And was that after the time you began doing
3 your research in this matter?

4 A Yes. Yes, it was.

5 Q All right. What techniques did you use in --
6 well first of all, what data did you gather as part of
7 your investigation?

8 A As part of the investigation I've gathered,
9 along with my coauthors in this project, county level
10 data on undervotes, precinct level data from a variety
11 of counties, and ballot level data from a variety of
12 counties as well.

13 Q And what techniques have you used to analyze
14 the data that's been collected?

15 A We have used, and I have used standard
16 statistical techniques to evaluate different theories
17 of the undervote in Sarasota County. We've used
18 regression analyses, and we've used simple cross
19 tabulations, which is a fancy way of saying we've
20 counted to see where undervotes occur.

21 Q And are each of those three techniques that
22 you just described standard techniques that are used
23 within the social sciences?

24 A Absolutely.

25 Q And if another social scientist were to take

1 the data that you gathered and apply the same
2 techniques that you applied, would they likely produce
3 the same statistical results?

4 A I believe the answer is yes.

5 Q And so these are tests which could be
6 performed and replicated?

7 A Yes. Absolutely.

8 Q All right. Now, can you tell me, what was
9 your motivation in beginning this review and prior to
10 being contacted by representatives from ES&S?

11 A The motivation was the question -- if I may go
12 to the next slide?

13 Q Sure.

14 A The motivation was a very simple question, the
15 motivating question I should say, which is, what
16 exactly explains the undervote in Sarasota County in
17 the 13th congressional district in Florida.

18 Q And can you tell the court specifically what
19 precinct data you collected in order to do your
20 analysis?

21 A Yes. I'm going to go to the next slide. We
22 gathered data from a variety of counties. Those
23 counties were Broward, Charlotte, Collier, DeSoto,
24 Hardee, Hillsborough, Jackson, Lake, Lee, Manatee,
25 Martin, Miami-Dade, Nassau, Palm Beach, Pasco,

1 Pinellas, Sarasota and Sumter. So when I say we
2 gathered precinct data from those counties, what I
3 mean is that we requested from supervisors of
4 elections offices their precinct level records on how
5 many votes were cast for each race for each candidate
6 and total turnout by precinct.

7 This enables us in general to derive undervote
8 rates by precinct for this list of counties.

9 Q And did you receive this data directly from
10 the supervisors of elections of these various
11 counties?

12 A The supervisors of elections either e-mail the
13 data to us, to me sometimes, sometimes to research
14 assistants, and sometimes they mail it. We received
15 everything from a supervisor of elections office.

16 Q Now, why did you look at other counties
17 besides Sarasota County?

18 A Because, as I will make clear, I believe, the
19 problem that we think affected the undervote in
20 Sarasota County is a generic issue, a generic problem.
21 It is not unique to Sarasota County. In order --
22 according to good social science methodology, in order
23 to understand what happened in Sarasota County, you
24 have to look beyond Sarasota County.

25 And so that drove our interest in looking at

1 this list of counties here, some of which use
2 iVotronic voting equipment, some of which do not.
3 Some of the counties in this list use optical scan
4 voting; some use electronic voting made by
5 manufacturers other than ES&S.

6 Q Okay. Now, what is a ballot image?

7 A A ballot image is a list -- well, a ballot
8 image is a list of candidate choices made by a voter.
9 So, for example, if we have a ballot image from a
10 voter in Sarasota County, that means we have for this
11 particular individual the set of candidates for whom
12 that person cast a valid vote.

13 Q So for voter A, you could look at that ballot
14 image. Could you see how he voted in the senate race,
15 the governor's race, congressional race and any race
16 down the ballot?

17 A That is correct. If we had a ballot image
18 from a particular voter, we would know where this
19 person voted and where he or she undervoted.

20 Q And can you identify who that particular voter
21 is by name or any other characteristic?

22 A We cannot.

23 Q Can you tie those ballot images, though, to
24 specific precincts?

25 A Yes, we can. When a county provides us with a

1 set of ballot images, we know where they were
2 produced. We don't know, obviously because of privacy
3 issues, whether the voter was male or female, for
4 instance, but we know where they came from.

5 Q Can you identify those ballot images to
6 specific machines and specific precincts?

7 A Yes, we can.

8 Q And was that information provided to you?

9 A That information was provided to us.

10 Q And did you take that information into
11 consideration when you did the analysis that you
12 performed?

13 A Yes.

14 Q Okay. Now, approximately how many ballot
15 images have you looked at in the course of doing the
16 analysis?

17 A I'm going to go to the next slide. We have
18 ballot images from the counties listed on the current
19 slide; Charlotte, Collier, Jackson, Lake, Lee,
20 Miami-Dade, Nassau, Pasco, Sarasota and Sumter. As
21 made evident in that slide, this is approximately
22 880,000 ballot images.

23 Q Now, of that list of ballot image data
24 collected and analyzed, do any of those counties
25 besides Sarasota use the ES&S iVotronic machine?

1 A Yes, they do. Charlotte County uses the
2 iVotronic machine. Collier County uses iVotronics.
3 Jackson County uses iVotronics, so do Lake, Lee,
4 Miami-Dade, Pasco and Sumter. All of them do. We've
5 attempted to get images from other counties that use
6 different manufacturers, and so far none has been
7 provided to us.

8 Q Now, what races did you look at in terms of
9 making the analysis that you performed?

10 A I'm going to go to the next slide. To a broad
11 extent the races that I will focus on today are what
12 we call the top races contested in the election, the
13 2006 election in Florida. So that means the Florida
14 U.S. Senate race, which by law was the first race on
15 every ballot voted in this state.

16 In some cases voters also faced a
17 congressional district race. Obviously the exact race
18 that a voter faced depends on where he or she lives.

19 The third so-called top race is the Florida
20 governor's race, which was faced by every voter in
21 Florida, of course every voter in our sample, along
22 with the attorney general race, the chief financial
23 officer and the Florida commissioner of agriculture.

24 As you can see, the number of candidates for
25 these races varies. For the Florida U.S. Senate race

1 there were six, congressional race obviously varied by
2 congressional race. Florida Governor, there were six
3 candidates also with a write-in possibility; two
4 candidates in the attorney general, which I will
5 generally call the AG race.

6 There were two candidates in the chief
7 financial officer race, which I will generally call
8 CFO, and there were two candidates in the agricultural
9 race.

10 Q Now, did you have occasion to examine
11 undervoting in any of the races in Sarasota County
12 within Congressional District 13?

13 A Did we examine undervoting rate in Sarasota
14 County Congressional District 13?

15 Q Right, in other races than the Congressional
16 District 13 race, the Jennings-Buchanan race.

17 A Certainly. We looked at undervoting rates in
18 all of these so-called top races. And my analysis, as
19 I will show, ties together undervote rates in a
20 variety of these races.

21 Q Well, what did you find?

22 A Okay. I would like to first describe what we
23 found in several races.

24 THE WITNESS: Your Honor, may I approach the
25 exhibit?

1 THE COURT: Sure.

2 MS. STEELE: Your Honor, if he's going to
3 approach the exhibit, may I sit in the jury box?

4 THE COURT: Absolutely.

5 THE WITNESS: I would like to start by
6 answering this question by talking about the U.S.
7 Senate race. This graph, which I will explain in a
8 moment, describes precincts in CD 13 that have at
9 least 100 voters, with the exception of DeSoto
10 County, for which we do not have the data that we
11 need to analyze it.

12 There are five counties that make up CD 13;
13 Charlotte, DeSoto, Hardee, Manatee and Sarasota.

14 MR. CODY: Your Honor, can you see with the
15 witness there?

16 THE COURT: I can see fine.

17 THE WITNESS: So what you see in this plot
18 right here is a collection of dots. Each dot
19 represents one precinct. The color of these dots
20 denotes the county from which the precinct is
21 generated.

22 The purple dots, if you can see in this group
23 right here, denote Sarasota County precincts. The
24 brownish red dots denote Charlotte County
25 precincts, and the sort of bluish dots denote

1 precincts from Manatee and Hardee County.

2 On this graph -- and I will display several in
3 a moment -- all of which have the exact same
4 format, plots the absentee undervote rate in the
5 precinct on the X axis, with the undervote rates,
6 and then the Y axis you can see it says, election
7 day undervote rate.

8 This line is a 45-degree line, which basically
9 means that, if a precinct lies right on that line,
10 then the absentee and the election day undervote
11 rates are the same in that precinct. So what you
12 can see from this graph, which is for the U.S.
13 Senate race and CD 13, is that most of the
14 precincts are clustered around the 45-degree line;
15 which is that, broadly speaking, in these precincts
16 the absentee and election day undervote rates are
17 very similar.

18 Furthermore, it is quite obvious from this
19 grouping of points that the precincts across the
20 four counties that we are discussing are roughly
21 similar. So there is nothing unusual, when you
22 look at this cluster of points, that make you think
23 that anything is different about any particular
24 county in the U.S. Senate race.

25 That's what I mean by all precincts similar,

1 and, furthermore, election day and absentee
2 undervote rates similar, that means clustering
3 around the 45-degree line.

4 Now, if we look beyond the Senate race for the
5 CD 13 race, so now we're talking about the CD 13
6 race in the 13th congressional district, we have
7 this same sort of plot, absentee undervote rate on
8 the X axis, election day undervote rate on the
9 vertical axis or Y axis, and the color scheme is
10 the same.

11 What you can see here is that the purple dots,
12 which are -- denote precincts in Sarasota County,
13 all of them lie above this 45-degree line. What
14 does that mean?

15 That means in Sarasota County in the CD 13
16 race, the election day undervote rates are much
17 larger than the absentee undervote rates. You can
18 see the other counties in this case Manatee,
19 Hardee, and Charlotte, they're all clustered
20 together, and they're clustered on the 45-degree
21 line.

22 So the important point of this graph is the
23 contrast between the Senate race, which is, in some
24 sense, strikingly normal, and the congressional
25 13th race, CD 13 race, where all of the sudden, the

1 Sarasota County precincts look very, very
2 different. I should mention that the order of
3 voting in CD 13 was Senate, followed by CD 13.

4 Now, the next graph I'm going to put up shows
5 the third race, which is the Florida Governor's
6 race. Again, this is the order which voters would
7 have seen the races.

8 I will show you the exact same plot, which
9 looks very similar to the U.S. Senate plot. We see
10 in the third race, governor race, that, again, the
11 election day and absentee undervote rates, absentee
12 down here, election day rates over there, are, one,
13 clustered around the 45-degree line, meaning that
14 within precincts in these counties, the election
15 day undervote rates, the absentee undervote rates
16 are basically the same.

17 Furthermore, all the precincts throughout
18 these four counties are basically clustered as
19 well. If you were to compare the governor's race
20 and the senate race, doesn't look particularly
21 different. This race obviously does.

22 The fourth race in CD 13 -- and I say fourth;
23 that means fourth based by all voters -- was the
24 attorney general's race. So I will put up the same
25 sort of plot in the attorney general's race.

1 What you can see is something that looks a
2 little bit familiar, which is that, in this race,
3 there are a cluster of points that are high
4 relative to this 45-degree line. These points
5 denote precincts that have very high election day
6 undervote rates relative to absentee undervote
7 rates.

8 Now, when we looked at the CD 13 race in CD
9 13, we observed Sarasota County points up here.
10 Those were purple. Here is the plot. In the
11 attorney general's race, we observe brownish red
12 points. That's Charlotte County.

13 In fact, if you look at these rates between
14 approximately 20 percent and, say, 28 percent, the
15 undervote rate in the election day -- the election
16 day undervote rate in Charlotte County by precinct
17 is in some sense is greater than what you might
18 describe as the mass of these points, which is
19 around, as we know, 14 percent.

20 The undervote rate in Charlotte County and the
21 AG, attorney general's race, was approximately 25
22 percent. These eight points denote the eight
23 precincts in Charlotte County that are also in CD
24 13.

25 Charlotte County has a total of 80 precincts,

1 only eight of them lie within the 13th
2 congressional district. That's why there are only
3 eight points here. However, if you look at
4 Charlotte County as a whole across all of its 80
5 precincts, you find the undervote rate on election
6 day, approximately 25 percent.

7 So the point that I'm trying to make with this
8 slide is that, like the CD 13 race, we see -- this
9 is CD 13 -- a cluster of points that has election
10 day undervote rates much larger than absentee.
11 However, you can see in the AG race, the county is
12 different.

13 Before the anomalous county was Sarasota. Now
14 the anomalous county is Charlotte.

15 BY MR. CODY:

16 Q Now, were you able, as part of your analysis,
17 to look at the way in which the voters within Sarasota
18 County voted on particular ballot patterns?

19 A Yes, we were. We were able to use ballot
20 images, what I've referred to before, to study various
21 patterns. So the reason we decided to do this was
22 because this would suggest, the plots I have put up so
23 far, would suggest there was something very different
24 about the CD 13 race in Sarasota County and about the
25 AG race, the attorney general race, in Charlotte

1 County.

2 So it is natural to look at how the voters
3 behaved in those races. So I'm now going to put up a
4 series of slides and answer your question directly.

5 I'm going to describe what the slide -- I'm
6 going to describe this slide in general before talking
7 about some specific patterns that we observed in
8 related slides. This is for all Sarasota County
9 voters for whom we have ballot images. This means
10 election day and early voters.

11 There are, I should point out, no ballot
12 images for absentee voters in any of the counties that
13 I'm talking about, these ballot images that we know
14 of, because those voters used optical scan voting.

15 Q Would that be paper ballots?

16 A That means paper ballots.

17 Q All right.

18 A So if you look at these plots, what this plot
19 describes are common profiles or patterns across
20 voters. So consider an individual voter who, for
21 instance, voted Republican in every partisan race in
22 Sarasota County, senate race, CD 13, governor,
23 attorney general, CFO, so forth all the way down.
24 Following the partisan races, there was a sequence of
25 amendments. There is also a sequence of judge

1 retention votes.

2 If a voter cast Republican votes everywhere
3 and supported all the amendments and the retention
4 votes, this voter would be denoted as red with
5 Republican than what this color looks like as brown.
6 We can look at every single profile cast in Sarasota
7 County among election and early day voters and figure
8 out which profiles that were the most common.

9 What you can see from the graph, this axis
10 here denotes number of ballots. There were
11 approximately 119,000 ballots cast early on election
12 days in Sarasota County. What you can observe is that
13 the most common pattern among these ballots was
14 Republican -- excuse me -- Republican U.S. Senate,
15 Republican CD 13, Republican governors, so forth, then
16 on the amendments, yes, yes, yes, yes; judge votes,
17 yes, yes, yes, yes, yes.

18 This person voted straight ticket Republican
19 and yes on the nonpartisan votes.

20 Q Let me stop you. You say this person, by that
21 bar to the side. Does that mean there were
22 approximately 1500 people who voted in that pattern?

23 A That is correct.

24 Q Okay.

25 A So this axis here describes counts. In this

1 case, approximately 1500. So notice these counts are
2 stacked in order of their occurrence. So on top is
3 the most common. The second line is the second most
4 common and third, all the way down.

5 This is not the entire set of patterns. These
6 are the most common ones. You can see the second most
7 common pattern was straight Democrat, following by
8 support on all the amendments, following by support
9 for all the judge retention votes.

10 The thing I would like to point out here is
11 the absence of many open circles. These open circles
12 denote undervotes. So you can see this pattern down
13 here is the second pattern from the bottom, denotes
14 the type of voter who voted Republican on all of the
15 partisan votes and then undervoted after that.

16 So you can see there are undervotes, but they
17 are not among the more common -- they do not appear
18 among the most common patterns in Sarasota County.

19 Now I would now like to make a similar plot,
20 but only for voters who skipped the senate race. So
21 this is called -- this is the exact same plot for what
22 we called senate undervoters. So to make that clear,
23 notice that all of these circles are empty.

24 Why is that true? Because this plot is only
25 for senate undervoters. So of course they have a

1 senate undervote. What you will notice in contrast to
2 the earlier plots is there is a lot of white. People
3 who skipped the senate race tended to skip a lot of
4 races.

5 How can we see that? Well let's look at the
6 most common pattern among senate undervoters in
7 Sarasota County. That pattern is to vote for the
8 governor and nothing else. Okay? That person cast
9 undervotes all the way down the ticket -- using the
10 word "down," as if we have a physical ballot, but of
11 course it's actually sequenced screens. That is a
12 common pattern.

13 The second most common pattern was to skip the
14 senate race, vote on everything else. The third most
15 common pattern was to skip the senate race, vote in CD
16 13, and vote everywhere else and so forth.

17 The point I want to make by this figure is
18 that, once you skip the senate race, some of your
19 behavior becomes much more predictable. We know that
20 people -- from this plot -- people who skip the senate
21 race skip lots of races. That is very evident from
22 this, and we can tell it because we have ballot image
23 data.

24 Without ballot image data you can't make plots
25 like this, because you don't know the whole sequence

1 of votes across a set of races.

2 If we now look at CD 13 undervoters, we see a
3 very different pattern. So recall the previous chart
4 looked at ballot patterns among people who undervoted
5 in the senate race. This chart looks at ballot
6 patterns among people who skipped the CD 13 race.

7 I don't want to use the word "skip" in a
8 nonchalant way. What I mean are CD 13 undervoters.
9 Notice the CD 13 column here, all those circles are
10 empty. They're white. Why is that? Because this
11 chart is only for CD 13 undervoters.

12 You notice that one very common pattern is to
13 undervote only in CD 13 and vote Republican everywhere
14 else and support all the amendments, support all the
15 judicial retention candidates. Another common
16 pattern, the second most common pattern in this graph,
17 is to vote Democrat in the senate, CD 13 undervote,
18 followed by Democrat all the way down, followed by
19 support in the amendments and support in the judges.

20 There was one race, charter revision 2 in
21 Sarasota County, which did not have a Democratic
22 candidate. So strictly speaking, blue does not mean
23 Democrat. It means second candidate on the ballot,
24 which we can -- which is almost always the Democratic
25 candidate, with the exception of that race.

1 Q But in a charter revision, where it would be
2 yes or no, that would be the second choice on the
3 ballot?

4 A That is correct. So if you imagine that a
5 Democratic voter believed, either chose never to vote
6 for Republicans or believed the second option was
7 always a Democrat, you would expect to see this sort
8 of streak of blue, which in fact we do.

9 The main point of this chart, in contrast to
10 this one, which was the senate undervote rate, is
11 clearly, from this chart, if you were to ask me, here
12 is a voter who skipped the senate race, what else did
13 he do? I would most likely say he skipped a lot of
14 races.

15 In contrast, when you look at this race and
16 say, here was the voter who undervoted in CD 13, what
17 can you tell me about this person's behavior? The
18 answer is, it looks like he probably voted in a lot of
19 other races.

20 So clearly, undervoting in the CD 13 race is
21 very different than undervoting in the senate race in
22 the sense of predicting behavior in other races.

23 Q Professor, let me stop you there. From this
24 graph can you draw a conclusion that hitting a
25 specific pattern of votes for different candidates is

1 somehow related to the undervotes in Congressional
2 District 13?

3 A Let me answer that graph -- that question, by
4 going to this graph here. This question reflects a
5 conjecture, I believe, that some pattern of votes in
6 Sarasota County somehow led to the removal, in some
7 fashion, of a CD 13 vote that was correctly cast.

8 So how could we check to see if there is some
9 sort of magic pattern, as we might want to call it?
10 Okay. So let me explain how we can answer that
11 question.

12 I want to look now at a graph among -- that
13 considers top five statewide races, which means
14 senate -- excuse me, U.S. Senate, Florida Governor,
15 attorney general, CFO and agriculture. I want to look
16 at all the possible voting patterns, profiles, for
17 those five races in Sarasota County.

18 So this includes CD 13 voters and CD 13
19 undervoters. And we are looking at the profiles of
20 those voters on the top five races. We can, with our
21 ballot images, we can look at a particular profile;
22 for example, Republican, Republican, Republican,
23 Republican, and we can count how many people in CD 13
24 voted Republican, Republican, Republican, Republican,
25 Republican on the top five races. We can do the same

1 thing for the Democratic races -- excuse me, for the
2 Democratic votes and look at all possible patterns.

3 We can count the number of occurrences of each
4 pattern for the CD 13 undervoters, and we can count
5 the number of occurrences of each pattern for the CD
6 13 voters. So what this graph displays are counts on
7 a scale, to make this reasonable, it's a scale.
8 Notice this axis goes to 5,000. This axis goes to
9 10,000. That reflects the fact that there were more
10 CD 13 voters than undervoters. To make this graph
11 readable, we made that scale adjustment.

12 We can graph the frequency of each profile.
13 And what you observe, each dot represents some
14 frequency. So, for example, this red dot here is a
15 profile that is mainly Democratic -- excuse me, mainly
16 Republican.

17 How do we know that? Because we shaded these
18 dots in proportion to the number of Republican and
19 Democratic votes. So profiles that are reddish are
20 Republican. Profiles that are blue are more
21 Democratic.

22 Notice up here, this particular profile that
23 I'm highlighting, straight Republican, denotes -- you
24 will notice this is in the upper right-hand corner,
25 which means there were many straight Republican votes

1 and many straight Republican votes among CD 13
2 undervoters and many straight Republican votes among
3 CD 13 voters.

4 So points that are up here are very common.
5 Points that are down here are very uncommon. When I
6 say that, what I mean is, points that are up here are
7 common in both CD 13 undervoters and CD 13 voters.
8 And points that are here are uncommon in CD 13
9 undervoters and CD 13 voters.

10 In fact, points that are on this line appeared
11 in approximately the same frequencies among CD 13
12 undervoters and in CD 13 voters.

13 Q Now, Professor, do you see the same
14 approximate mix of red and blue dots above the
15 diagonal line as you do below the diagonal line?

16 A Yes. There is no obvious pattern in which we
17 see, for instance, all blue or all red either above or
18 below or in some unusual-looking pattern in that way.

19 Q Would this undercount or undercut, if you
20 will, the theory that somehow the machines were taking
21 votes on machines that were casting predominantly
22 Democratic votes and tossing out the vote for
23 Jennings?

24 A Yes. So I would like to call your attention
25 to this area of the screen right here.

1 Q That's the lower right-hand corner?

2 A The lower right-hand corner of this screen.

3 So you notice it is effectively empty. Let's suppose
4 in fact there were a point there. What would that
5 point represent?

6 This point would be some profile that appeared
7 very frequently in CD undervoters, but not frequently
8 in CD voters. Why is the absence of such a point like
9 that useful? Let's suppose there was some particular
10 profile that when you cast it caused your CD 13 vote
11 to vanish.

12 If that pattern were to happen, we would
13 observe lots of that pattern in the CD 13 undervoters
14 and not much of that pattern in CD 13 voters. We can
15 see there is no such pattern. So what that makes us
16 suspect is that there is no magic bullet, as it were,
17 that causes -- these among the top five races -- that
18 causes -- that a validly-cast CD 13 vote to vanish.

19 Q Is there any significance to the relative
20 emptiness of the upper left-hand corner?

21 A One could make a similar argument about no
22 particular pattern causing an undervote to be turned
23 into a valid vote. We see no evidence of that either.

24 Q Now, what is your summary, after having looked
25 through all of this, of your initial findings?

1 A Our initial findings pertain primarily to
2 Sarasota County, and as I alluded to earlier, a little
3 bit of Charlotte County. What we can see, and what I
4 believe is undisputed in this court and constructively
5 everybody I know, that the CD 13 race in Sarasota
6 County was different than the other races in Sarasota
7 County.

8 We saw that when we compared the CD 13 in
9 Sarasota County to the Senate race. We noticed there
10 were differences. I alluded to them.

11 We also know that the CD 13 race was different
12 than other races in CD 13. We saw that because we
13 looked at some of those 45-degree plots, and we noted
14 that CD 13 race plots looked very different than the
15 governor plots and so forth, with one exception, which
16 is the attorney general race in Charlotte County.

17 If fact, there are obvious similarities
18 between the plots that I put up for Sarasota County CD
19 13 and for attorney general in Charlotte County. What
20 this tells us is that any analysis of the CD 13
21 undervote cannot be focused only on Sarasota County or
22 on CD 13 in general.

23 As I mentioned in an earlier question, social
24 science methodology would say, if you want to study a
25 particular race, you have to study things that aren't

1 that particular race; in other words, if you want to
2 understand the CD 13 race, you would have to look
3 beyond it.

4 But that point is emphasized here. No one
5 could look, in my opinion, at these plots and say, we
6 can ignore the attorney general's race in Charlotte
7 County. If anything, when you look at these plots
8 that I've put up, I think the natural conclusion is,
9 there is something generic about Charlotte County in
10 the attorney general's race, and Sarasota in the CD 13
11 race, that makes them look very similar.

12 Clearly what this tells us is that any
13 analysis that looks only at Sarasota or the 13th
14 congressional district will be very incomplete and
15 could easily lead to a misleading result.

16 Q Did you consider voting confusion as one of
17 the causes for the undervote in CD 13?

18 A We did. The -- after observing these sorts of
19 results, a natural question is, what might explain it?
20 As conjectured in newspaper accounts, as I read, there
21 were various theories floating around in the immediate
22 aftermath and the not-so-immediate aftermath of the
23 13th -- of the 2006 election about what exactly caused
24 those undervotes.

25 One of those theories was voter confusion.

1 Now it's difficult to measure exactly when we observe
2 a confused voter. That's especially true with
3 observational data.

4 But we can use some intuitive ideas to try to
5 think about the sort of voters that might have been
6 confused in Sarasota County. So one thing that we do
7 is that in Sarasota County I have here on the plot, on
8 the left-hand side of this figure, a plot for the U.S.
9 Senate race, where each dot in this plot represents a
10 precinct. And the location of the precinct on the X
11 axis represents the fraction of voters at least 76
12 years old in that precinct.

13 The Y axis, or the vertical axis, denotes the
14 U.S. Senate election day undervote rate. What you can
15 see in this figure is a collection of dots. And there
16 are two notable features.

17 One, these dots are all pretty close to zero,
18 which is consistent with what we know, which is that
19 many -- the undervote rates in senate races are low.
20 The second thing we can see is that this line, which
21 is a least squares regression line, is barely sloped
22 up.

23 This means in precincts with many voters --
24 excuse me, in precincts the number of voters age 76
25 years and older is not highly correlated with the

1 senate undervote rate. In contrast, I have over here
2 the exact same plot --

3 Q Professor, before you get there, let me ask
4 you about the data that you've got. The X axis on
5 that first graph, fraction of voters at least 76 years
6 old, where did you get that data from?

7 A We purchased this data from a firm called
8 Polimetrics. Polimetrics gets the data about voter
9 age from what's called the Florida voter file, which
10 describes registration status for all voters in
11 Florida.

12 Q And is the Florida voter file maintained by
13 the Florida Department of State as part of its
14 official records?

15 A Yes.

16 Q And does that list every voter demographically
17 in the state?

18 A Yes, it should.

19 Q And is that the kind of data which social
20 scientists would normally refer to in doing an
21 analysis such as this?

22 A Yes. The literature on undervotes and
23 overvotes is very interested in studying voter
24 demographics, age being one of them and --

25 Q I'm sorry to interrupt you. Please go on and

1 tell us about CD 13.

2 A Fine. If you look at CD 13, we see a very
3 different picture than the U.S. senate race. We see
4 fraction of voters at least 76 years old on the X
5 axis, on the Y axis the CD 13 election day undervote
6 rate. What we notice is in fact points that are
7 large. We know that's true, because in Sarasota
8 County the undervote rate is high.

9 Furthermore, we notice a very steep slope
10 here. What does that mean? That means in precincts
11 with voters at least 76 years old -- excuse me. What
12 this means is that the more voters of at least 76
13 years of age in a precinct, the higher the CD 13
14 undervote rate.

15 Q And that -- can that be an indicator of voter
16 confusion, the activities of two -- the same voter set
17 in two different elections on the same day?

18 A I believe the answer is yes.

19 Q Now, with regard to the way in which the
20 ballot was laid out, just so that we understand, in CD
21 13, how was the U.S. Senate ballot laid out on the
22 iVotronics?

23 A That varies by county.

24 Q But in Sarasota County?

25 A In Sarasota County the first page contained

1 the U.S. Senate race only. The second page contained
2 CD 13, followed by the governor's race. So I will be
3 showing those pictures shortly.

4 Q Thank you. Sorry to interrupt.

5 Were you able to find other instances of what
6 appear to be voter confusion in other races in Florida
7 that could help explain this phenomenon?

8 A Yes. So I would like to draw your attention
9 to the Duval County presidential election in the year
10 2000. In Duval County, in 2000 the presidential race
11 was spread over two ballot pages. This is widely
12 considered to be an example of a confusing ballot
13 format, because ordinarily races appear on one ballot
14 page only.

15 In Duval the opposite happened. There were
16 two -- they have candidate names for the presidential
17 race, ten candidates in that year, were spread over
18 two pages. So you might imagine that this would lead
19 to excessive numbers of overvotes. We call an
20 overvote is a vote for more than one presidential
21 candidate. In Duval County the presidential overvote
22 rate was 7.6 percent.

23 Nobody argues that overvotes are anything but
24 voter confusion. It's impossible to vote for two
25 candidates for the same election.

1 So when we observe overvotes, we naturally
2 think these voters didn't really know what they were
3 doing. So it's not surprising that this overvote rate
4 is large. In some precincts the overvote rate was
5 over 20 percent.

6 Furthermore, of the overvotes, 84 percent of
7 them had a punch on each ballot page. So it's as if
8 the voter thought the first page of ballots was one
9 set of candidates; the second page of names was
10 another set of candidates, and voted for one of each.

11 If you look at this plot here, we see on the X
12 axis, fraction African-American, on the Y axis,
13 overvote fraction. The relationship here is obvious.
14 There is upward sloping relationship, meaning that, as
15 precincts in Duval County had more African-Americans,
16 they had more overvotes.

17 If we believe African-American is correlated
18 with education, socioeconomic status and so forth,
19 it's natural to think this is a voter confusion effect
20 as well.

21 Q This is not to say that the only voters in
22 Duval County who overvoted in that election were
23 African-Americans?

24 A Of course not.

25 Q Okay. Did you then develop any theories that

1 you wanted to test concerning ballot format and how
2 that might have affected the undervoting in CD 13?

3 A Yes, we did. So what we did was, we decided,
4 having looked primarily at Sarasota and Charlotte, and
5 recognizing there are other well-known cases of voter
6 confusion, that there appears to be something to do
7 that the undervote rate in CD 13 and in Charlotte in
8 the attorney general's race seems to have something to
9 do with the way that ballot -- that vote -- that races
10 were presented to voters.

11 So voters using an iVotronic machine are faced
12 with a sequence of pages. These are screens, as was
13 mentioned in court earlier. We call each of these
14 things effectively a screen shot. I will refer to
15 them as pages.

16 One thing we know is that, to the best of our
17 knowledge, county election officials decide the way
18 that races are going to be grouped on ballot screens.
19 What we observe in Sarasota is that the undervote rate
20 was high when the CD 13 race was paired with the
21 governor's race. We don't observe any other high,
22 extremely high, top undervote rate -- top race
23 undervote rates in Charlotte County.

24 In Charlotte County we observe as well that
25 the undervote rate occurs when the attorney general

1 race is paired with the governor's race.

2 So our theory is what we might call a theory
3 of ballot format effects, which is that voters are
4 primed, if you were, by the initial number of races
5 they see on a page.

6 So the theory suggests that, if the initial
7 page in a ballot has one race, that voters will
8 probably expect to see one race on the next page. If
9 it starts with two, they will expect to see two.

10 This theory suggests that confusion should
11 usually occur on the first ballot page that includes
12 multiple races or that somehow violates the
13 consistency already established. We would expect,
14 according to this theory, confusion to be aggravated
15 by certain types of voter demographics, because we
16 expect that certain voters are more vulnerable to
17 being confused.

18 And I wanted to emphasize, our theory applies
19 to top races only. Of course our theory has nothing
20 to do, nothing to say about ballot formats that don't
21 appear inconsistent.

22 Q When you say they're not inconsistent, if they
23 have a single race on every page throughout the
24 ballot, would you expect to see undervoting happening
25 in those circumstances?

1 A We would expect to see undervoting, but not
2 for reasons that we are describing now. Undervoting
3 is a well-known phenomenon. We know it increases as
4 people move down a ballot. There is no reason to
5 think our theory of ballot format effects in any way
6 exhausts the type or the way voters can be confused.
7 In fact, I'm sure it doesn't.

8 Q All right. Now, taking that theory, how did
9 you go about testing the theory that you've just
10 described?

11 A We decided to look at a number of counties
12 across Florida that use iVotronic machines. We
13 decided to study how -- examine whether there was a
14 priming effect by looking at pictures of their screen
15 shots. And then we looked to see whether there were
16 elevated undervote rates in the places that we
17 expected to see them, based on ballot format effects.

18 Q Okay. And what did you find with regard to
19 Sarasota County?

20 A Well let me first step through what Sarasota
21 County looked like. I will do this quickly, because
22 we've seen it. This is the first page of the Sarasota
23 ballot. To the best of our knowledge, this is
24 literally what voters saw, minus that mark, which you
25 saw earlier today.

1 These colors were put in by Sarasota County
2 officials. This is the first page. It says, page 1
3 of 21. This the for the U.S. Senate race. You can
4 see it says, United States Senator. You notice there
5 are one, two, three, four, five -- six candidates,
6 with a write-in position.

7 Sarasota County used iVotronics. It is what's
8 called a text-style county. There are two types of
9 iVotronic formats used, one which is called text
10 style; the other is pixel bit map. I will show you
11 some pictures of those later.

12 The first page in Sarasota County is this.
13 The second page is this, which we've also seen
14 already. Notice, if we expect to see an unusual
15 undervote, it will occur on page 2 --

16 Q Why is that?

17 A Because here we immediately see violation of
18 the consistency established by having one race per
19 page. Immediately we see there are two. That theory
20 doesn't tell us whether we should see undervote rates
21 here or here. But we notice there is an immediate
22 violation of consistency right away.

23 The third -- the third page contains AG, CFO
24 and agriculture races, which you can see right here.
25 So this description shows what's on each page and what

1 style of machine and what style of format, either text
2 style or pixel.

3 MR. HIRSCH: Your Honor, the paper versions of
4 the exhibits I have don't seem to have these last
5 few pages. Can I ask if counsel has additional
6 copies of this, or pages? It goes from 19 to 20,
7 but it's not what's on the screen.

8 MR. CODY: They don't appear to be in any of
9 the copies that we have prepared. I will be happy
10 to supply them to the court later. These are -- I
11 believe those first two pages were pages that were
12 put up during your presentation. So --

13 MR. HIRSCH: The second one was. The first
14 wasn't; the third wasn't. You said you do have an
15 extra copy?

16 MR. CODY: Not here. We will have to have
17 them printed off at the office. These were printed
18 out late last night. Evidently --

19 THE COURT: How many more pages are there?
20 How many pages do you have?

21 MR. CODY: I do not know. I thought that when
22 we printed this out last night, that the packages
23 that were printed had all of the pages that were --

24 THE COURT: No. How many pages are in the
25 packet?

1 MR. THOMAS: Thirty-nine, Your Honor.

2 MR. HIRSCH: The printed versions say we're on
3 19 out of 39. We have another 20 to go. These
4 aren't on there. There must be more than 39 in
5 total.

6 MR. CODY: Well this is on the printout. This
7 is 19 of 39 as well.

8 MR. HIRSCH: Was the one before it also 19 of
9 39?

10 MR. CODY: All right. Please explain.

11 THE WITNESS: The -- I believe that the
12 overlays are dropped out. The way these pictures
13 were generated, this page 3 is overlaid on a
14 previous page. And so I suspect what happens is
15 that the printer only printed out the first page of
16 these ballot pictures --

17 THE COURT: Okay. How long will it take to
18 make those copies?

19 THE WITNESS: It's just these pages.

20 MR. CODY: How many pages are you talking
21 about?

22 MR. THOMAS: Half an hour, Your Honor.

23 MR. HIRSCH: Appears there are about eight
24 missing pages.

25 THE COURT: It's going to move a lot quicker

1 if they have the pages there while your witness is
2 testifying so they can look at those, prepare their
3 cross. How many more witnesses do you have today?

4 MR. CODY: After the professor, we're done.

5 THE COURT: You're done?

6 MR. HIRSCH: Your Honor, if I had a chance to
7 look at the paper ones after he's done, before
8 cross, that would be enough for me. I don't want
9 to interrupt him and the court right now
10 unnecessarily. I do need them before cross,
11 though.

12 THE COURT: I want everybody to be on the same
13 level field.

14 MR. HIRSCH: Can someone be sent out to make
15 those extra sheets? Thank you.

16 MR. CODY: We're going to see that those get
17 printed right now.

18 BY MR. CODY:

19 Q All right. Well, getting back, you were
20 saying that on page 3 of the ballot that was presented
21 to the Sarasota County CD 13 voters, you then had
22 three races shown. Did you look at the layout of the
23 ballot in other counties besides Sarasota County?

24 A We did.

25 Q And what did you find?

1 A In Charlotte County, here is the first page of
2 the Charlotte County ballot. Charlotte County is an
3 iVotronic county. It's text style, which describes
4 the layout.

5 It is -- the top three pages contain, page 1,
6 the Senate race; page 2, the CD 13 race alone; page 3,
7 the governor race, followed by the attorney general's
8 race underneath.

9 Q And what other counties?

10 A The Pasco County ballot is a two-column
11 iVotronic text-style ballot. You observe two columns.
12 It's iVotronic. The layout is senate to the left, CD,
13 in this case, 5, to the right. The second page of the
14 Pasco County ballot is attorney general -- is two
15 columns as well, as you can see.

16 The left column is governor, followed by
17 attorney general. The right column is CFO, followed
18 by agriculture. So I should mention -- and I will
19 come back to this when I talk about results -- there
20 is some evidence of violating consistency, because on
21 page 1 we have one column per race; page 2 we have
22 two, and then three columns per race.

23 Another county is Nassau. And Nassau, we have
24 an iVotronic county, but this, as you can tell from
25 the format, obviously looks very different than the

1 sort of pictures we've seen before. This is called
2 the pixel style or bit-map style of iVotronic display.
3 Nassau County is an example of a two-column bit map.
4 It doesn't have to be two-column. This one is.

5 The left column has senator -- excuse me,
6 senate to the left, followed by congressional
7 district, followed by on the right, governor, attorney
8 general, CFO. Page 2 contains commissioner of
9 agriculture, followed by a lot of other races.

10 Our theory would predict that we see no
11 unusual undervote patterns in Nassau County, because
12 there are no violations of priming based on the
13 transition between pages 1 and page 2. You can see
14 here that there are many, many possible candidate
15 buttons. There are seven here, seven here, three,
16 three, and two.

17 There has been some conjecture when you put
18 many buttons on a screen, you get lots of overvotes.
19 Nassau County enables us to see if that irregularity
20 always holds.

21 Another county we have is Miami-Dade.
22 Miami-Dade is particularly important for us.
23 Miami-Dade is iVotronic. It is pixel style. And
24 there is something interesting about Miami-Dade, which
25 is that some precincts in Miami-Dade had a

1 congressional district race, and some did not.

2 So I will show you two versions of Miami-Dade,
3 one version without U.S. House race. The first page
4 contains senate only; the second page contains
5 governor, attorney general, CFO.

6 So according to our theory, this should be
7 confusing, because we go from one race to three races.
8 In contrast, Miami-Dade with U.S. House, which is a
9 set of precincts in Miami-Dade County, there is a
10 congressional district race. Here is an example of a
11 congressional district race.

12 So you see that page 1 contains senate and
13 house; page 2 is the same as we saw before. So our
14 theory says, we should see less confusion now. So
15 this is a very nice test of our theory, because we
16 have a single county. Some voters had one page to
17 start, and then -- had one ballot per page -- had one
18 race per page to start and then were immediately
19 transitioned to three.

20 Some voters saw two to start and one to three.
21 We expect more confusion on the former.

22 Q Now, in Miami-Dade County are all of the --
23 all of these taking place on iVotronic machines?

24 A Yes.

25 Q And are they all administered by the same

1 supervisor of elections offices?

2 A Yes.

3 Q All using the same firmware for the iVotronics
4 in each of these instances?

5 A To the best of my knowledge, yes.

6 Q Okay. All right. Now, with regard to the top
7 ballot races, did you -- were you able to calculate
8 any kind of relationship between the undervotes and
9 the effect of age and the effect of having one
10 undervote had -- with undervotes in other parts of the
11 ballot?

12 A Yes.

13 Q Okay. Could you explain what the slide you
14 put up entitled "Sarasota Top Ballot Races" means?

15 A Yes. I would like to summarize our results
16 from Sarasota County with these figures. I will have
17 a number of figures like this for different counties,
18 and I will discuss the ballot format effects as we see
19 them.

20 In this -- notice we have what are called the
21 top ballot races; senate, CD 13, governor, AG, CFO,
22 agriculture. We have various features of the
23 different races in Sarasota County. One is total
24 number of election day and early undervotes, which you
25 can see is 17,825.

1 This column describes number of undervotes.
2 It is obvious that 17,825 is much larger than any of
3 these other numbers.

4 In addition, this figure -- or this table
5 describes what we call an undervote age slope, which
6 is a slope estimate from a regression at the precinct
7 level of undervote rate on number of voters or
8 fraction of voters that are at least 76 years of age.

9 So when this number is large, that means that
10 precincts with more elderly voters have more
11 undervotes. When this number is zero, it means that
12 there is no such relationship. And when it is small,
13 it means that there is a small relationship between
14 number of elderly voters in a precinct and undervote
15 rate.

16 In addition, these numbers are either black,
17 as these are, when they are statistically significant
18 at conventional competence levels, and they are grayed
19 out otherwise. What you can see here is this slope is
20 .21. The appropriate comparison is between .21 and
21 all these other numbers, which are less than one over
22 twenty, .05.

23 This means that a 10-percent increase in
24 number of elderly voters leads to a 5-percent increase
25 in undervote rates.

1 What we see here is that the important
2 comparison is not in the magnitude of these numbers,
3 because we always expect voter confusion to be at work
4 in all elections. What's important is that .21 is
5 much larger in all of these other races.

6 So that means the age effect is much larger in
7 CD 13, which we believe to be the confusing race, than
8 it is in any other race. The other rows on this table
9 describe the number of undervotes based on
10 participation in a particular race.

11 So one thing we can see, for instance, is
12 that, among these 119,898 votes, there were 28
13 county-wide contests. Of the senate -- in the senate
14 race, each voter either undervoted or voted.

15 If the person undervoted, on average this
16 person cast 10.8 undervotes on the remaining set of
17 contests.

18 Q So if they undervoted the senate race, on
19 average, they undervoted in 10.8 other races?

20 A That's correct. That's consistent with what
21 we showed before, which is, if you skip senate, you
22 probably skip a lot of other things too.

23 In contrast, people who vote in the senate
24 race have 2.8 undervotes per race down below. So
25 people who vote in the senate tend to vote in other

1 races.

2 If we look at the CD race, we don't see that;
3 we see people who undervote in the CD race tended to
4 vote in many other races; in other words, 4.7 is a lot
5 smaller than 10.8. Similarly, in the governor's race
6 we observed that, if you skip the governor's race, you
7 skip approximately 10 races down below; you skip the
8 attorney general race. The point is, 4.7 is small.
9 All these other numbers are large. Okay?

10 In our opinion this points to ballot format
11 effects surrounding the CD 13 race.

12 Q Now, did you examine this in other counties to
13 see if this effect also shows up?

14 A Yes.

15 Q And what were the results of that examination?

16 A In Charlotte County we observe a senate top
17 race -- I will drop the CD race here, because in CD --
18 CD races vary. And as we know, Charlotte included two
19 of them.

20 So when I talk about top races, I mean senate,
21 governor and so forth. What you observe is a very
22 large attorney general effect. We see that 11,377
23 election day and early day voters in Charlotte County
24 skipped the attorney general's race; these other
25 numbers, quite smaller.

1 We see that if you skip the attorney general's
2 race, the odds are you're not going to skip a lot of
3 other races. That's not consistent with the notion
4 that people skip the attorney general's race, just
5 undervoting in general. You can see that people that
6 voted in the attorney general's race voted in most
7 other races. The attorney general's race is anomalous
8 compared to senate, governor, CFO, and agriculture.

9 Q What other counties did you look at?

10 A Another county we looked at is Collier. I
11 didn't put up a slide for Collier. But I would like
12 to describe the ballot format in Collier County.
13 Collier County's ballot format was just like Martin's.

14 We do not have Martin ballot images, which is
15 why I'm talking about Collier only. In Collier
16 County, the first page was the senate race. The
17 second page was the CD race. The third page was the
18 governor's race, and the fourth page was AG, CFO and
19 agriculture.

20 So if you expect to see any confusion effects,
21 you would expect to see jumps in agriculture -- excuse
22 me -- in agriculture -- excuse me -- attorney general,
23 which is precisely what we see. Furthermore, we
24 observe that if you skip the CFO race, you are very
25 likely to skip the agriculture race as well.

1 Okay. Why is that useful? Because if you
2 remember, the first opportunity in Collier County to
3 be confused would be to hit the race that has AG, CFO,
4 and agriculture, which means your first opportunity to
5 cast a confusion-induced undervote would probably be
6 at CFO.

7 If that theory is true, then people who skip
8 CFO should also skip agriculture. In fact, 85 percent
9 of the CFO undervoters also did that, which is very
10 nice.

11 You can see that, among the people who skip
12 attorney general, not as many people skip -- not as
13 many people skip CFO, which is consistent with the
14 notion that confusion caused -- the confusion occurred
15 in between attorney general and CFO. And once you
16 were confused at CFO levels, you were probably
17 confused for the remainder of that page too.

18 Q And other counties?

19 A In Lake County, Lake County I did not display
20 a picture of that either. So I will visually describe
21 that ballot. Lake County is a two-column -- I did
22 Pasco, excuse me. Lake County, like Pasco, is a
23 two-column county. But Lake County is a different
24 format than Pasco in the following sense.

25 In Lake County, the first page is senate, next

1 to congressional district, each in one column. The
2 second page has one column with governor, followed by
3 another column with AG, CFO and agriculture.

4 What you see there, we should expect to see
5 very little confusion on this ballot format, which is
6 in fact exactly what we see. If we look at the age
7 correlations, none of them is extremely different,
8 nothing like what we saw in attorney general's cases.

9 If you look at these undervote numbers, you
10 can see that none of them is particularly anomalous.
11 Telling me that a voter skipped a particular race in
12 Lake County doesn't tell me anything about how the
13 person behaved in other races. This is consistent
14 with our theory of ballot format effects.

15 Another county that is important to us is Lee.
16 So Lee is just like Charlotte and, in fact, just like
17 Sumter. So if you look at Lee County, you will notice
18 an enormous undervote in the attorney general's race.
19 So the Lee County ballot looked just like the
20 Charlotte County ballot, which is to say the first
21 race was senate. The second page contained CD only.
22 And the third page had attorney general paired with
23 governor.

24 What do we observe? Enormous undervote in the
25 attorney general's race. We also observed extremely

1 large slope estimate between undervote and age,
2 meaning that in Lee County, it appears the confusion
3 effect is correlated with age of voters. And it's
4 exactly what we would expect, given the format of the
5 Lee County ballot.

6 Q Now, was the format of the Lee County ballot
7 similar to the format of the ballot from Charlotte
8 County?

9 A It was, for the top races, identical.
10 Miami-Dade is a county that is extremely important,
11 because of the point I mentioned before, which is that
12 some races in Miami-Dade -- excuse me -- some voters
13 in Miami-Dade faced a congressional race, and some did
14 not.

15 So if our theory of priming is correct, then
16 whether you saw a congressional race should affect
17 down the ticket undervote rates. So I will explain
18 this very carefully, because the logic is slightly
19 subtle in some places.

20 I will first talk about Miami-Dade with no
21 house races. This should be, if anything, the more
22 confusing format in Miami-Dade. The first page in
23 this pixel-based ballot was Senate only; the second
24 page was governor, AG, CFO.

25 So if our theory is right, we should see a

1 jump at the attorney general race. In fact, that's
2 what we see. We should also see possibly continuing
3 confusion in the CFO race. That's what we see.

4 Observe as well, that if you skip the attorney
5 general's race, 89 percent of those people also --
6 excuse me -- if you skip the attorney general's race,
7 89 percent of those people also skipped the CFO race.
8 That's consistent with people being confused at the
9 first possible opportunity to be confused and then
10 being confused on the entire page.

11 That's a very notable finding here, and I will
12 discuss that, and that 89 percent figure changes once
13 you put in a U.S. House race. The other important
14 figure to note is that of the -- of the AG
15 undervoters, only 22 percent of them undervoted in the
16 agriculture race.

17 The agriculture race was on the first page of
18 the next screen. Why is that important? That's
19 important because, if the people skipping these races
20 were consistent undervoters, then this number should
21 be large, certainly larger than 22 percent I would
22 argue.

23 So what we see -- and Miami-Dade with no U.S.
24 House, is that if you skip AG, you probably skip CFO
25 as well. And if you undervoted in AG, there is not a

1 strong likelihood you would undervote in agriculture.
2 Remember, agriculture is the beginning of the next
3 page.

4 So I'm now going to show you the results that
5 put on the U.S. House race. This is akin to a
6 treatment. Some voters had a U.S. House race; some
7 did not. In particular, I want to draw attention to
8 these two numbers here, 89 percent, 22 percent.

9 What you see in Miami-Dade is that, once you
10 put in the U.S. House race, that the confusion effect
11 goes down. What we consider the confusion effect goes
12 down. How can we see that? The main way we can see
13 that is that, when we compare 73 percent to the
14 earlier figure of 89 percent, the number is lower.
15 What does that mean?

16 That means if you skipped -- if you undervoted
17 on AG, you are less likely to undervote on CFO if you
18 saw a house race first. You might think that's sort
19 of irrelevant. Why should it matter what house race
20 you saw whether you undervote or not on CFO?

21 Q Professor, let me ask you, on this ballot,
22 where would the house race have shown up if there was
23 one?

24 A The house race would be right after the senate
25 race.

1 Q On the same page?

2 A On the same page. So these voters had less
3 priming. They started with two races per page; they
4 then changed to three. So you notice there is less
5 correlation between undervoting on the second page,
6 depending on whether there was a race on the first
7 page.

8 That's what our theory would predict.
9 Furthermore, if you looked at correlation between page
10 2 and page 3, that varies as a function of whether
11 page 1 had a congressional race. Why does that make
12 sense?

13 If page 1 had a congressional race, then you
14 expect that the people who skipped the AG race are
15 just undervoters in general. That's what we find. If
16 you undervoted in AG after you saw congressional race,
17 you almost certainly -- it's probably .52 that you
18 undervoted in agriculture as well.

19 That's consistent with ballot format effects,
20 that the people who weren't exposed to as much
21 priming, when they skip attorney general, that means
22 they're undervoting a lot. When you are exposed --
23 with you are exposed to priming effects, skipping
24 attorney general might mean you're confused. That
25 explains your behavior.

1 Q What else did you find in terms of other
2 counties?

3 A In Nassau County, which you will remember was
4 a two-column pixel format, we observed nothing, which
5 is in fact exactly what our theory suggests we should
6 observe. If you remember, Nassau County had the pixel
7 version. It was two columns. The first page had
8 everything up to agriculture. The second page,
9 agriculture plus many other races.

10 So what sort of inconsistency was there in
11 Nassau? None. That doesn't mean there was no voter
12 confusion.

13 As I mentioned before, our theory doesn't say
14 we have an exclusive understanding of voter confusion.
15 I'm sure there are many sources of voter confusion.

16 Q I'm sorry. But the undervote age slope
17 numbers are similar in range, and the average
18 undervote -- excuse me -- average total undervote
19 numbers seem to be consistent in range; is that your
20 observation?

21 MR. HIRSCH: Objection, leading.

22 THE COURT: No leading.

23 BY MR. CODY:

24 Q Are the numbers shown on undervote, dash, age
25 slope and under that the undervoters and voters, are

1 those numbers within a consistent range?

2 A Yes. When I said we see nothing, what I mean
3 are things like these correlations, relatively
4 similar; these numbers, relatively similar. Again,
5 it's not surprising that we have correlations here.
6 It's not surprising they vary at all.

7 We know that -- we have a reasonable idea, I
8 should say, that older voters will in general be
9 confused on various things. So that's why zeros. But
10 if you notice, there is nothing like the attorney
11 general's effect we saw in Charlotte. There is
12 nothing like the disparities we see in Miami-Dade.

13 So our theory predicts we should see no
14 format-induced undervote in Nassau. That appears to
15 be what we found.

16 Q What about in Pasco County?

17 A In Pasco County, it is questionable how
18 exactly our theory applies.

19 Q In Pasco what kind of ballot format did they
20 use?

21 A So recall in Pasco County it was a two-column
22 format. But notice as well in Pasco, there was a
23 point I alluded to earlier, which is that both columns
24 on page 1 had one vote. Both columns on page 2 had
25 two votes. And in fact the second column had three.

1 So I don't want to push too hard on what our
2 theory would apply about Pasco, because the truth is,
3 we don't have counties close enough to Pasco to draw
4 very strong conclusions. I nonetheless think there is
5 some evidence of format-induced undervotes in Pasco.

6 If there should be undervotes anywhere, it
7 should be on the thing that breaks consistency, which
8 would be the second vote in the columns. The second
9 vote, if you recall, is senate and governor started --
10 excuse me -- senate and CD started. Senate column
11 one, CD column two. Governor, top column one;
12 attorney general, bottom race in column one.

13 Would we expect to see a larger undervote in
14 attorney general? Perhaps, if you believe that
15 priming is one race per column changing to two.
16 Similarly, we observe a jump for agriculture as well.

17 Why would that make sense? Agriculture is the
18 second in the top race in the column. This is
19 consistent that voters are primed by some format,
20 although clearly in Pasco, it's more difficult to
21 generalize.

22 Q Beyond Pasco, you mentioned that Sumter County
23 is a county where you observed an effect similar to
24 Charlotte. Did you do an analysis there?

25 A Yes, we did.

1 Q And what did you find?

2 A What we find is an enormous undervote effect
3 in Sumter in the attorney general's race as well.
4 What we see here is 6,560 undervotes for attorney
5 general out of approximately 20,000 votes. We
6 observe, when you compare attorney general to the
7 other races, it's unusual.

8 We observe a very, very large slope
9 coefficient on elderly voters, "elderly" defined as
10 greater or equal to 76 years. Notice as well in
11 Sumter, the only place that age is correlated with any
12 of the undervote rates is the attorney general race.
13 It is not correlated with the other ones.

14 Sometimes that pattern holds; sometimes it
15 doesn't. In this case it holds nicely. And we notice
16 that in Sumter, we would expect Sumter, along with
17 Charlotte and Lee, to be the worst examples of
18 priming, because there was priming two -- for two
19 pages in a row.

20 We see, in fact, enormous effects in attorney
21 general in those three counties. You also can see the
22 standard effects here. If you skip attorney general
23 in Sumter, you probably don't skip a lot of other
24 races.

25 Why does that make sense? That would suggest

1 that the people who skipped attorney general didn't
2 really mean to skip attorney general, that there was
3 some other process at work. They voted heavily in
4 other races.

5 In contrast, if you undervote on senate, you
6 undervote many, many other races. This, again, is
7 very consistent with the story -- the theory of ballot
8 format effects that we presented.

9 Q Now, can you just remind the court of how the
10 Sumter ballot was laid out with regard to the
11 placement of the attorney general race?

12 A Yes. The Sumter ballot was the same as the
13 Charlotte ballot, which was the same as the Lee County
14 ballot. When I say "same," I mean with respect to the
15 top races only.

16 The first page of the Sumter ballot was the
17 senate race only. The second page was a congressional
18 race only. The third page had governor on top,
19 attorney general below.

20 So the biggest format effects we believe we
21 would expect to see would be in Charlotte, Lee and
22 Sumter. That's because it's in some sense reinforced
23 priming. When I mentioned before that voters are
24 primed, it's natural to say, well, are they primed
25 differently if they see two one-page ballots first or

1 if they see one one-page ballot first?

2 What we would imagine is, the more one-page
3 screens you see, the more primed you are. In fact
4 that's what this shows.

5 Q And beyond Sumter, did you look at any other
6 counties?

7 A We looked at Jackson County. Jackson County
8 is interesting in the way that Miami-Dade is. In
9 Jackson County, voters on election day and early
10 voting could use both iVotronic and optical scan
11 machines. So the way it works, to the best of my
12 knowledge, is that in Jackson's 25 precincts, voters
13 were given a choice; you may use iVotronic, or you may
14 use optical scan.

15 The Jackson iVotronic was bit map style. The
16 first race contained senate only. The second
17 contained attorney general -- excuse me, governor,
18 attorney general, and CFO. There was no congressional
19 race.

20 And furthermore, the third page contained
21 agriculture. And I should mention that, according to
22 what Jackson County officials have told me, that there
23 was one iVotronic per precinct. What this means is
24 that, when a voter came to a Jackson County precinct,
25 he or she would have the opportunity to use an

1 iVotronic or to use an optical scan.

2 If we would imagine that if there were a voter
3 that were intimidated by electronic voting in some
4 fashion, that this individual would almost certainly
5 choose optical scan voting. We don't know that for
6 sure, but that seems relatively intuitive, that if you
7 were given a choice, you would pick the one which
8 you're most comfortable.

9 We also know that, given there was one of
10 these and multiple optical scanner machines, that we
11 wouldn't expect to see as many iVotronic votes. One
12 thing we can do is compare the undervote rates in
13 Jackson County for people who used iVotronic machines
14 and people who used optical scan voting. Just like in
15 Miami-Dade, we have a treatment.

16 Some voters were exposed to iVotronics; some
17 were not. Then we can look to see whether or not the
18 undervote rates vary by those types of machines in a
19 way consistent with our ballot format theory.

20 Q What did you find?

21 A What we find is a sequence of 45-degree plots,
22 so much of those with which I started. Each dot
23 represents a precinct. I have put ellipses around
24 these dots to indicate sampling variance, because
25 Jackson County is relatively small; other counties are

1 not, relatively speaking. You can see, to make this
2 clear, would have 8,000 approximately optical scan
3 ballots, 1500 approximate touch screen ballots.

4 What we can see in the senate race is that
5 these points are clustered around the 45-degree line.
6 What that means is that, on election day the
7 undervoting rate was approximately the same for touch
8 screen voters and optical scan voters in the U.S.
9 Senate race.

10 So my earlier pictures compared election day
11 and early, when we had this format. Now I'm comparing
12 touch screen election day, optical scan election day.
13 That's what we find in the senate race.

14 In the governor's race, which was the first
15 race on the next page, we see same thing, nothing
16 notable at all. On the third page we see different
17 results.

18 So recall, our ballot format theory would
19 predict that where you would start to see confusion
20 effects would be at the AG and CFO races. That's
21 exactly what we see.

22 Now, you will notice that some of these
23 ellipses are large; again, illustrating the fact that
24 we have smaller precincts. But nonetheless,
25 particularly at the AG race, you can see that most of

1 these ellipses lie completely above this line.

2 What does that mean? That means we see
3 elevated touch screen undervote rates among -- excuse
4 me -- we see elevated undervote rates among touch
5 screen voters only. I should emphasize this is the
6 same county, same set of election administration for
7 all voters, yet we see a confusion effect, what we
8 believe is a confusion effect, in the attorney
9 general's race; we see it for the CFO race.

10 And then when we turn to the agriculture race,
11 which was on the next page, it goes away.

12 Q And so the AG and the CFO race were together
13 on the same page of the iVotronic?

14 A The first page contained U.S. Senate race
15 only. The second page contained governor, attorney
16 general, CFO; third, agriculture. Which means our
17 theory says, if there is confusion, it will be AG and
18 CFO. And that's what we see.

19 Q Okay. Now, did that conclude your examination
20 of the data that you felt necessary in order to come
21 to a conclusion?

22 A Yes. And we have done many other analyses as
23 well.

24 Q Okay. And what were those analyses?

25 A We've conducted many regression analyses that

1 look at a variety of features of these -- of the
2 precincts. And we find a result that's completely
3 consistent with everything I've showed you here, which
4 is primarily I'm just counting.

5 Q Now, are you done with the screens?

6 A Yes, I am.

7 Q Okay. Would you have a seat?

8 THE WITNESS: Your Honor, may I return?

9 THE COURT: Uh-huh.

10 BY MR. CODY:

11 Q Professor, in light of all the analysis that
12 you've done, have you come to a conclusion, within a
13 reasonable degree of certainty in the social sciences,
14 as to the underlying cause of the -- well, before I
15 get there let me ask you: What was the relative
16 undervote rate in CD 13 in Sarasota County?

17 A I'm --

18 Q What was the undervote rate in --

19 A Well it was approximately 14 percent among
20 election day and early voters.

21 Q And what was the undervote rate in the
22 attorney general races in those three counties that
23 you talked about, in Charlotte, in Sumter, and in Lee?

24 A I don't remember the exact numbers off the top
25 of my head. It's approximately between 2 and 5

1 percent, I believe.

2 Q Okay. In what counties did it show -- the
3 attorney general races show very, very high undervote
4 rates?

5 A Only in three counties; Charlotte, Lee and
6 Sumter.

7 Q Okay. And what was the rate in those
8 counties?

9 A Twenty-five percent among election day and
10 early day voters in Charlotte County. Lee was 21
11 percent. Sumter was 24 percent.

12 Q And was that higher than the undervote rate in
13 CD 13 in Sarasota?

14 A Much higher.

15 Q Now, have you -- based upon the analysis that
16 you've done, the data that you looked at, have you
17 come to a conclusion, within a relative degree of
18 certainty acceptable within the social sciences, as to
19 what caused the undervote in CD 13 in Sarasota County?

20 A Yes, I have.

21 Q And tell me what that conclusion is.

22 A In my judgment, all the evidence that we have
23 seen points to ballot formats. And what I mean "all
24 the evidence," what I mean is a combination of
25 precinct level data and ballot level data. County

1 level data is there too, but that's not particularly
2 useful once you have precinct level data.

3 The evidence that I find most compelling at
4 the precinct level and at the ballot explains, in our
5 opinion, in my opinion, the CD 13 undervote rate in
6 Sarasota County, because in fact that rate was
7 isolated, and because we know the ballot format
8 differed for that race only in Sarasota County.

9 When we look at Charlotte, Lee and Sumter
10 counties, we observe very striking undervote rates.
11 We observed very different ballot formats for those
12 particular races.

13 We observed furthermore, we observe in
14 Miami-Dade County a moderating effect of what we think
15 is a ballot format effect. So in particular, we have
16 two types of counties; we have counties that have what
17 appear to be extremely confusing formats, like
18 Sarasota, Lee, and Sumter, and Charlotte. And we have
19 counties that have formats that are -- appear to be
20 moderately confusing.

21 This is a very important point, because if our
22 theory is right, when you have moderately confusing
23 formats, you should see moderated undervote rates. We
24 wouldn't expect to see undervote rates jumping around
25 in Miami-Dade the way we did in Charlotte County. And

1 we don't.

2 In Miami-Dade, what we have, the presence of a
3 congressional race on the first page affecting the
4 correlation between undervote rates on the second and
5 third page, and the only evidence I have seen to
6 explain this is ballot format effects.

7 Q Okay. Now, one of the things that Professor
8 Wallach talked about when he was on the stand was that
9 there may be an effect, given the number of either
10 candidate names or checkboxes that a voter would be
11 presented with would somehow be tied into the number
12 of undervotes or the amount of undervoting. In the
13 analysis you did, did you see any connection between
14 those two things?

15 A We did not. The most natural place that we
16 thought to look was Nassau County, which, as I
17 mentioned, had something like 20 voters on the first
18 page. And we see no observable effects in Nassau
19 County.

20 Q Now, you were here while Professor Wallach was
21 on the stand; correct?

22 A That is correct.

23 Q And you heard his testimony?

24 A Yes, I did.

25 Q And did you hear him describe the kind of

1 analysis that would need to be done in order to test a
2 voter confusion theory?

3 A Yes, I did.

4 Q And did you in fact follow that kind of
5 analysis which Dr. Wallach suggested in coming to the
6 conclusion that you just gave us?

7 A I believe that is exactly what we did.

8 Q Okay. And --

9 MR. CODY: Excuse me. Your Honor, I have
10 nothing further.

11 MR. DeGRANDY: Your Honor, we can make a phone
12 call. I had Professor Lewis, as well as our
13 paralegal, head out as soon as this problem was
14 discovered. I assume they should be back shortly.
15 If you like, we can make a phone call.

16 THE COURT: We're going to break now. I can
17 give you until 3:00 today. That's the best I can
18 do, folks. But we will start back at 1:30. And if
19 we don't get through, then we just have to come
20 back another day.

21 MR. DeGRANDY: Yes, sir.

22 THE COURT: Okay?

23 (Lunch recess).

24 CROSS EXAMINATION

25 BY MR. HIRSCH:

1 Q Professor Herron, my name is Sam Hirsch. I
2 represent Plaintiff Jennings. Professor, you were
3 retained by counsel for Election Systems & Software on
4 Wednesday, December 6; is that right?

5 A Exact date is specified in my declaration.
6 That sounds right.

7 Q By then you had already put out on the web the
8 initial draft of your paper on the Sarasota undervote?

9 A It's a draft, yes.

10 Q And the date of the initial draft was November
11 23rd, Thanksgiving Day; is that right?

12 A That's correct.

13 Q And then you had a longer, revised version of
14 the paper on Sunday, December 3rd?

15 A That's right.

16 Q And then after that you were retained?

17 A That's correct.

18 Q In both drafts of that paper you stated that
19 the undervote rate in Sarasota County in the 13th
20 congressional district rate was extraordinarily high;
21 correct?

22 A Are you requesting me to quote directly?

23 Q If it is a quote. If you would like, I can
24 refresh your recollection by showing you one.

25 A I would like to make sure we're looking at the

1 same draft of the paper.

2 Q Absolutely.

3 MR. HIRSCH: May I approach, Your Honor?

4 THE COURT: Uh-huh.

5 MR. HIRSCH: We don't intend to offer this
6 into evidence, but would you like a copy?

7 THE COURT: Sure.

8 BY MR. HIRSCH:

9 Q On page 2, do you say that the rate of
10 undervote in Sarasota County in the congressional race
11 was extraordinarily high, about halfway down the page?

12 A Yes.

13 Q Did you estimate that if the voting machines
14 in Sarasota County had performed like machines
15 elsewhere, that there would have been about 14 to
16 15,000 fewer undervotes?

17 MR. CODY: Objection, Your Honor. This is
18 beyond the scope of -- I beg your pardon.

19 THE WITNESS: Could you repeat the question,
20 please?

21 BY MR. HIRSCH:

22 Q Did you estimate that if the voting machines
23 in Sarasota County had performed like the machines
24 elsewhere, there would have been 14 to 15,000 fewer
25 undervotes in the congressional race?

1 A What we --

2 Q That is a yes or no question, sir.

3 A Would you define "elsewhere"?

4 Q Did you -- let me turn your attention to page
5 46. Do you seen the line there saying, "estimated
6 pickup"?

7 A Yes.

8 Q And do you estimate the pickup in terms of
9 undervotes to be minus 14,813?

10 A If that's the difference between the observed
11 and the estimated, that would be correct.

12 Q That's the number you wrote there; is it not,
13 14,813?

14 A Oh, yes. Yes. Correct.

15 Q And that means that Jennings and Buchanan
16 together would have picked up somewhere between 14 and
17 15,000 votes; correct?

18 A This table is based on assuming that Sarasota
19 voters voted using the layout observed in Charlotte
20 County.

21 Q And under that assumption there would have
22 been 14 to 15,000 more votes for Jennings and Buchanan
23 combined; correct?

24 A That is our estimate, correct.

25 Q You referred to these 14,000-plus votes as

1 suppressed votes throughout your paper; correct?

2 A Throughout the paper? I'm not sure if that's
3 true.

4 Q Anywhere in your paper?

5 A Yes.

6 Q And in your paper you said that if District 13
7 election day voters were driven away from
8 participating in their congressional race by a blitz
9 of last-minute negativity, this should have affected
10 all four counties in the District 13 race and not just
11 Sarasota; correct?

12 A Yes. I believe that to be true.

13 Q You say, it's hard to imagine the Sarasota
14 result reflects deliberate voter choices; correct?

15 A In the sense of deliberate motivated by
16 negativity, yes.

17 Q If the Sarasota County voters, deliberate
18 voter choices, had been accurately reflected in the
19 final vote count, would Christine Jennings probably
20 have defeated Buchanan?

21 MR. BURHANS: Objection, Your Honor.

22 MR. CODY: This goes beyond the scope of what
23 was discussed on direct. We did not get into
24 trying to project who won or did not win the
25 election, merely the issue of whether the ballot

1 format layout led to the undervotes, not what, had
2 those undervotes not occurred, what the result of
3 the election might have been.

4 MR. HIRSCH: Your Honor, he testified on
5 direct that he was involved in studying this case
6 long before he was retained. He published a paper
7 on the Internet about it. And he said it was of
8 ongoing academic interest to him and developed all
9 sorts of opinions.

10 He concluded his direct, the standing part, by
11 saying he had done all sorts of other studies. I'm
12 asking about some of those other studies which
13 showed that he himself believes Jennings would have
14 won the race.

15 THE COURT: The primary issue I believe in
16 this entire case is machine malfunction I've got to
17 determine. Now couch it in those terms, I will
18 allow it. Otherwise you are beyond the scope of
19 direct.

20 BY MR. HIRSCH:

21 Q If the suppressed vote was due to machine
22 malfunction, assume that as your hypothesis, do you
23 believe Christine Jennings would have beaten Vern
24 Buchanan in this race?

25 MR. BURHANS: Objection, Your Honor. This is

1 beyond the scope of direct, and frankly this is not
2 a deposition discovery. If they wanted to get into
3 this, they can do it in the regular course of
4 discovery, not in the hearing where the sole
5 purpose is to determine reasonable necessity.

6 THE COURT: I've already ruled on that. I'm
7 allowing the question. Let's move forward.

8 THE WITNESS: Could you please restate the
9 question?

10 MR. HIRSCH: Could you read the question back
11 to the witness, please.

12 (Pending question read).

13 A So you're asking me to assume something that I
14 don't believe?

15 BY MR. HIRSCH:

16 Q Yes. It's a hypothetical question, the type
17 we ask experts all the time.

18 A So let me make sure I understand this
19 question. If the undervote observed in Sarasota
20 County in the CD 13 race were due to machine
21 malfunction, what would have happened? Is that what
22 you're asking me?

23 Q What would have happened if the machines had
24 not malfunctioned under that assumption?

25 A The only way I can answer that is by saying,

1 if the Sarasota voters had voted using the Charlotte
2 County format, then the estimates are as you
3 described.

4 Q When you say "as you described," you mean
5 what?

6 A The number you read to me was 1 -- excuse me,
7 14,813?

8 Q My question was who would have won.

9 A Who would have won in a legal sense, or who
10 would have won by having more votes?

11 Q The latter.

12 A Our estimates are that, if Sarasota voters had
13 voted using the format used in Charlotte County, that
14 Jennings would have won.

15 Q Turning --

16 MR. BURHANS: Objection, Your Honor. I would
17 like to move to strike that line of testimony.
18 That was based upon the assumption that they're
19 using a different ballot format. That's not the
20 basis of the plaintiff's machine malfunction
21 theory. This is really getting far beyond --

22 THE COURT: You don't have a jury to confuse,
23 counsel, just me. Let's move on. Time is running.

24 BY MR. HIRSCH:

25 Q Let's turn to your presentation today.

1 MR. HIRSCH: Can we have someone put up the
2 visuals? We will go ahead while it's being set up.
3 Do you have a hard copy?

4 THE WITNESS: I do, sir.

5 MR. HIRSCH: And, Your Honor, do you have your
6 hard copy?

7 THE COURT: Uh-huh. I say I do. I don't know
8 if I do or not. No, I don't.

9 MR. HIRSCH: May I approach?

10 THE COURT: I have what was given to me this
11 morning.

12 MR. HIRSCH: We now have the full copy that
13 has the missing pages.

14 BY MR. HIRSCH:

15 Q Turning to page 6, along the bottom there, the
16 X axis, you have absentee undervote rate; correct?

17 A I want to ensure we're looking at the same
18 page. Is this --?

19 Q My page 6 says, undervoting in CD 13, U.S.
20 Senate race. At the bottom right-hand corner, 6 out
21 of 39.

22 A I'm with you.

23 Q When I give you page numbers, look at the
24 bottom right-hand corner. On the X axis you have
25 absentee undervote rate; correct?

1 A Correct.

2 Q And on the Y axis, coming up the left side of
3 the page, you have election day undervote rate?

4 A Correct.

5 Q And you did not present the equivalent graphs
6 for the early voting electronic votes; did you?

7 A No, I did not.

8 Q And you do know that the undervote rate in
9 Sarasota County was highest among the early voting
10 electronic ballots, higher than among the election day
11 electronic ballots; don't you?

12 A Yes.

13 Q Let me turn to pages -- page 10, please. Am I
14 correct in understanding that every horizontal line
15 there represents a unique category of voters based on
16 how they voted for each of these offices and ballot
17 measures?

18 A It is what I call the profile. That's my
19 category.

20 Q So each line is distinct and represents a
21 particular combination of votes for various offices
22 and ballot measures; right?

23 A I believe your understanding is correct.

24 Q Can you tell me, what is the difference
25 between the first row and the third row?

1 A Undoubtedly, some very subtle shading or a
2 typo.

3 Q And what is the difference between the fourth
4 row and the fifth row?

5 A I would say the latter, judging by the
6 resolution of this page.

7 Q What do you mean the latter?

8 A What I said before.

9 Q A typo?

10 A Or subtle shading.

11 Q What do you mean by "subtle shading"? They're
12 either blue or red or brown or light brown or green;
13 right?

14 A That is correct.

15 Q What is the difference between the 18th and
16 19th rows?

17 A Just a second (examining document).

18 MR. HIRSCH: Your Honor, this exhibit will be
19 in evidence. There is no difference at all. I
20 don't want to take forever.

21 THE WITNESS: I believe that's correct.

22 THE COURT: I saw that.

23 MR. HIRSCH: May I represent to the court the
24 same thing can be found between the 20th and 21st
25 rows; on the next page, between the second and

1 third; on the next page, between the fourth and
2 fifth, 11th and 12th, 18th and 19th, and save the
3 court some trouble and time to have the witness
4 count through these? The exhibits will speak for
5 themselves.

6 THE COURT: Uh-huh.

7 MR. HIRSCH: They purport to represent unique
8 combinations, and they do not. So with your
9 indulgence, I would like to move forward.

10 THE COURT: Okay.

11 BY MR. HIRSCH:

12 Q Professor, you found an elevated undervote
13 rate for one race in Charlotte County; correct?

14 A We looked among top races, and we found an
15 elevated undervote rate in the attorney general race,
16 that's correct.

17 Q That was for an office displayed on a screen
18 that had a seven-candidate gubernatorial field as well
19 as the two-candidate attorney general's field?

20 A Correct.

21 Q And that screen was one of the first three or
22 four screens a voter would have seen; correct?

23 A It's not three or four. It is --

24 Q One of the first three or four?

25 A That is correct.

1 Q And that high undervote rate was reportedly
2 iVotronic's system; right?

3 A Yes.

4 Q And you found an elevated undervote rate for
5 the attorney general's race in Lee County; right?

6 A Yes.

7 Q Again, it was displayed on a screen with a
8 seven-candidate race?

9 A Yes.

10 Q And that screen was one of the first three or
11 four that a voter would have seen?

12 A Yes.

13 Q And that high undervote rate was reported on
14 the iVotronics voting system; right?

15 A Yes.

16 Q And you found elevated undervote in the
17 attorney general race for Sumter?

18 A Yes.

19 Q Also on a crowded screen with seven lines for
20 governor and two for attorney general; correct?

21 A Are you asking me to describe it as crowded?

22 Q Withdraw "crowded." Also on a screen with
23 seven lines for governor and two lines for attorney
24 general; right?

25 A There were seven -- yes, yes.

1 Q And that was, again, one of the first three or
2 four that a voter would have seen?

3 A Technically speaking, we don't actually know
4 which direction that voters went. But, yes, I would
5 say that's correct.

6 Q The voter can start at the back end of the
7 ballot on a iVotronics?

8 A A voter can start, go to the back, work toward
9 the front.

10 Q The first thing they would see is the front of
11 page one of the ballot; correct?

12 A Yes. Yes.

13 Q You found an elevated undervote rate for one
14 race in Sarasota County, the congressional race;
15 right?

16 A Again, one of the top races that we looked at.

17 Q And that was for an office displayed on the
18 same screen as the seven-candidate gubernatorial
19 field; right?

20 A It was above the seven-candidate gubernatorial
21 field, unlike the other counties.

22 Q It, again, was one of the first three or four
23 screens that a voter would have seen, barring some
24 bazaar paging from the back and working backwards?

25 A That is correct.

1 Q And that high undervote rate was also reported
2 on the iVotronics system; right?

3 A Yes.

4 Q You compared undervote rates on iVotronics
5 machines using the bit map screen style, which I think
6 you also called the pixel style, like Nassau or
7 Miami-Dade County's machines, and the iVotronics
8 machines using the text-based screen style like
9 Sarasota's; correct?

10 A I discussed both of them, yes.

11 Q Professor, this is a blowup of page 2 of the
12 Sarasota County electronic ballot, which is already in
13 evidence as Jennings Exhibit 7A. Is that screen what
14 we call in a landscape format, meaning that it's wider
15 than it is tall, like a normal TV set would be?

16 A You're asking me to measure that -- I'm
17 confused what you're asking me.

18 Q Is that screen wider than it is tall?

19 A I would say so.

20 Q Can we put up page 22 of your presentation
21 from this morning?

22 A Again, I'm referring here to the one that says
23 22 out of 39 on the bottom right-hand corner.

24 Q Is that screen in what we would call a
25 portrait format, meaning it's taller than it is wide?

1 A Yes.

2 Q To the best of your knowledge, do each of
3 these iVotronics screens -- each of these iVotronics
4 pages in their respective counties fill the screen on
5 the machine?

6 A I can't comment on that, no.

7 Q I will represent to you that they do. If that
8 were the case, it is pretty clear; isn't it, that
9 these are being used on different types of iVotronics
10 machines; correct?

11 MR. CODY: Objection, Your Honor, assumes
12 facts not in evidence. He doesn't know --

13 THE COURT: If he knows the answer, he can say
14 so. If he doesn't, say, I don't know.

15 A Different types, meaning what?

16 BY MR. HIRSCH:

17 Q That they're not reversible, that the machine
18 that has the horizontal screen is a different machine
19 from the one that has the vertical screen.

20 A I really don't know the engineering
21 distinctions about how the machine is different. I
22 have been told that the firmware is identical across
23 all machines.

24 Q You acknowledge, though, that the ballot
25 programming software for an iVotronics machine using

1 the bit map screen is not going to be identical to the
2 ballot programming in the iVotronics using the
3 text-style screen?

4 A The ballot programming software? I know
5 nothing about the ballot programming software.

6 Q If the ballot programming software were
7 different in the two machines, you would admit,
8 wouldn't you, that it's possible one type of machine
9 could have a software bug that the other wouldn't
10 have?

11 MR. CODY: Again, Your Honor, objection,
12 assumes facts not in evidence.

13 THE COURT: If he knows, he can answer. If he
14 doesn't, say he doesn't know.

15 A I know nothing about the ballot programming
16 software.

17 BY MR. HIRSCH:

18 Q You testified that in Duval County, Florida,
19 the undervote rates in the 2000 presidential election
20 were highest in the precincts that had the largest
21 concentrations of African-American voters; right?

22 A That's what that plot demonstrated.

23 Q And from that you conclude that
24 African-Americans are more likely -- were more likely
25 to be confused by that ballot; correct?

1 A Incorrect.

2 Q You testified that in Sarasota County this
3 year the undervote rates were highest in the precincts
4 with the largest concentration of people over the age
5 of 75; right?

6 A Correct.

7 Q And you found a similar pattern for Charlotte
8 County precincts for attorney general voting; correct?

9 A Correct.

10 Q But you concede, don't you, that the age
11 factor was not statistically significant in your
12 Charlotte County analysis; correct?

13 A When you say "your Charlotte County analysis,"
14 do you refer to the individual by progression here, or
15 do you mean something elsewhere?

16 Q Just a moment, Your Honor, while I find the
17 right page of the exhibit.

18 Look at page 26 of your presentation from this
19 morning, please. Under the column that says, AG,
20 meaning attorney general, is there a number, .16, that
21 represents what you call the undervote age slope?

22 A Yes.

23 Q And is that in gray text?

24 A Yes.

25 Q And did you testify the numbers in gray text

1 are not statistically significant?

2 A Yes.

3 Q So is that number statistically significant?

4 A No.

5 Q When you analyzed the age factor, you said you
6 used a voter file from a company called Polimetrics;
7 correct?

8 A Correct.

9 Q Did you exclude from the voter file those
10 voters who did not actually turn out and vote in the
11 2006 election?

12 A No. We excluded those who didn't vote in the
13 2004 election, because that was the best information
14 we had.

15 Q So there is voters in the file that, as you
16 used it, who didn't vote in the 2000 election and
17 voters who did vote in the 2000 election who weren't
18 in the file?

19 A I'm sorry, 2000?

20 Q Excuse me if I misspoke. Are there voters in
21 your file who did not vote in the 2006 election?

22 A It's possible.

23 Q And are there voters who voted in the 2006
24 election who were not in your file?

25 A Are there voters who voted in the 2006

1 election who are not in my file? It is possible.

2 Q If someone registered to vote in 2006, would
3 they be in a file of 2004 voters?

4 A No.

5 Q Did you exclude from your voter file those
6 voters who voted absentee on paper ballots in 2006?

7 A No.

8 Q Are aware of the political science literature
9 showing that people over the age of 75 are
10 particularly likely to vote absentee?

11 A I believe that's what the literature thinks.

12 Q But there is no way an absentee voter, even if
13 they're 100, could be confused by an electronic voting
14 machine they're not using; correct?

15 A In the technical sense, of course, someone
16 couldn't be confused by a machine he didn't use.
17 That's why I didn't use it. I think the answer to
18 your question is yes.

19 Q On pages 6 through 9 of your presentation this
20 morning you limited yourself to precincts with more
21 than 100 people; correct?

22 A That is correct.

23 Q On page 16, when you analyzed age, did you
24 also exclude small precincts and limit yourself to
25 precincts with more than 100 people?

1 A No.

2 Q I'm sorry?

3 A No.

4 Q No? The total number of congressional
5 undervotes on electronic ballots in Sarasota County
6 was about 17,800; correct?

7 A And 25.

8 Q Thank you. And your best estimate of what you
9 call the suppressed vote in Sarasota County is 14,800;
10 correct?

11 A The December 3rd draft of the paper refers to
12 suppressed. That's not language I use today.

13 Q The total number of what I would call normal
14 undervotes is just the difference, which is about
15 3,000 votes; right?

16 A Normal?

17 Q Let me put it simply. Is 17,800 minus 14,800
18 approximately 3,000?

19 A Yes.

20 Q And 3,000 votes is about 2.5 percent of the
21 119,000 and change in terms of numbers of electronic
22 ballots cast in Sarasota County this year; correct?

23 A You mean is that fraction .05?

24 Q That's two and a half percent?

25 A Yes.

1 Q So if there had been no suppressed votes, as
2 you used that term previously, the undervote rate in
3 Sarasota County's congressional race would have been
4 very roughly in the ballpark of 2.5 percent?

5 A What I have said is, if the Sarasota voters
6 had used the Charlotte machines and the format, then
7 we would have expected to see an undervote rate of
8 approximately 2.5 percent.

9 Q And you've testified about the high undervote
10 rates in the Sarasota County precincts that contained
11 the largest numbers of voters over 75; correct?

12 A Would you restate that, please?

13 Q You've testified about the high undervote
14 rates in the Sarasota County precincts that contain
15 the largest number of voters over the age of 75
16 according to your voter file; right?

17 A That's correct.

18 Q And those precincts with lots of folks above
19 the age of 75 have undervote rates far in excess of
20 2.5 percent; don't they?

21 A Those -- those precincts with large numbers of
22 voters over 75 had higher -- yes, that's correct.

23 Q But you admit; don't you, if you look at the
24 youngest precincts in the entire county, they also
25 have undervote rates far in excess of 2.5 percent;

1 don't they?

2 A Yes. That follows from page 16.

3 Q And isn't it true that every precinct in
4 Sarasota County had an undervote rate above 2.5
5 percent on election day?

6 A Literally everyone? I believe that is
7 correct, but I cannot say for certainty.

8 Q Are you looking at the right-hand graph on
9 page 16 of your presentation from this morning?

10 A Yes, I am.

11 Q Along the X axis at the bottom, am I correct
12 that you've shown the fraction of voters who are at
13 least 76 years old?

14 A Yes.

15 Q Can we put that up on the screen, please?
16 (Discussion off the record).

17 BY MR. HIRSCH:

18 Q Let me ask you about this dot here. I'm
19 pointing to the far right-hand dot on page 16 in the
20 right-hand graph. That represents one precinct in
21 Sarasota County?

22 A Correct.

23 Q And am I reading it correct -- correctly that
24 if you go down here, you're telling us that that
25 precinct has well in excess of 90 percent of its

1 voters above the age of 75?

2 A According to our voter file, given the
3 conditions I gave you before.

4 Q The voter file that didn't have the 2006
5 voters in it and had non-2006 voters in it?

6 A The voter files that -- we looked at 2004
7 voters, correct.

8 Q Did you personally look at this voter file and
9 verify that it looked sensible, or did you entrust
10 that to your graduate students or colleagues?

11 A Could you repeat that question, please?

12 MR. HIRSCH: Could you read back the question?

13 (Question read).

14 A I've looked at that voter file.

15 BY MR. HIRSCH:

16 Q Can you please tell us where this curious
17 precinct with 90-plus percent of the voters over the
18 age of 65 is in Sarasota County?

19 A No.

20 Q Let's turn to the left side of the graph along
21 here. Am I correct that if you start here at zero,
22 for fraction of voters at least 76 years, and go up to
23 your line, that would reflect the likely undervote in
24 a hypothetical precinct where nobody was over the age
25 of 75?

1 A Will you extrapolate from the production line
2 all the way to the left?
3 Q Uh-huh, yes.
4 A I would say that's correct.
5 Q And is it correct, therefore, that you
6 estimate the undervote rate in a precinct with no
7 voters over the age of 75 as being just a tad under 10
8 percent?
9 A Are you asking me to measure on the page?
10 Q Sure.
11 A I would say that looks reasonably plausible.
12 Q And is 10 percent about four times a 2.5
13 undervote rate?
14 A Well, technically speaking, it's exactly.
15 Q Just to be clear, we're speaking there of a
16 precinct with no voters, according to your voter file,
17 over the age of 75; correct?
18 A Correct.
19 Q Let's talk about your theory of voter
20 confusion. If I understand your theory, it's that
21 voters who are not primed to look for more than one
22 ballot on a particular page would vote a ballot on the
23 first page, but then when they hit -- and maybe on the
24 second page, if there is only one contest there. But
25 whenever they first hit a page that has more than one

1 contest, they would vote for one and miss what
2 follows; is that correct?

3 A .No.

4 Q Please explain to me why it's not.

5 A Because we don't suggest this would happen to
6 all voters.

7 Q Did you suggest that what I've described is
8 what happens to some voters and therefore might
9 elevate the undervote rate?

10 A You described there the alleged confused
11 voters' behaviors on multiple races when they reached
12 a confusing point. I don't -- I'm not sure that your
13 characterization of how they would vote in all those
14 other races is accurate.

15 What we've said in the theory was that the
16 first time a voter reaches an inconsistent ballot
17 page, given what he or she had seen to start, we
18 expect that's where confusion, if it ever occurs,
19 might begin.

20 Q Can we turn to page 27 of this morning's
21 presentation, please. This is the one that says
22 across the top, Collier County, top ballot races. Do
23 you remember testifying about this screen this
24 morning?

25 A Yes.

1 Q Did you testify that the senate race was on
2 its own screen and had a relatively low undervote
3 rate?

4 A The senate screen is on its own race, that's
5 correct.

6 Q And the governor's race is on its own screen,
7 also a low undervote rate?

8 A That is correct.

9 Q I think you also said that in between there
10 might be a congressional race on its own page as
11 well --

12 A That's correct.

13 Q -- you don't have it on this table? Then when
14 they get to what is probably actually the fourth
15 screen, the first thing the voter would see is the
16 attorney general's race, followed by the CFO and
17 agriculture commissioner's race; correct?

18 A That is correct.

19 Q And you testified that the undervote rates
20 were much lower for the attorney general than for the
21 CFO and ag commissioner; correct?

22 A Yes.

23 Q And that was consistent with your theory that
24 if they had seen one one test on each of the first
25 three pages; they got to this fourth page; voted for

1 AG if they were interested, but skipped what was below
2 it because it was the first time they were seeing or
3 not seeing the races below it on the same screen;
4 correct?

5 A I don't know whether their interest has
6 anything to do with this.

7 Q But your theory is the fact that it came below
8 the first race and was the first screen with multiple
9 races in importance; correct?

10 A Below? I'm not willing to say below is the
11 key issue here.

12 Q Well maybe we can probe that and see why
13 you're not so willing to say it. This is page 2 -- I
14 just put back up Exhibit 7A for the record. This is
15 page 2 of the Sarasota County ballot. And here a
16 voter working from the top down on page 1 would have
17 voted for U.S. Senate; correct?

18 A I don't know if voters always work from top
19 down.

20 Q You have this theory that voters, although the
21 electronic machines show them page one, march to the
22 end of the ballot and start working their way
23 backwards; is that what I understand you to be saying?

24 A No.

25 Q Is it your understanding that iVotronics,

1 after the PEB is put in, will display page one first,
2 that's why they call it page 1?

3 A That's my understanding.

4 Q This is page 2. We agree that there is only
5 one contest on the first page of the Sarasota County
6 ballot, and that's the U.S. Senate race?

7 A I agree.

8 Q Do we agree that the first contest on page 2
9 is not the governor's race; it is the congressional
10 race at issue in this case here?

11 A You mean first in a physical sense or first in
12 the sense in which voters actually see it?

13 Q First in the physical sense.

14 A I would say, given it is literally on top, if
15 that's your definition of first, it's the first.

16 Q And your understanding is there was a high
17 undervote rate in the first race, as we just defined
18 it, and a low undervote rate in the second race, as we
19 just defined those terms?

20 A It is in fact a point of fact that there is a
21 high undervote rate in the CD 13 race and a low
22 undervote rate in the governor's race.

23 Q Is it your theory that -- can we pull up on
24 the screen over there the Charlotte County ballot,
25 please. It's page 20. It's the third subpage for

1 page 20. So these are the two screens we've been
2 discussing, Sarasota here on the left, on the blowup
3 here -- excuse me, on the screen here we have
4 Charlotte County; correct?

5 A That's the Charlotte County ballot, correct.

6 Q These are both the screens where there is a
7 gubernatorial race, seven candidates on this screen;
8 correct?

9 A Yes.

10 Q And they share the screen with a two-candidate
11 race in Sarasota County; that is a congressional race;
12 correct?

13 A That's correct.

14 Q And in Charlotte it is an attorney general's
15 race; correct?

16 A Correct.

17 Q And the high undervote rate is the
18 top-of-the-screen race in Sarasota County and the
19 bottom-of-the-screen race in Charlotte County;
20 correct?

21 A Correct.

22 Q Is it your theory that people in Sarasota
23 County read the ballot from bottom to top, and people
24 in Charlotte County read it from top to bottom?

25 A Are you asking me to comment on what draws

1 people's attention first?

2 Q No. I'm asking if it's your theory that we
3 see low undervote in the bottom and high in the top in
4 Sarasota County, and the opposite in Charlotte County
5 is attributable to your belief that people read in the
6 opposite direction in these two counties?

7 A I don't have any beliefs of the direction that
8 any individual will read.

9 Q Professor, you said that you got the ballot
10 image files for about a dozen, roughly, Florida
11 counties that use ES&S's iVotronics system; right?

12 A I could count the exact number, but a dozen is
13 close.

14 Q You said you requested ballot image logs also
15 from the Florida counties that used other
16 manufacturers' electronic voting machines; right?

17 A I testified to that, yes.

18 Q Approximately when did you request the ballot
19 image logs from the iVotronics counties?

20 A I don't know. Give you the exact date?

21 Q Not the exact date. Approximately.

22 A That process has been ongoing for several
23 weeks. I imagine that probably the very first time I
24 spoke with them I asked. I can't be -- I can't be
25 certain. But I'm in the habit of whenever I speak

1 with supervisor of elections officials, I always ask
2 for that sort of data.

3 Q Would that have been the week of the election
4 or the week after the election?

5 A The election was on a Tuesday. I -- my guess
6 is, the earliest conversation was the next Monday, but
7 I really don't know for sure.

8 Q I'm not holding you to the date. But for the
9 record I want to say to you that is November 13th,
10 then, six days after the November 7th election day?

11 A That would be correct.

12 Q And roughly how long did it take to actually
13 get the ballot image logs?

14 A It varies by county.

15 Q What's the range?

16 A Well, some we haven't received.

17 Q When did you request the ballot image logs
18 from the non-iVotronics counties?

19 A My recollection is, we probably did it very
20 quickly, because originally we were interested in
21 Hillsborough County. Hillsborough County is one place
22 I would like the ballot image logs.

23 Q Are you saying that you requested the ballot
24 image logs from the non-iVotronic counties at the same
25 time, approximately, that you requested them from the

1 iVotronic counties?

2 A You're asking me to recall phone conversations
3 from a month ago. But I would imagine -- I mean you
4 want me to speculate?

5 Q No. I want you to give your best
6 recollection.

7 A My recollection is I've made enormous numbers
8 of phone calls about logs.

9 Q And you've managed to get them for all these
10 counties that use iVotronics and none of the counties
11 that use other machines?

12 A That is correct.

13 Q You testified that the ballot format allegedly
14 responsible for the U.S. representative race
15 undervotes in Sarasota County is most closely
16 approximated by the ballot format allegedly
17 responsible for the attorney's -- excuse me --
18 attorney general's race undervote in Charlotte, Lee,
19 and Sumter counties; right?

20 A That was in my second declaration, correct.

21 Q And is it correct that one common feature
22 among those four races; U.S. representative in
23 Sarasota, attorney general in Charlotte, Lee, and
24 Sumter, is the sharing of the screen between a
25 two-candidate field and seven-candidate field for

1 governor?

2 A I testified that the common feature is that
3 you have two races on a page, followed by pages that
4 had one race on a page.

5 Q That's not what I asked you. I asked you if a
6 common feature was that they shared a two-candidate
7 field for Congress in Sarasota or attorney general in
8 the other counties you just named and a
9 seven-candidate gubernatorial field; yes or no?

10 A I want to understand. I'm looking at this
11 page to your left on the board. You're asking me if
12 the CD 13 race shares a page with the governor's race?

13 Q Yes.

14 A Yes, it does.

15 Q And in Charlotte County displayed here, the
16 same is true?

17 A No. The attorney general's race shares a page
18 with the governor's race.

19 Q Thank you. Correct. And the same that's true
20 for Charlotte would be true for Lee and Sumter?

21 A That is correct.

22 Q And another common feature among all four of
23 these races is that they were conducted on iVotronics
24 machines; correct?

25 A That is correct.

1 Q And did you know that other counties in
2 Florida use different brands of electronic voting
3 machines, specifically the Diebold AccuVote TXS or the
4 Sequoia AVC Edge 1?

5 A Yes.

6 Q Did you bother to look at the ballot screens
7 in those counties to see if they, too, paired the
8 seven-candidate gubernatorial race with a
9 two-candidate congressional or attorney general race?

10 A I've spent an enormous amount of time
11 attempting to get screen shots from all counties that
12 do that.

13 Q Did you get those screen shots and examine
14 them?

15 A We have verbal descriptions of the screen
16 shots. That's all I've been able to get.

17 Q So you've been able to get screen shots of all
18 these iVotronic counties, but you can't come in here
19 with any screen shots of the non-iVotronics screens in
20 these other counties?

21 A I believe in my records I have pictures that
22 an election official took with a digital camera of, I
23 believe, Pinellas County, but I could be mistaken.

24 Q Does it share the feature we just described,
25 having the seven-candidate gubernatorial on the same

1 screen as a two-candidate congressional or attorney
2 general's race?

3 A To the best of my recollection, no.

4 Q Do you recall on Sunday, November 26th, that
5 you sent the November 23rd draft of your paper to
6 Professor Dan Wallach, the computer scientist who
7 testified here today?

8 A I sent it to many people. I believe I sent it
9 to Professor Wallach.

10 Q Do you recall that he wrote you back and said
11 that, your conclusion that voter confusion rather than
12 machine malfunction triggered the high undervote rate
13 would never be convincing unless you found a suitable
14 control using non-iVotronic equipment, by digging up
15 an election on a Diebold system or whatever else had a
16 comparable ballot layout to Sarasota County
17 Congressional District 13?

18 MR. CODY: I object in terms of him testifying
19 as to what is in the contents of the hearsay
20 document.

21 MR. HIRSCH: The question is the effect it had
22 on him. I'm not asking for the truth of the
23 statement. I'm asking him if he recalls receiving
24 such a message.

25 THE COURT: Ask him if he received a message

1 from Dr. Wallach.

2 BY MR. HIRSCH:

3 Q Did you receive a message from Dr. Wallach?

4 A Yes.

5 Q Do you recall what it said?

6 A No. But I will -- no. I mean I receive many

7 e-mails, you know.

8 Q Do you still have your paper in front of you?

9 A Are you referring to the December 3rd draft?

10 Q Yes.

11 A Yes, I do.

12 Q Turn to page 11, please. Did you say then,

13 this paper is purely a statistical exercise, and as

14 such cannot directly address the possibility that

15 engineering lies underneath the undervote rates we

16 studied?

17 A I'm looking for that quote.

18 Q The last paragraph.

19 A Yes, I see the sentence.

20 Q And you admit; don't you, that engineering

21 flaws or software bugs could mimic the ballot format

22 effects; don't you?

23 A You mean the ballot format effect in Sarasota,

24 Lee, and Charlotte counties, including Miami-Dade?

25 Q I mean the ballot format effects that you're

1 testifying to in Sarasota County.

2 A Well, the ballot format effects are general.
3 When you say "Sarasota County," should I take that to
4 mean every single ballot format effect we've observed?

5 Q Let me repeat. Do you admit that engineering
6 flaws or software bugs could mimic ballot format
7 effects?

8 A And I'm sorry. I need you to clarify. Do you
9 mean ballot format effects, everything that I've
10 testified to?

11 Q Let's turn to page 12 of your report. Did
12 your paper say, ultimately no statistical analysis of
13 observed voting data can distinguish between ballot
14 format effects and engineering flaws that mimic ballot
15 format effects; right?

16 A I said that.

17 MR. HIRSCH: No further questions, Your Honor.

18 THE COURT: Mr. Finley?

19 CROSS EXAMINATION

20 BY MR. FINLEY:

21 Q Good afternoon, Professor. I'm Lowell Finley,
22 and I represent the 11 voter plaintiffs in the case
23 that's been consolidated with Christine Jennings's
24 case. I just have a couple of questions for you.

25 You testified in your direct examination that,

1 as far as you could tell from your study, there was no
2 magic bullet in patterns of how voters cast their
3 votes on the five -- on the statewide races and a vote
4 being turned into an undervote or a result being an
5 undervote; is that correct?

6 A That's what the data suggests, yes.

7 Q Did you analyze the ballot images in the order
8 in which they were actually cast by the voters?

9 A I'm not sure I understand the question.

10 Q When you looked at ballot images to collect
11 your data, did you do any analysis of those ballot
12 images in terms of any effect that might come from the
13 order in which one ballot was cast following another?

14 A Well they're scrambled, so I don't think it
15 would mean anything.

16 Q So, in other words, the iVotronics is designed
17 so that, when it records a ballot image, it
18 automatically randomizes them?

19 A I don't know the design features. My
20 understanding is that by the time we get the images,
21 the order has been scrambled.

22 Q So given that that's the form you received
23 them in, is it accurate to say that you have no way of
24 studying whether there could be some sort of magic
25 bullet that's tied to the sequence in which voters who

1 voted in patterns cast their ballots?

2 A I don't understand.

3 Q You heard Professor Wallach's testimony, I
4 believe?

5 A Yes, I did.

6 Q And did you hear him testify as to a
7 phenomenon he described as indeterminant software
8 bugs?

9 A Yes.

10 Q And I believe he described that as a bug that
11 may manifest itself in a malfunction under certain
12 circumstances, but not under other circumstances; do
13 you recall that?

14 A I recall him testifying to that, yes.

15 Q So if, hypothetically, there were a bug that
16 were -- that was triggered initially by a ballot being
17 cast with a certain form -- pattern of a vote entry by
18 voter A, and then voter B followed, and the software
19 bug, the indeterminant software bug, had its impact on
20 the accuracy with which voter B's entries were made,
21 you would have no way, based on your own analysis, to
22 determine whether there was a correlation there; is
23 that correct?

24 MR. CODY: Objection, Your Honor. This
25 witness has not been tendered as a computer

1 engineering expert.

2 THE COURT: I'm aware of that. If he knows
3 the answer, he can answer. If he doesn't, he
4 can't.

5 A The question is whether there is no way?

6 BY MR. HIRSCH:

7 Q No. Is there any way, with the data in the
8 form you have it, that you could test for that?

9 A Any way. Would you like me to speculate?

10 Q No. I'm asking you if there is a way that you
11 know of.

12 A I mean, I'm not an expert in deterministic or
13 non-deterministic software bugs. So everything has to
14 be taken with that in mind.

15 Q And, again, with in mind the fact that these
16 ballot images came to you in randomized order.

17 A If the alleged software malfunction caused
18 everyone to undervote in every single race after that,
19 it might be noticeable. Of course, we wouldn't have
20 patterns, and I think the data would look pretty
21 strange. So I'm hesitant to say there is no way.

22 Q And if an indeterminant software bug didn't
23 cause this effect for every valid -- every voter that
24 followed, let's say, for example, just for the next
25 voter who followed, would you have any way of being

1 able to detect that?

2 A Using the ballot image data, do we have any
3 way to associate what one voter does from what the
4 next voter did. No.

5 Q Did ES&S ask you at any point to do any
6 polling of voters in Florida?

7 A No.

8 Q Did ES&S ask you to do any surveys?

9 A No.

10 Q Did ES&S ask you to do any test voting, using
11 ordinary citizens?

12 A Test voting, meaning --

13 Q Having ordinary Florida citizens cast ballots
14 in one voting exercise?

15 A No.

16 Q And did you look at any such -- the results of
17 any such inquiries?

18 A Yesterday I read the report that the state
19 produced.

20 Q And I believe on cross-examination by
21 Mr. Hirsch you said that you know nothing about
22 software programming; is that correct?

23 A Excuse me?

24 Q You said that you know nothing about software
25 programming.

1 A What I said is, I know nothing about
2 iVotronics software programming.

3 Q Okay. Do you consider yourself professionally
4 qualified to -- to give an opinion as to the testimony
5 given by Professor Wallach with respect to source
6 code?

7 A He gave a lot of testimony. Can you be
8 specific?

9 Q Sure. With the ways in which a source code
10 can -- can malfunction because of coding errors or
11 malicious code.

12 MR. CODY: Objection, Your Honor, beyond the
13 scope of this witness's expertise.

14 MR. FINLEY: I'm just asking whether he has --
15 he feels that he is qualified or not.

16 THE COURT: I think that your question begs
17 the answer, because he's already answered he's not
18 an expert in the field of those machines.

19 MR. FINLEY: I will move on, Your Honor.

20 THE COURT: It's your time you're using up.

21 BY MR. FINLEY:

22 Q Did ES&S ask you, as part of your analysis, to
23 study whether there had been undervote patterns,
24 similar to those you were investigating here, in any
25 past elections prior to November 2006 involving its

1 iVotronics machines?

2 A Did they explicitly ask that? Not to my
3 recollection.

4 MR. FINLEY: Thank you. I have no other
5 questions.

6 MR. LABASKY: It says good morning in my
7 notes -- but actually it's good afternoon --
8 Professor.

9 CROSS EXAMINATION

10 BY MR. LABASKY:

11 Q In initiating your study, did you review any
12 of the state statutes or the rules of the State of
13 Florida, Department of State concerning ballot format
14 and the process that's undertaken in setting up a
15 screen?

16 A Did I review the formal document? No, I did
17 not.

18 Q Are you familiar with the directions in state
19 law, in state statutes, or the department's rules
20 concerning ballot format?

21 A I couldn't speak with any authority to the
22 official Florida rules.

23 Q So you have no position with respect to
24 whether this ballot format or any of the other ballot
25 formats that you spoke of today complies with state

1 law?

2 A No.

3 Q Are you aware of any instance where ES&S has
4 communicated with Sarasota County concerning ballot
5 format issues?

6 A No.

7 Q But your testimony is that the -- that a
8 number of other counties, along with Sarasota County,
9 had higher undervotes based upon what you view as
10 their ballot format?

11 A Yes.

12 Q So it's not only Sarasota County that
13 demonstrates your hypothesis?

14 A That is correct.

15 Q The turnout was approximately what in this
16 race; do you know, in Sarasota County?

17 A The election day turnout was approximately
18 120,000. I believe you have those figures up now.

19 Q Yes, sir.

20 A Yes.

21 Q Do you know what percentage turnout that was
22 of the total voter population?

23 A Not exactly, no.

24 Q Not exactly, or you don't have any idea?

25 A Well it's not that I don't have any idea, but

1 I don't know the exact number.

2 Q Do you know how many registered Democratic
3 voters there are in Sarasota County?

4 A As of this moment, I do not know.

5 Q As of any moment?

6 A I mean, it's on our files; I don't have the
7 number memorized, if that's what you meant.

8 Q Just for the sake of my question, if you were
9 to assume that there were 77,872 registered Democrats,
10 as a political scientist who studies these type of
11 things, would you find it surprising that the
12 Democratic candidate, Jennings, would have 65,487
13 votes?

14 A Would I find it surprising?

15 Q Yes, sir.

16 A I want to make sure I understand your premise.
17 There are -- let's call it 78,000 registered
18 Democrats?

19 Q Yes, sir. Yes, sir.

20 A And Jennings receives 65,000 votes? Nothing
21 strikes me as particularly surprising about that.

22 Q Now if I asked -- if I told you that the
23 turnout in this race throughout the county was 50
24 percent of the registered voters, and that there were
25 117,539 -- round off to 118,000 -- Republicans, would

1 you find that, as a political scientist, with a
2 50-percent turnout, that Christine Jennings would
3 receive 65,000 votes with there only being 77,000
4 registered Democrats?

5 A If you're asking me if people always vote
6 their party, the answer is no.

7 Q Now, in this race, how many votes were
8 actually cast?

9 A Which race?

10 Q In this congressional race that we've been
11 discussing all day.

12 A It looks like your -- in Sarasota County?

13 Q Yes, sir.

14 A It looks like your figure says there were
15 118,940 for Jennings and 119,309 for Buchanan.

16 Q I'm sorry, those -- these numbers are through
17 the entire district. The bottom number is the number
18 in Sarasota. So there is 58,632 and -- for Buchanan
19 and 65,487 for Jennings; correct?

20 A That's what your figure says, yes.

21 Q And then there were 18,412 undervotes?

22 A 18,412. That number sounds correct.

23 Q Approximately 124,000 people had no problem,
24 apparently, voting in this race; is that accurate?

25 A I think your figure, by the way, is 118,725.

1 But approximately the sum of those numbers, are you
2 asking me if those people had difficulty voting?

3 Q Uh-huh.

4 A Well obviously I wasn't there with them, but
5 judging by the fact they cast valid votes; that would
6 be yes.

7 Q Now part of the discussion of this issue is
8 partially predicated -- and correct me if I'm wrong --
9 on the very low number of undervotes in the absentee
10 voters in Sarasota County. Is that part of what sets
11 the predicate for this discussion and your hypothesis?

12 A Yes.

13 Q Where are the absentee voters? Who are they?

14 A You mean literally who are they?

15 Q Literally.

16 A I don't know.

17 Q What do you have to do to be an absentee
18 voter?

19 A According to Florida law?

20 Q Yes, sir.

21 A I don't know.

22 Q Aren't typically absentee voters people who
23 are not in the county and therefore don't vote on
24 election day?

25 A Are you asking me to speculate about where the

1 absentee voters actually were on election day? .

2 Q I'm not asking you where they are; I'm asking
3 you if typically absentee voters are individuals not
4 in the county where they reside and where the vote was
5 placed on election day?

6 A That sounds intuitive, but I don't know if
7 it's correct.

8 Q Would you say that absentee voters, to a
9 certain extent, may not be exposed to all of the
10 political dynamics going on in a race, because they're
11 not in that county or within that media area, as has
12 been discussed?

13 A You're asking me to speculate on the physical
14 locations, and I don't have information about that.

15 MR. LABASKY: Nothing further, Your Honor.

16 CROSS EXAMINATION

17 BY MR. BURHANS:

18 Q Good afternoon, Professor. I'm Glenn Burhans.
19 I represent Vern Buchanan. I would like to turn our
20 attention back, if you will for just a moment, to the
21 discussion of the top ballot race analysis that was
22 conducted by you. And specifically I want to refer to
23 slides 25, 26 and 29 of your presentation.

24 Now those slides relate to Sarasota,
25 Charlotte, and Lee counties; correct?

1 A Sarasota is page 25. I'm sorry. The other
2 page was page 26?

3 Q Twenty-six.

4 A That was Charlotte County. And what was the
5 other page?

6 Q Page 29.

7 A Lee.

8 Q Yes. Now, one thing that those three counties
9 have in common is that they were all non-bit map
10 formats; correct?

11 A Sarasota, Charlotte, and Lee were text based,
12 that is correct.

13 Q Thank you. And another similarity is that on
14 those ballot formats, there was a pairing with the
15 governor's race and some other race; correct?

16 A In Sarasota and -- yes, that is correct.

17 Q But, for example, Sarasota was congressional
18 district race 13 and the governor's race; correct?

19 A That's correct.

20 Q And in Charlotte we had the governor's race
21 and the attorney general's race; correct?

22 A That is correct.

23 Q And the same thing with Lee County, we had the
24 governor's race and the attorney general's race?

25 A That is correct.

1 Q In each of those pairings we saw what you
2 testified to be a statistically high undervote rate
3 with the race that was paired with the governor's
4 race; correct?

5 A I'm not drawing attention to the governor's
6 race. It happened to be that those three races were
7 on the same page as the governor's race.

8 Q But it is correct that each of those races
9 that experienced a higher rate of undervote, under
10 your hypothesis, was paired with the governor's race?

11 A Not under my hypothesis; that's literally
12 true.

13 Q Okay. Thank you for that. Now, isn't it
14 reasonable to conclude that the interest in the
15 governor's race could have overshadowed interest in
16 the other races?

17 A Would that be consistent with the voter
18 confusion? Is that what you're asking?

19 Q Is it one reasonable conclusion to draw from
20 your analysis that the -- that voter interest in the
21 governor's race overshadowed voter interest in the
22 other races?

23 A I don't think that's consistent with what we
24 observed in Miami-Dade, if that's what you mean.

25 Q Miami-Dade was not a text-based format;

1 correct?

2 A That is correct, it was pixel based.

3 Q Let's talk about the counties I asked you to
4 look at; Lee, Charlotte, and Sarasota County; correct?

5 A Correct.

6 Q Let me ask you this way: Are there any other
7 text-based counties that experienced the high
8 undervotes in races paired with the governor's race?

9 A Are there any other text-based counties -- we
10 have -- to the best of my knowledge, we have all of
11 them. In other words, I don't believe outside of
12 Charlotte, Lee, and Sumter, the attorney general's
13 race, and Sarasota for the CD 13 race, that we have
14 examples that would fit your hypothetical, if I
15 understand you correctly.

16 Q All I'm getting at is you can't rule out the
17 possibility that with respect to the higher undervote
18 rates seen in pairings of races with the governor's
19 race, that there is the possibility that voter
20 interest in the governor's race overshadowed voter
21 interest in the other races?

22 A That's inconsistent with the Miami-Dade
23 evidence.

24 Q I'm limiting my question to text-based formats
25 only. All I'm asking you is, within the text-based

1 format of these ballot styles, you cannot rule out the
2 possibility that the high undervote rate attributable
3 to races paired with the governor's race is somehow
4 not connected to voter interest in the governor's race
5 overshadowing voter interest in the other races?

6 MR. HIRSCH: Objection, Your Honor, asked and
7 answered. I think we're seeing an exercise in
8 taffy-pulling here. We have a three o'clock
9 deadline.

10 THE COURT: That's the fourth time you've
11 asked the question.

12 MR. BURHANS: I don't think the witness and I
13 are on the same page as to -- I kept saying
14 text-based; he went back to bit map --

15 THE COURT: You're asking him to answer a
16 question in a vacuum. If you can answer it, answer
17 it. If you can't --

18 A I think it's inconsistent with the evidence
19 we've shown.

20 BY MR. BURHANS:

21 Q Doctor, in all of your years of experience as
22 a -- an expert in undervote analysis, have you ever
23 come across any situation where engineering flaws
24 mimicked ballot format effects?

25 A None that I know of.

1 Q You're not aware of any published report or
2 study indicating that?

3 A Where a mimicked ballot format in a variety of
4 counties correlated with age the way we found them you
5 mean?

6 Q No. I just mean in a general sense. Are you
7 aware of any circumstance where an engineering flaw
8 mimicked ballot format effects?

9 A I couldn't cite that, no.

10 Q Mr. Finley asked you about other documents you
11 might have read in your analysis or in preparation for
12 hearing. And you said that you read the state report;
13 that's the audit report that the state put out?

14 A Yesterday morning.

15 Q Okay. And you read that report?

16 A I read that report quickly, yes.

17 Q Mr. Finley didn't ask you about it, but I
18 would like to. The -- there is a statement in the
19 report that says, quote, the test results show that
20 the iVotronic touch screen accurately captures the
21 voter's selection as presented to the voter on the
22 review screens. Is that consistent or inconsistent
23 with your analysis today?

24 A Consistent.

25 Q If you don't mind, I would like to spend just

1 a couple of minutes on this priming effect theory that
2 you discussed today. I'm only going to talk about
3 things that weren't discussed by the other counsel.
4 Now, the priming effect only occurs on touch screen
5 machines; correct?

6 A I don't know.

7 Q At least in terms of your observations, we're
8 talking about priming effect occurring on touch screen
9 machines?

10 A In a narrow sense we're looking at priming
11 effects across multiple pages. That -- the idea of
12 multiple pages doesn't exist in the same way as with
13 optical scan voting. Whether there is other priming
14 effects in optical scan voting, I don't know.

15 Q I'm not asking you about optical scanning. I
16 just want to know, in this context, we're talking
17 about priming effects in touch screen voting; that's
18 the basis of your analysis; correct?

19 A Yes.

20 MR. HIRSCH: Objection, Your Honor. We're
21 supposed to be doing cross. By admission he's
22 going outside the scope of direct, and he says he
23 wants to enter into areas previously not discussed.

24 MR. BURHANS: I'm asking about the priming
25 effect theory that was discussed; I'm just not

1 repeating what was previously asked.

2 THE COURT: You are rapidly gaining a
3 reputation of asking the same question over and
4 over and over. This is the third time you've come
5 back to this question. He said he's not an expert
6 in this. Ask it one more time; he's going to
7 answer it, and we're going to move on.

8 MR. BURHANS: I will move on. I'm not trying
9 to be difficult.

10 THE COURT: I'm just saying the pattern you're
11 getting into.

12 MR. BURHANS: I understand. I will break that
13 pattern.

14 BY MR. BURHANS:

15 Q Sir, would you agree that touch screen voting
16 technology is a relatively new or emerging technology?

17 A I'm not an expert in technology. I can tell
18 you that, to the best of my recollection, it's newer
19 than many other forms of voting.

20 Q Would you agree that the body of scientific
21 literature on touch screen technology is relatively
22 emerging and perhaps even in a state of flux?

23 A I don't know the level of literature on this
24 in scientific engineering fields.

25 Q Is the priming effect theory something that

1 you developed?

2 A In collaboration with coauthors, yes.

3 Q And when did you and your coauthors
4 collaborate to develop that priming effect theory?

5 A We started on November 9th, I would say. We
6 didn't call it priming at that point. But we started
7 to develop some initial work on November 9th.

8 Q So since you developed this theory on November
9 9th, this theory has not been tested in other
10 elections; correct?

11 A We didn't develop a theory on November 9th;
12 that's when we started work on this project. Have we
13 tested this in other elections? No.

14 Q Are there any published studies with respect
15 to the priming effect, as you've testified to today?

16 A I suspect that the candidate name order
17 literature that Professor Stewart discussed yesterday
18 is probably related in some way to this effect. So
19 are there studies that directly examine the precise
20 way we phrased it? No. But is it true that other
21 sorts of analyses fall within this type of way of
22 approaching voters' choices, I would say the answer is
23 yes.

24 Q Are you aware of anything in the body of
25 relevant literature that would alert elections

1 officials to the effect of your priming hypothesis?

2 A Am I aware of literature that election
3 officials read?

4 Q Well anything in the body of
5 publicly-available literature that an election
6 official can read that would alert them to the
7 potential priming effect that you've testified to?

8 A I understand. Nothing that I know of.

9 Q Is there anything in the body of relevant
10 literature that would -- that an election official can
11 consult in order to address the priming effect?

12 A They can consult with us.

13 Q And you're not aware of any government rule or
14 regulation that addresses the priming effect?

15 A I'm not aware of any such rule or regulation,
16 no.

17 Q Now, turning to the discussion of voter
18 confusion. When you talk about voter confusion,
19 you're not really saying that voters were actually
20 confused. Isn't it more correct to say that it's
21 the -- the confusion is really what you consider to be
22 the voter's atypical response to the presentation of
23 the ballot on the touch screen?

24 A I don't want to use "confusion" in the
25 clinical way. Obviously we're not in the voters'

1 heads, and I can't speak to exactly the psychological
2 mechanisms behind this. They are consistent, from my
3 back -- from my -- when I use the word "confusion,"
4 it's as a nonexpert -- I think the behavior is
5 consistent with someone who didn't see a ballot race,
6 and I'm calling that confusion.

7 Q Thank you. Now, since you didn't poll any
8 Florida voters or Sarasota County voters, you can't
9 say whether any voters were actually confused; can
10 you, meaning they didn't understand how to cast a
11 vote?

12 A I don't think any poll would ever reveal that
13 information.

14 Q Now, since you didn't conduct a survey of any
15 Sarasota voters, you also can't determine how they
16 actually voted in this election; correct?

17 MR. HIRSCH: Objection. Your Honor, we're
18 seeing this endless so-called cross-examination
19 from friendly counsel in order to run the clock --

20 MR. BURHANS: I'm not running the clock. That
21 wasn't repeating a question.

22 THE COURT: He's an expert. He can ask the
23 question.

24 BY MR. BURHANS:

25 Q Since you didn't conduct a survey of Sarasota

1 voters, you can't tell how any of the voters actually
2 voted in this election?

3 A I don't think that follows.

4 Q You didn't conduct a survey of any Sarasota
5 voters to determine how they voted in this election;
6 correct?

7 A Surveys aren't capable of that.

8 Q You can't call a list of voters and ask them
9 how they voted in the election?

10 A Of course I could do that, but I wouldn't know
11 if the person was being honest.

12 Q Are you assuming that the voters would lie,
13 sir?

14 A I'm not making any assumptions.

15 Q Okay. I will move on. Mr. Hirsch asked you
16 to assume computer malfunction when asking you about
17 the written report that you did prior to this
18 litigation; do you remember that, sir?

19 A I remember it, yes.

20 Q Now, are you aware of any evidence of computer
21 malfunction in this case?

22 A I'm aware only that the parallel tests would
23 suggest there is no malfunction.

24 Q Can your analysis, as you've described it
25 today, tell us the number of votes that were cast for

1 Christine Jennings that were not counted, if any, in
2 the 13th congressional district race?

3 A Cast, meaning the person pushed the button,
4 and nothing -- and it was not counted when it should
5 have?

6 Q Yes, sir.

7 A I think it follows from my report that that
8 number is zero.

9 MR. BURHANS: Thank you. No further
10 questions.

11 MR. WINSOR: No cross from the state
12 defendants.

13 MR. CODY: Very quickly, Your Honor, on
14 redirect.

15 REDIRECT EXAMINATION

16 BY MR. CODY:

17 Q Professor, you talked about using the 2006
18 voter file. Has the voter file for the November 2006
19 election been released yet by the Department of State,
20 to your knowledge, showing who actually voted in the
21 election?

22 A No. To my knowledge it's not yet available.

23 Q So it would be impossible for you to do a
24 correlation, using a list of who voted in 2006, in
25 order to get the results that you talked about today?

1 A That's correct. The data are not available.

2 Q And so in light of that, is that why you used
3 the 2004 data?

4 A It's the most recent data available, that is
5 correct.

6 Q Now, the ballot images that Mr. Hirsch asked
7 you about, you noted that they were scrambled. Do you
8 know if they are scrambled, or do you know why they're
9 scrambled?

10 A I assume it's to protect anonymity of voters,
11 so that when the first voter arrives at a precinct, if
12 someone notices who it is, we could not figure out how
13 this individual voted.

14 Q I would like you to turn to page 11 of the
15 report, your December 3rd report.

16 A (Witness complies). Yes, sir.

17 Q Now, Mr. Hirsch asked you about the sentence
18 that said, this paper is purely a statistical exercise
19 and as such cannot directly address the possibility
20 that engineering lies beneath the undervote rates we
21 studied; do you recall that?

22 A Yes.

23 Q Do you recall that he asked you to read a
24 sentence on page 12 that begins, ultimately no
25 statistical analysis of observed voting data can

1 distinguish between ballot format effects and
2 engineering flaws that mimic ballot format effects; do
3 you recall that?

4 A I recall that.

5 Q Is there a sentence between those two
6 sentences?

7 A Yes.

8 Q Could you read that for me.

9 A Yes, I will. It's at the bottom of page 11:
10 However, to the extent that voter intentions or ballot
11 formats appear to explain observed undervote rates,
12 the conjecture that engineering flaws are responsible
13 for the CD 13 undervote rate becomes more difficult to
14 sustain.

15 Q And so is it your opinion that an engineering
16 flaw is, in light of all the analysis you've done
17 here, less likely than the analysis that you've done
18 to show what you're terming to be voter confusion?

19 A Yes.

20 Q Okay. Are you testifying, though, that every
21 voter who went into the election booth and saw what
22 was, I believe, seven whatever, the Charlotte County
23 screen -- the Sarasota County screen -- that every
24 voter was confused by that?

25 A No. Certainly not.

1 Q Now, could you take a look at page 10 of 39 of
2 the Exhibit 8, your December 20th presentation.

3 A Yes.

4 Q Now, in the original -- let me ask you, is
5 this chart created by a piece of software?

6 A Yes.

7 Q And does that software assign the colors?

8 A Yes.

9 Q Now, did everybody who voted in the District
10 21, or the circuit judge 21 race, all vote the same
11 way?

12 A No.

13 Q So, to your knowledge, when you prepared this
14 chart, were there different shades of green indicating
15 a vote for the judge or a vote against the judge or a
16 vote for one candidate or a vote for the other
17 candidate?

18 A Yes.

19 Q And is that reflected on this chart?

20 A Not to my eyes.

21 Q But was it reflected in the data?

22 A The answer is yes.

23 Q Okay. And so is that a -- more a function of
24 the color printer than a function of your data set?

25 A As in fact I mentioned immediately upon being

1 asked this, that shading effects are the first things
2 that came to mind. The answer is yes.

3 Q Now, I would like you to take a look at 16 of
4 39 of your presentation.

5 A Yes, sir.

6 Q Now, on the table marked CD 13, is it your
7 testimony that every person who was 75 years or older
8 was confused?

9 A Absolutely not.

10 Q And what does the upward sloping line mean in
11 terms of the increasing numbers of persons who were
12 over the age of 76?

13 A It means that precincts with greater fractions
14 of people who are at least 76 years old had higher
15 undervote rates.

16 MR. CODY: No further questions, Your Honor.

17 THE COURT: Thank you. You may step down.

18 MR. CODY: Your Honor, in case we have not, I
19 would ask that Exhibit 8, the presentation that we
20 put up, be accepted into evidence.

21 THE COURT: Everybody has copies now; right?

22 MR. CODY: Yes. Everybody has gotten --

23 THE COURT: Any objection? So received.

24 (Exhibit No. 8 was received in evidence).

25 MR. CODY: Thank you, sir.

1 THE COURT: How many more witnesses do y'all
2 have?

3 MR. CODY: Your Honor --

4 MR. DeGRANDY: In terms of evidence, we've
5 concluded our presentation. We wanted to inquire
6 of Your Honor, if you wanted to provide the
7 opportunity to do a briefing and file written
8 closing statements on the matter?

9 THE COURT: Well I would love to have
10 argument, but I can't see this group getting done
11 by three o'clock on an argument.

12 MR. DeGRANDY: Your Honor, I absolutely agree.

13 THE COURT: That's stretching the imagination.

14 MR. DeGRANDY: That's why I suggested written
15 briefs.

16 THE COURT: I would prefer
17 simultaneously-written briefs.

18 MR. DeGRANDY: When is your pleasure?

19 THE COURT: What about Friday?

20 MR. DeGRANDY: Sure.

21 THE COURT: Friday noon?

22 MR. COFFEY: Yes, sir.

23 MR. DeGRANDY: Could you give us Friday 5:00,
24 that would be good.

25 THE COURT: Friday noon is better for me.

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MR. DeGRANDY: Yes, sir.

(The proceedings were adjourned at 2:50 p.m.)

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CERTIFICATE OF REPORTER

STATE OF FLORIDA)
COUNTY OF LEON)

I, SARAH B. GILROY, Registered Professional Reporter,
certify that the foregoing proceedings were taken before
me at the time and place therein designated; that my
shorthand notes were thereafter translated under my
supervision; and the foregoing pages numbered 1 through
390 are a true and correct record of the aforesaid
proceedings.

I further certify that I am not a relative, employee,
attorney or counsel of any parties, nor am I a relative
or employee of any of the parties' attorney or counsel
connected with the action, nor am I financially
interested in the action.

DATED this 23rd day of December, 2006.

Sarah B. Gilroy
SARAH B. GILROY, RPR, CRR
Notary Public
1-800-934-9090
850-878-2221

My Commission Expires: 02-02-10
My Commission Number: DD 075718

2387

Tab 19

IN THE

United States House of Representatives

CHRISTINE JENNINGS,

Contestant,

v.

VERN BUCHANAN,

Contestee.

**NOTICE OF CONTEST
REGARDING THE ELECTION FOR
REPRESENTATIVE IN THE ONE HUNDRED TENTH CONGRESS
FROM FLORIDA'S THIRTEENTH CONGRESSIONAL DISTRICT**

**Pursuant to the Federal Contested Elections Act,
2 U.S.C. §§ 381-396**

KENDALL COFFEY
COFFEY & WRIGHT, LLP
2665 South Bayshore Dr.
PH-2, Grand Bay Plaza
Miami, FL 33133
(305) 857-9797

MARK HERRON
MESSER, CAPARELLO & SELF, P.A.
2618 Centennial Place
Tallahassee, Florida 32308
(850) 222-0720

DONALD B. VERRILLI, JR.
SAM HIRSCH
BRIAN HAUCK
JESSICA RING AMUNSON
JENNER & BLOCK LLP
601 Thirteenth Street, N.W.
Washington, DC 20005
(202) 639-6000

December 20, 2006

Introduction

1. This is an action brought under the Federal Contested Elections Act, 2 U.S.C. §§ 381-396, to contest the Florida Elections Canvassing Commission's November 20, 2006 certification that Contestee Vern Buchanan received 369 more votes than Contestant Christine Jennings in the general election for Representative in Congress from Florida's Thirteenth Congressional District. The vote totals in that certification are wrong because they do not include thousands of votes that were cast in Sarasota County but not counted due to the pervasive malfunctioning of electronic voting machines. The number of uncounted votes in the County is more than sufficient to change the result of the election. Indeed, statistical analysis based upon the actual ballots cast in Sarasota County in the November 2006 general election demonstrates that, had the votes lost to machine malfunction been included in the certification, Christine Jennings would have won the election by more than 3,000 votes.

2. On November 20, 2006, the State of Florida's Elections Canvassing Commission certified a total of 119,309 votes for Vern Buchanan and 118,940 for Christine Jennings. That certification excluded the votes of thousands of Sarasota County voters who used the County's electronic voting machines to vote in the election for the Thirteenth District seat and did not have their votes recorded. Indeed, the electronic voting machines in Sarasota County failed to record votes in this race for *more than one out of every seven voters* — nearly 15% of those who used the machines. There is no possibility that so many Sarasota County voters would have voluntarily abstained from voting in this hotly contested, high-profile race, especially in an election year when control of Congress was obviously at stake. Statistical analysis confirms that common-sense conclusion. Even more strikingly, the eyewitness accounts of hundreds of Sarasota County voters, and the contemporaneous records of the Sarasota County Supervisor of

Elections, document that the electronic voting machines in Sarasota County systematically failed to record votes cast for candidates in the Thirteenth District congressional race — particularly votes cast for Contestant Jennings.

3. By law, every polling place in Florida displays a “Voter’s Bill of Rights” stating that “Each registered voter in this state has the right to: . . . Vote on a voting system that is in working condition and that will allow votes to be accurately cast.” FLA. STAT. § 101.031(2). In the election challenged here, Sarasota County election officials failed to deliver on that promise. Indeed, the failure to count the votes of the thousands of Sarasota County voters who went to the polls and cast votes in the Thirteenth District race is a miscarriage of the electoral process that can — *and must* — be remedied. These citizens should not forfeit their constitutional right to vote because the County’s paperless electronic voting machines malfunctioned. Yet disenfranchisement is exactly what will happen unless the Florida Election Canvassing Commission’s certification is declared null and void.

4. On behalf of herself and the thousands of her fellow Florida citizens facing such disenfranchisement, Contestant Christine Jennings therefore claims the right to this congressional seat and seeks appropriate relief under the Federal Contested Elections Act. It is critically important that the United States House of Representatives — exercising its constitutional authority to “Judge . . . the Elections, Returns and Qualifications of its own Members,” U.S. CONST. art. I, § 5, cl. 1 — provide that relief promptly, by resolving that (a) there has been no valid election for the Representative in the One Hundred Tenth Congress from Florida’s Thirteenth Congressional District, (b) Contestee Vern Buchanan is not entitled to a seat as a Representative in the One Hundred Tenth Congress, and (c) the Governor of the State of Florida should be notified that the office is vacant, so that he can issue a Writ of Election to fill

the vacancy pursuant to Article I, Section 2, clause 4 of the United States Constitution and Chapter 100 of the Florida Statutes.

5. These remedies are exceptional, but they are by no means novel or precedent-setting. The House has never hesitated to grant the exact remedies requested by Contestant Jennings when circumstances warrant such relief. In contested-election cases, the House has found the contestant to be entitled to the seat on 128 occasions. And the election has been voided, and the seat vacated, in another 66 cases. *See, e.g.,* 78 CONG. REC. 1510-21 (1934) (agreeing to House Resolution 231, which provided that there had been no valid election, that the state-certified winner was not entitled to a seat, and that the Speaker of the House should notify the governor of the vacancy). Likewise, Florida law provides for analogous remedies. *See, e.g.,* FLA. STAT. § 102.1682(1) (providing for entry of a “judgment of ouster” against the contestee); *Craig v. Wallace*, 2 FLA. L. WEEKLY SUPP. 517a (2d Jud. Cir., Leon County 1994) (setting aside election results and requiring a new election for state representative because irregularities prevented votes from being properly cast on three Votomatic machines).

6. The current election result in Florida’s Thirteenth District cannot stand. The voters of the Thirteenth District — all of the voters, including those disenfranchised by machine failure — should decide the outcome, and the proper remedy is therefore to hold a new election in the district as promptly as possible. The resolution that Contestant Jennings requests here will ensure that the will of the people of Florida’s Thirteenth Congressional District is respected, and will restore the confidence of the electorate, which has been badly fractured by this machine-induced debacle.

Grounds for Contesting the Election

7. On November 7, 2006 (“Election Day”), the State of Florida conducted an election for numerous offices, including Representatives in Congress. Early voting and voting by absentee ballot were permitted for this election (as for all elections in Florida).

8. Both for early voting (from October 23 to November 5) and for Election Day voting (on November 7), Sarasota County made use of an electronic voting system, called the “iVotronic” touch-screen voting system, manufactured by Election Systems & Software, Inc. (“ES&S”), a privately held corporation. Sarasota County does not use the iVotronic electronic voting system (or any other electronic voting machines) for absentee balloting. For absentee balloting, Sarasota County uses paper ballots read by optical-scanning equipment.

9. The first unofficial results reported on November 8, 2006 for the Thirteenth District congressional race showed that in Sarasota County, there were 58,534 votes for Buchanan, 65,367 votes for Jennings, and 18,383 undervotes. The term “undervote” describes a situation in which a voter cast ballots for other candidates or ballot measures but did not register a vote for the particular office. *See* FLA. STAT. § 97.021(37).

10. On November 13, 2006, the Elections Canvassing Commission ordered a machine recount for the race pursuant to Section 102.141(6), Florida Statutes, because the difference in votes recorded for Buchanan and for Jennings was less than one half of one percent of the total votes recorded district-wide.

11. On November 15, 2006, the Honorable Sue M. Cobb, Florida Secretary of State, released the results of the machine recount and ordered a mandatory manual recount pursuant to Section 102.166(1), Florida Statutes, because the difference in votes cast for Buchanan and for Jennings was less than one fourth of one percent district-wide.

12. As anticipated, neither the machine recount nor the manual recount altered the number of congressional undervotes recorded on the iVotronic system in Sarasota County because merely “recounting” electronic ballots, unlike paper ballots (or absentee, overseas, or provisional votes), is inevitably a meaningless exercise. The machine “recount” consists merely of comparing the counters on the precinct tabulators with the overall election returns, and the manual “recount” consists simply of printing out the ballot-image reports from the malfunctioning iVotronic system and counting by hand the ballot images that recorded no choice for the particular race in question. *See* FLA. STAT. §§ 102.141(6)(b), 102.166; FLA. ADMIN. CODE Rule 1S-2.031.

13. By November 18, 2006, county canvassing boards in the three counties wholly contained in Florida’s Thirteenth Congressional District (DeSoto, Hardee, and Sarasota) and the two counties partly contained in the district (Charlotte and Manatee) had officially certified their election results and filed them with Florida’s Division of Elections. On November 20, 2006, Florida’s Elections Canvassing Commission, having compiled the official results from those five counties, certified the election returns and declared that Contestee Buchanan had been elected to Congress.

14. The official results from the five counties were as follows:

	<u>Buchanan</u>	<u>Jennings</u>
Charlotte:	4,460	4,277
DeSoto:	3,471	3,058
Hardee:	2,629	1,686
Manatee:	50,117	44,432
Sarasota:	58,632	65,487
TOTAL:	119,309	118,940

15. As required by state law, the official returns from the five counties also reported undervotes, which exhibited a sharply aberrant total for Sarasota County:

<u>Undervote</u>	
Charlotte:	225
DeSoto:	142
Hardee:	265
Manatee:	2,324
Sarasota:	18,412
<hr/>	
TOTAL:	21,368

16. Sarasota County, the one county carried by Jennings, accounted for barely half of the congressional candidates' recorded votes district-wide, but fully 86% of the district's congressional undervotes:

	<u>Buchanan</u>	<u>Jennings</u>	<u>Undervote</u>
Sarasota County:	58,632	65,487	18,412
The Four Other Counties:	60,677	53,453	2,956
<hr/>			
TOTAL:	119,309	118,940	21,368

17. The undervote total for the congressional race in Sarasota County is extremely abnormal in numerous respects, including the following:

a. A total of 88,927 ballots were cast in this race on Election Day in Sarasota County on the electronic voting machines. Jennings received 39,930 votes and Buchanan received 36,619 votes. There were 12,378 undervotes. The undervote rate on Election Day in Sarasota County was therefore an extraordinary 13.9% of the ballots cast on the electronic voting machines.

b. A total of 30,832 ballots were cast during the early-voting process in Sarasota County, on the same type of electronic voting machines. Jennings received 14,509 votes, and Buchanan received 10,890 votes. There were 5,433 undervotes. The undervote rate

in the early-voting process in Sarasota County was therefore an extraordinary 17.6% of the ballots cast. And the combined undervote percentage for early and Election Day voting on the electronic voting machines was an equally extraordinary 14.9%.

c. In vivid contrast, of the 22,613 votes cast in this race by paper absentee ballot in Sarasota County (which were recorded by optical-scanning devices, not by electronic voting machines), Jennings received 10,981 votes, and Buchanan received 11,065 votes, and there were just 566 undervotes recorded — an undervote rate of only 2.5%, which is consistent with historical norms and expectations.

d. In equally vivid contrast, the percentage of undervotes for the House of Representatives race in other counties within the Thirteenth District did not remotely approach the undervote rates for the electronic voting machines in Sarasota County. The undervote rate for this race was 2.5% in Charlotte County, 2.1% in DeSoto County, 5.8% in Hardee County, and 2.4% in Manatee County. The combined undervote percentage for these four counties was only 2.5% — one-sixth the undervote percentage recorded in Sarasota County for votes cast on electronic voting machines.

e. In addition, the undervote percentage recorded in Sarasota County for other high-profile races is a small fraction of the 14.9% undervote rate on electronic voting machines for the congressional race. For example, the undervote percentage recorded in Sarasota County for the Governor's race was 1.3% and the undervote percentage for the United States Senator's race was 1.1%.

f. Finally, the percentage of undervotes on electronic voting machines for the congressional contest in Sarasota County in 2006 is almost seven times the rate of undervotes

for the Thirteenth District congressional race in 2002 (the last midterm election), which was 2.2%.

18. In 2001, Sarasota County became the first county in the State of Florida to purchase the iVotronic voting system. The system has been used since 2001 in at least 19 separate primary, general, and local elections. In the 2006 election, Sarasota County voters were asked whether to adopt a proposed county-charter amendment requiring that as of January 1, 2008, all county voting systems provide a voter-verified paper ballot and that mandatory independent audits of election results be conducted in every election comparing hand counts to machine counts. The county adopted the proposed charter amendment with the support of 55.4% of voters, indicating that voters themselves have lost confidence that the iVotronic system is capable of correctly recording their votes. Significantly, the undervote rate for this proposed charter amendment was only 6.2%.

19. The statistical evidence alone indicates that the staggeringly large number of undervotes in Sarasota County is due to the malfunctioning of the iVotronic electronic voting machines. In fact, preliminary expert statistical analysis of the reported election results concludes there is little doubt that the use of the iVotronic machines in Sarasota County caused the extraordinarily high rate of undervotes in that county. The fact that undervote rates from the rest of the district and from absentee voters in Sarasota County were so much lower than rates from voters using the iVotronic machines in Sarasota County rules out the possibility that the extraordinarily high Sarasota County electronic undervote rate was caused by factors common throughout the district — such as voter abstention due to negative campaigning or dissatisfaction with both candidates. Evidence that such alternative explanations were causing high undervote rates would have shown up throughout the district, not in a single county, and not just on one

type of voting machine in that county. Additionally, the fact that a higher undervote rate was present on identical electronic voting machines in two different modes of voting that occurred at different times — early voting (from October 23 to November 5) and Election Day voting (on November 7) — creates an overwhelming likelihood that the problems pertain to the use of these electronic machines in Sarasota County.

20. Compared to the malfunctions of the electronic voting machines, data available thus far suggests that poor ballot design is a less likely explanation for the undervotes of this magnitude. The most egregious examples of voter confusion caused by ballot design in other races have not yielded undervote percentages remotely as high as those present in the Thirteenth District congressional race. For example, with the infamous “butterfly ballot” used in Palm Beach County, Florida in the 2000 presidential race, fewer than 1% of the voters erroneously cast their ballots for the third-party candidate Pat Buchanan, and 4% of the voters erroneously cast “overvotes” by selecting two or more candidates. If the ballot design here is in fact capable of disenfranchising nearly 15% of the electorate, that alone merits close attention from this House.

21. The poor ballot design’s most likely role here was as a contributing factor that helped to trigger a software “bug” in the machines. Page 2 of the Sarasota County iVotronic ballots contained *both* the two-candidate race for Representative in Congress and the seven-candidate race for Governor — nine ballot lines in total. No other page of Sarasota County’s electronic ballot crammed so many candidates onto a single screen. Similarly, Page 3 of Charlotte County’s iVotronic ballots contained both the seven-candidate gubernatorial field and the two-candidate race for Attorney General. And, just as in Sarasota County, this design triggered a bizarre undervote pattern, with a 0.8% undervote rate in the gubernatorial election

and an extraordinary 24.7% undervote rate in the Attorney General election that was on the same screen. (In Sarasota County, the equivalent undervote figures for the two contests compressed onto one page were 1.3% and 14.9%.) In other counties around Florida, iVotronic ballot screens showing nine candidates exhibited a similar pattern, with low undervote rates in the multi-candidate gubernatorial election and peculiarly high undervote rates in the two-candidate election that shared the same screen.

22. Some have theorized that this ballot design confused voters — especially “straight-ticket” voters who may have skimmed rapidly through the ballot, looking only for candidates from one political party. If this is true, the magnitude of the undervote that this problem caused is still startling. But based on the data available to date, it appears a less likely explanation for the undervote than the machine malfunction itself. According to this theory, the “confused voter” (a) selected his party’s gubernatorial candidate while overlooking the other contest on the same screen, (b) then moved quickly on to the next screen, and (c) at the end of the voting process, when faced with the “Summary Ballot” review screen, ignored the warning that stated in red letters, “No Selection Made” for “U.S. Representative in Congress.” Only the most egregious ballot-design flaw would have so confused the intelligent voters of Sarasota and Charlotte Counties. And it is important to note that the pattern of low undervote rates in the gubernatorial contest and extraordinarily high undervote rates in the two-candidate contest displayed on the same screen held true regardless of whether the two-candidate contest appeared on the screen immediately above the gubernatorial field (as in Sarasota County) or immediately below the gubernatorial field (as in Charlotte and other counties). That the undervote rate was not at least somewhat elevated for *both* offices suggests that this is (based on current data) a less likely explanation than the machine flaw; were ballot design the sole cause, one would not

expect the undervote rate to be elevated solely for the top-of-the-screen contest in Sarasota County and for the bottom-of-the-screen contest in the other counties. Indeed, implicit in the “confused voter” theory is the notion that Sarasota County voters read ballot screens from the *bottom up* while voters in Charlotte and the other counties read ballot screens from the *top down*, so that, in either case, the “confused” voters spotted their preferred gubernatorial candidate first, and then quickly moved on to the next screen, inadvertently bypassing the other contest (the top-of-the-screen congressional race in Sarasota, the bottom-of-the-screen Attorney General’s race elsewhere). While no empirical support has been found for this notion, evidence that it could have caused such unusually high undervotes would be extremely troubling. Regardless, the pattern of undervotes, combined with the actual ballot designs used in the various Florida counties, suggests that an error or irregularity in the machines’ source code tends to convert into undervotes some of the votes actually cast for candidates in the two-candidate field, whenever that field shares a screen with too many other ballot lines. Like any computer-based system, an electronic voting touch-screen is most likely to malfunction when filled to capacity.

23. As powerful as all the statistical evidence is, it is far from the only indication that thousands of votes in Sarasota County simply were left out of the certified election results for the congressional race because of the failure of paperless electronic voting machines. A variety of contemporaneous sources document widespread problems with the iVotronic electronic voting system in Sarasota County. These documents, including both the statements of voters and contemporaneous records maintained by the Sarasota County Supervisor of Elections, identify a consistent pattern of voter difficulty in having votes recorded in the House of Representatives race — and not in other races on the ballot.

24. Contestant has obtained affidavits memorializing the eyewitness accounts of hundreds of Sarasota County voters attesting to their difficulties attempting to cast a vote for Christine Jennings in early voting and on Election Day on the iVotronic electronic voting system in Sarasota County. The following statements are representative of the memorialized eyewitness accounts of these hundreds of voters:

- “I went through the ballot making my selections on the iVotronics touch screen voting machine and took my time making sure that I voted in every race. I am certain that I cast a vote for Christine Jennings. When I reviewed the ballot at the end of the voting process, I noted that the race for the 13th congressional district . . . indicated that I had made no selection. I double-touched the 13th Congressional District race and again cast my vote for Christine Jennings. . . . I have more than 15 years experience in selling computer systems, five of those years are in selling touch screen systems. Based on my experience, I believe there was a software bug in the voting machine software causing the software not to register the touch.”
- “I took a sample ballot, which I had previously filled out and my intention to vote in every race. I believed that I voted for Christine Jennings but I came to the review screen it said I had not cast a vote in the Congressional race. . . . I used the back arrow and it took me back to Congressional race and I recorded a vote for Christine Jennings.”
- “When my husband and I voted on the iVotronics touch screen voting machines, I was told by a poll worker to be sure and check the District 13

Congressional race because several voters, even at that early hour, had complained that they had voted for Christine Jennings, but the summary page did not reflect their votes for Christine Jennings.”

- “When I voted on the iVotronics touch screen voting machine I touched the screen for Christine Jennings and it showed I voted for Christine Jennings. But when I reviewed the summary page at the end of the ballot, it did not show a vote for Christine Jennings or anyone else.”
- “There was no warning or mention of any problems however, I was aware there may be a problem with the Congressional vote based on various media reports. I went through the ballot and specifically remember voting for Christine Jennings. When I arrived at the review screen, there was no candidate selected for the Congressional vote. I called a poll worker over and explained the situation and she told me that I did not ‘press hard enough’ when selecting the vote and I then returned to the vote screen and recast my ballot, I then confirmed it on the review screen.”
- “When I voted on the touch screen voting machine I touched the screen voting for Christine Jennings and when I reached page 15, the summary page, it indicated that I had not voted for Jennings. I immediately called this to the attention of a poll worker who showed me how to go back and vote for Jennings. I followed her instructions and again voted for Jennings. It did appear on the summary screen this time and I hope was duly registered.”

- “When I voted on the iVotronics touch screen voting machine I touched screen and voted for Christine Jennings for U.S. Congress Florida District 13. When I reviewed my ballot before hitting the red button and actually voting, I saw the review screen did not show a vote for Christine Jennings. I was afraid I would lose my other votes if I tried to go back and correct the problem, so I then went ahead and cast my ballot without confirming that the machine had registered my vote for Christine Jennings.”
- “I attempted to vote for Christine Jennings in the District 13 race and experienced the following difficulties: I was well-aware of the difficulties in the early voting in District 13 race and so I carefully voted in each election on the ballot, including that race. When I got to the review page, my vote for Christine Jennings was not reflected. I called out to a poll worker to alert them that my vote in the District 13 race had not been recorded. *The poll worker who came to assist me informed me that the same thing had happened to her when she had voted earlier. She guided me back to the District 13 page and I pressed the touch screen again to reflect my vote for Christine Jennings. The poll worker then guided me back to the review page where my vote in the District 13 race was reflected and I then pressed the vote button.*”
- “When I voted on the iVotronics touch screen voting machine, I went through the ballot to vote. I was being careful because I seemed to have to press hard for my votes to register. In addition, I knew to be careful because my wife had been to vote previously and had overheard some

women who had a problem voting discussing their problems with the machines. They were different machines. A neighbor also told me that she had encountered six different people who had a problem with the voting machines. When the review sheet came up it said that I had not voted in the Congressional race even though I knew I had voted for Christine Jennings. I went back and registered my vote again and this time it indicated that I had voted for Ms. Jennings on the review screen.”

- “When I voted with the stylus on the iVotronics touch screen voting machine, I am absolutely sure the box for Christine Jennings showed the X. On the Review screen, however, Christine Jennings’ name showed but the box beside her name was blank. I clicked on the review ballot and corrected my vote and it then showed an X beside her name. After that, I registered my vote with the Red button at the top of the screen. After voting, I asked my husband if anything unusual happened when he voted (on a different machine). He told me that when he reviewed his ballot, the box by Christine Jennings’ name was blank and he had to correct it. At that time, I reported this to a poll worker named Charlie, who said he would report it.”
- “I had heard prior to going to the poll that there were problems with the voting machines. When I went to vote, the poll worker also warned me that there had been problems with the machine registering the Congressional race. When I voted on the iVotronics touch screen voting machine, I voted for Christine Jennings. The screen indicated I had voted.

Yet when I got to the end, the review page indicated that I had not voted in the Congressional race. I went back and voted for Ms. Jennings. This time my vote did register on the voting page.”

- “When I voted on the iVotronics machine I was being very methodical. When I voted in the Buchanan-Jennings race, I specifically voted for Christine Jennings and checked to make sure that the box was checked before I went to the next page. When I got to the review screen it reflected no vote was cast for the Congressional race, but both candidates’ names were shown. All of my other selections were properly recorded. I touched where it said no vote had been cast and it took me back to the Buchanan-Jennings race. I then re-voted for Christine Jennings and carefully rechecked the review page three times. I then pushed the vote button. No report was made to the poll worker. Prior to voting, the poll worker recommended that I check the review page before casting my final ballot. I am a registered Republican and I believe these machines failed democracy.”
- “I voted on the iVotronics machine I took my time to be sure I did not make any errors. When I voted in the Buchanan-Jennings race, I specifically voted for Christine Jennings and checked to make sure the box was checked before I went to the next page. When I got to the review screen it reflected no vote was cast for the Congressional race. All of my other selections were properly recorded. I touched where it said no vote

had been cast and it took me back to the Buchanan-Jennings race. I then re-voted for Christine Jennings and I then pushed the vote button.”

- “When I voted on the iVotronics touch screen voting machine I touched the screen for Christine Jennings and it showed I voted for Christine Jennings. But when I reviewed the summary page at the end of the ballot, it not only failed to show a vote for Christine Jennings, but the only name to appear on the review page was Christine Jennings, next to a blank box indicating no vote had been cast. I called a poll worker over and explained what had happened and the poll worker pulled back the page for the Congressional race. I revoted for Christine Jennings, and my vote appeared to register in my second review of the summary screen.”
- “When I voted on the touch screen voting machine I encountered two problems with the machine. First, after I had voted for Christine Jennings on the top of the second screen, when I pushed my selection for Jim Davis for Florida Governor next, the ‘X’ on the computer screen came up indicating that I had voted for Charlie Crist. I called a poll worker, advised her of the problem and she showed me how to change my vote to Jim Davis. I then proceeded to vote on every race I saw on the ballot. When I got to the review screen, it showed Christine Jennings name, but unlike all the other names and races on the review screen, there was no X in the box next to Christine Jennings’ name. I am certain that I had initially cast a vote for Christine Jennings as my two main purposes in voting were to vote for Christine Jennings for Congress and Jim Davis for

Florida Governor. I again called a poll worker who told me to hold my finger down on the box next to Christine Jennings name on the review screen until the X came up. I did so and then pushed the 'Vote' button."

- "When I arrived at the polls I was warned by a poll worker that some votes from 'page 2' were not being registered. I waited on line for 45 minutes to vote and when I returned home, informed my wife of what I had been warned."
- "I had heard earlier media reports and was aware that there were some problems with the machines. When I arrived, I specifically asked if there had been problems and I was told no issue or problems had arisen. I voted for Christine Jennings on a touch screen and when I arrived at the review page the Congressional vote was left blank. I called a poll worker over at that time and she showed me how to move back and I re-cast my vote for Christine Jennings. On the final review page, I confirmed my vote was cast. I approached a poll worker to complain about the situation and filled out a complaint card."

25. Poll watchers also reported their observations of widespread occurrences of voters being unable to get their votes in the congressional race properly recorded by the iVotronic electronic voting machines. One poll watcher reported as follows: "There were seven iVotronics touch screen voting machines at the precinct where I was watching the voters. Two of the iVotronics touch screen voting machines stopped working while I was watching the voters. After an hour or so, one was repaired and put back into service. The other was put back

into use without repair except that the poll workers instructed voters to hold their finger on the touch screen for more time, rather than just touch [the] screen to get the vote to register. I heard several voters tell poll workers the iVotronics touch screen voting machine was not recording their vote.”

26. Contemporaneous official “Incident Report Forms” of the Sarasota County Supervisor of Elections likewise document widespread occurrences of voters having great difficulty in getting the iVotronic electronic voting machines to record their votes in the Thirteenth District race. Numerous such forms noted that iVotronic electronic voting machines were “not recording votes.” One report from a particular precinct noted that a “voter voted on screen — didn’t show up on review . . . asked poll worker for help . . . [c]ancelled ballot and moved to another machine,” and went on to observe “more than one [voter] with trouble on machine.” Another incident report observed that “[e]very other voter is complaining about the Christine Jennings contest not coming up.” Indeed, these incident reports document multiple instances of frustrated voters telling election officials at the polling places that “voting machine[s] would not let her vote for Jennings.”

27. Other contemporaneous official forms maintained by the Sarasota County Supervisor of Elections similarly document that iVotronic electronic voting machines used in the county were not recording the votes that voters had cast. Machines were taken out of service on Election Day because they were “slow to respond to touch” or “required a hard/extended touch before [a] vote was recognized,” or because they were “not recording some votes [and] the touchscreen was not working properly — hard to record vote, needed to push hard and juggle to record vote,” or because they were “not accepting votes.” Technical-support personnel reported receiving “several complaints that voters make selections that do not appear on the summary

screen” and that “the selection has to be highlighted . . . two or three times before the summary page reflected the suggestions.” Other reports indicate that “voters reported making a selection but the selection did not appear on the review screen,” requiring further corrective action by the voter, and that particular machines “miss[] selections on some pages.” One report by a Sarasota County technical-support person indicated that a particular electronic voting machine “will not register votes no matter how hard you press screen.”

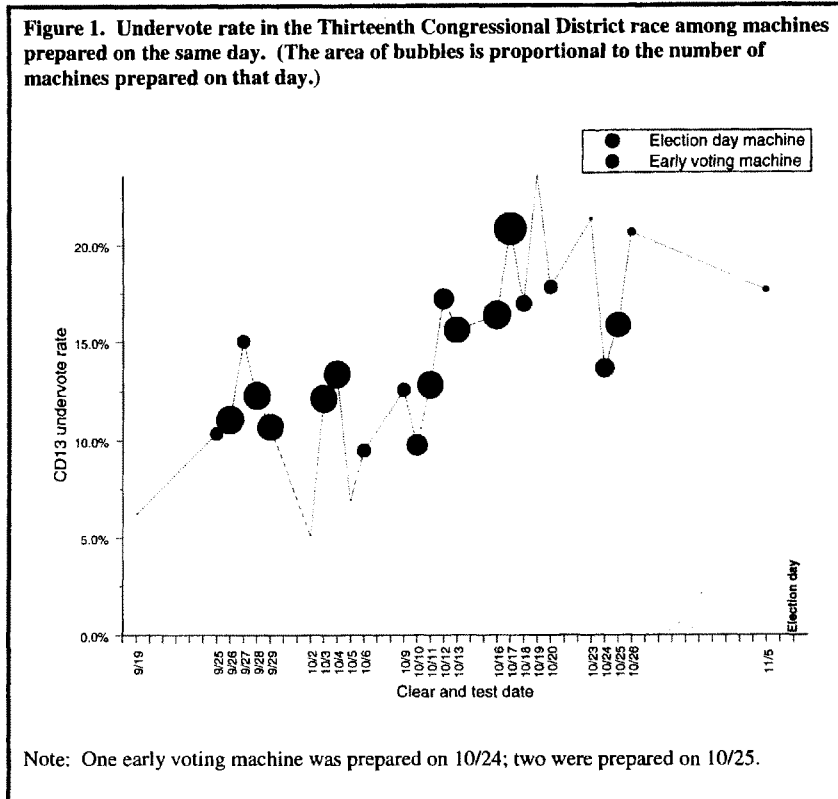
28. Significantly, the records of the Sarasota County Supervisor of Elections document that election officials were on clear notice, as a result of the extreme difficulties many voters encountered during the early-voting phase, that the iVotronic electronic voting machines were malfunctioning with respect to the Thirteenth District congressional race. Nevertheless, the County election officials do not appear to have taken *any* steps to correct the serious machine problems in advance of Election Day.

29. The eyewitness accounts of the voters, poll watchers, and election workers documented here, as well as hundreds of others like them, attest to pervasive difficulties in the recording of votes in the Thirteenth District congressional race. Although many voters believed that they were able eventually to overcome the machine difficulties and cast a recorded vote for Contestant Christine Jennings, the problems the iVotronic system exhibited in recording the votes of these and thousands of other voters provide substantial grounds for doubting whether the votes were in fact counted. The information voters see on the touch-screen of an electronic voting machine when they cast their votes is stored in the machine’s temporary, volatile computer memory. A permanent record of a vote is made only when — upon pressing the red “Vote” button above the screen — the voter’s recorded preference is transferred from the computer’s temporary volatile memory to its permanent nonvolatile memory. If, as the statistical

evidence suggests is overwhelmingly likely, a software “bug” or other malfunction disrupts or prevents the transfer of the recorded vote from temporary to permanent memory, the voter may well see a vote cast for Jennings on his or her review screen even though no permanent record of the vote is ever recorded.

30. The probability of machine error finds support in a statistical analysis conducted by Professor Charles Stewart III, the chair of the Political Science Department at the Massachusetts Institute of Technology (MIT). Professor Stewart’s analysis indicates that the date when an iVotronic machine was “cleared and tested” by Sarasota County election workers or their contractors (as reflected by “Event Code 01” in the machine’s audit log) correlates strongly with the machine’s undervote rate: The machines prepared in the final days before the deadline for completing all such preparations exhibited the highest congressional undervote rates. And another strong correlation exists between the number of machines “cleared and tested” on a given date and the undervote rate: As the County’s staff or consultants got busier, clearing and testing more machines on a single day, the congressional undervote rate climbed.

31. The following graph demonstrates these facts. It shows the undervote rates for the iVotronic machines that were prepared on each date leading up to the election. The area of each data “bubble” is proportional to the number of machines prepared that day, so a large circle indicates a busy day of machine preparation. Dark bubbles are days when Election Day machines were primarily prepared; light bubbles are days when early-voting machines were primarily prepared.



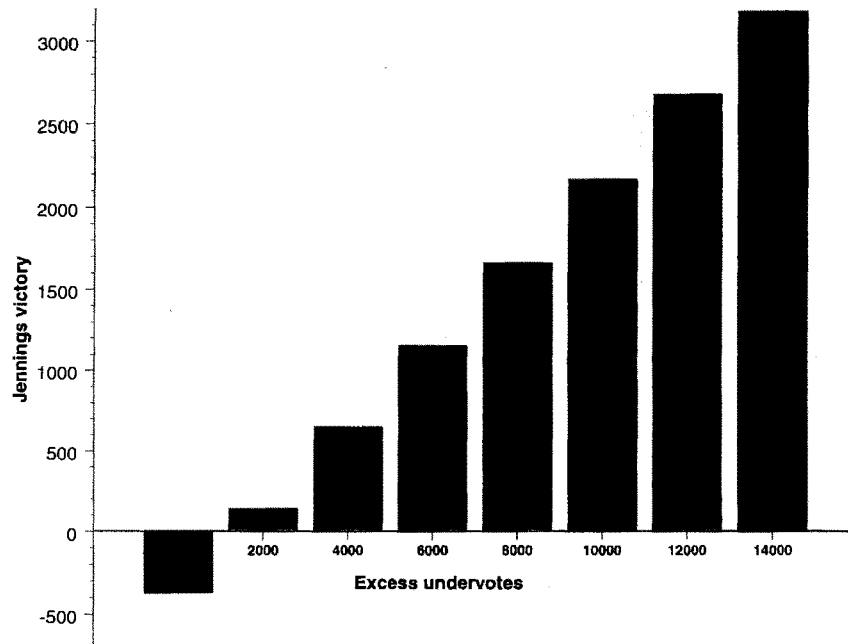
As this graph shows, the congressional undervote rates were below 7% for machines set up on only three days — September 19, October 2, and October 5, 2006. On each of those three days, the Sarasota County election workers cleared and tested only one machine. By contrast, the County’s busiest day of machine preparation — October 17, 2006 — involved setting up 158 machines, and on Election Day those 158 machines generated a congressional undervote rate of nearly 21%.

32. Professor Stewart also has analyzed the effect of machine-induced failure on the outcome of the election for the Thirteenth District congressional seat. Based on his study of patterns in the undervote rates for other statewide or countywide races in Sarasota County, Professor Stewart estimated that the number of “excess” undervotes caused by the use of the iVotronic machines in Sarasota County was approximately 14,000. This is a conservative estimate, as it suggests that slightly more than 3% of the Sarasota County voters intended not to vote for either congressional candidate, which is more than double the actual undervote rate found in the November 2006 race for U.S. Senator or Governor. Professor Stewart’s estimate was corroborated by the expert for the iVotronic machines’ manufacturer, who wrote that he was “90 percent confident that *between 14,322 and 14,896 voters in Sarasota County were suppressed from voting in the thirteenth district race*” (emphasis in original).

33. Using the ballot-image logs for every individual ballot cast electronically in the Sarasota County November 2006 general election — and studying voters’ preferences not only for the congressional race but also for the statewide races for U.S. Senator, Governor, Attorney General, Chief Financial Officer, and Agriculture Commissioner — Professor Stewart determined that the voters whose congressional ballots were recorded as undervotes likely supported Contestant Jennings over Contestee Buchanan by a margin of approximately 63% to 37%. So if the 14,000 “excess” congressional undervotes had actually been recorded and properly tallied as votes for one or the other congressional candidate, Contestant Jennings would have won the election by more than 3,000 votes. Indeed, even if machine malfunction caused only 1,500 “excess” undervotes — less than 10% of the total congressional undervotes reported in Sarasota County — properly tabulating those 1,500 congressional ballots would have reversed the outcome of the election, with Contestant Jennings prevailing over Contestee Buchanan.

34. The following bar graph shows the projected results, for various levels of excess undervote, beginning with zero and working in 2,000-vote increments up to 14,000. The graph shows the estimated victory margin for Jennings, given different values of excess undervotes. The very first bar, which shows zero excess undervotes, is the situation under the official certification, which declared Buchanan the victor by 369 votes.

Figure 2. Estimated size of Jennings victory, with the allocation of different numbers of excess undervotes.



State Court Litigation

35. On November 20, 2006, Contestant Christine Jennings filed a complaint under Florida's election-contest statute, Section 102.168, Florida Statutes, in the Circuit Court of the Second Judicial Circuit, in Leon County, Florida. On November 28, 2006, Contestant's case was consolidated with a second election-contest action brought by a bipartisan group of eleven individual voters represented by counsel from four public-interest groups. The defendants in these consolidated suits include Florida's Elections Canvassing Commission, the Secretary of State, the Director of Florida's Division of Elections, the Sarasota County Supervisor of Elections, the Sarasota County Canvassing Board, congressional candidate Vern Buchanan, and Election Systems & Software, Inc. ("ES&S"), the manufacturer of the iVotronic voting system.

36. In the trial-court proceedings Contestant and the voter plaintiffs have requested expedited discovery of materials necessary to establish that thousands of undervotes were caused by machine malfunctions in the iVotronic voting system. Determining the precise cause of the irregularities requires that all parties — including *both* candidates — be allowed to inspect and test a sample of iVotronic machines and related equipment, and especially the ES&S source code and other software, all of which are in the possession of the defendants in the state-court action.

37. Thus far, the state and county election officials who are defendants in that action have invoked the trade-secret privilege to protect the business interests of ES&S and have resisted production of the materials requested by Contestant and the voter plaintiffs, thereby denying them the critical evidence they need to determine conclusively the cause of the pervasive malfunctioning of the iVotronic voting system in this election. On December 19 and 20, 2006, the court held an evidentiary hearing on whether Jennings and the voter plaintiffs have a "reasonable necessity" for production of the software and hardware that ES&S purports are

privileged as “trade secrets.” To expedite matters, Jennings took the extraordinary step of moving for a protective order to assuage any concerns ES&S might have about its purported trade secrets being disclosed to persons uninvolved with the litigation, including any of ES&S’s commercial competitors. The trial court has not yet ruled on Jennings’s and the voter plaintiffs’ motions to compel production of the software and hardware.

38. Throughout the state-court litigation, Contestant Jennings has gone to great lengths to ensure the speedy resolution of the election contest. For example, on the very day she filed her state-court complaint, she also filed a motion to compel expedited discovery of the iVotronic hardware and software; but that motion was denied. Another example was the December 7 filing by Jennings and the voter plaintiffs of a joint notice setting a case-management conference and requesting prompt entry of a scheduling order consistent with a late-January trial date.

39. Throughout the litigation, the state and county election officials defending the action have pursued a two-pronged strategy: (1) deny plaintiffs access to the software and hardware whose malfunction lies at the very core of the case; and (2) always blame the “confused” voters and absolve the machines. Emblematic of the second prong of that strategy are the interrogatories that the state defendants propounded on December 15, 2006 to each of the individual voter plaintiffs, apparently in response to their complaint, which described their difficulties on Election Day with the iVotronic machines:

[Interrogatory No.] 15. Do you wear glasses, contact lenses, or hearing aids? If so, who prescribed them, when were they prescribed, when were your eyes or ears last examined, and what is the name and address of the examiner?

[Interrogatory No.] 16. Did you consume any alcoholic beverages or take any drugs (prescribed or not) or medications within 12 hours before the time you voted in the November 2006 general election? If so, state the type and amount of

alcoholic beverages, drugs (prescribed or not), or medication which were consumed, and when and where you consumed them.

Conclusion

40. As a result of the failure of the iVotronic electronic voting system to record all votes in the Thirteenth District congressional race in Sarasota County, thousands of votes cast in that race were not included in the vote totals certified by Florida's Elections Canvassing Commission on November 20, 2006. Statistical analysis demonstrates that including those votes in the certified totals would have reversed the election's outcome, putting Contestant Jennings more than 3,000 votes ahead of Contestee Buchanan. Contestant Jennings thus is entitled to the seat of Representative in the One Hundred Tenth Congress from Florida's Thirteenth Congressional District.

41. Therefore, under the Federal Contested Elections Act, 2 U.S.C. §§ 381-396, Contestant Christine Jennings is entitled to prevail in this contest action and should be awarded all appropriate relief.

Prayer for Relief

Wherefore, Contestant Christine Jennings prays that the United States House of Representatives:

1. Ensure that all evidence related to the November 2006 general election in Sarasota County is preserved.
2. Ensure that both the Contestant and the Contestee have full and fair access — whether through discovery in the state-court election contest or in this proceeding — to the State of Florida's and Sarasota County's ES&S iVotronic hardware, software, and source code, as needed to uncover the true causes of the elevated undervote rate at issue here.

3. Resolve that the Florida Elections Canvassing Commission's November 20, 2006 certification of the returns for the 2006 general election for Representative in Congress from Florida's Thirteenth Congressional District is null and void.

4. Resolve that Contestant Christine Jennings is entitled to a seat as the Representative in the One Hundred Tenth Congress from Florida's Thirteenth Congressional District or, in the alternative, resolve that (a) there has been no valid election for the Representative in the One Hundred Tenth Congress from Florida's Thirteenth Congressional District, (b) Contestee Vern Buchanan is not entitled to a seat as a Representative in the One Hundred Tenth Congress, and (c) the Governor of the State of Florida should be notified that the office is vacant, so that he can issue a Writ of Election to fill the vacancy pursuant to Article I, Section 2, clause 4 of the United States Constitution and Chapter 100 of the Florida Statutes — thereby allowing the people of Florida's Thirteenth Congressional District to freely vote for Contestant Christine Jennings or Contestee Vern Buchanan and to have those votes accurately tabulated, counted, and reported.

5. Reimburse the State of Florida for half the expenses it incurs in holding a special election to fill the vacancy.

6. Pursuant to 2 U.S.C. § 396, reimburse from the applicable accounts of the House of Representatives the Contestant's and the Contestee's reasonable expenses for this contested-election case, including reasonable attorneys' fees, upon such party's verified application, accompanied by a complete and detailed account of the party's expenses and supporting vouchers and receipts.

IN THE

United States House of Representatives

CHRISTINE JENNINGS,

Contestant,

v.

VERN BUCHANAN,

Contestee.

**CONGRESSMAN VERN BUCHANAN'S
SUPPLEMENTAL APPENDIX IN SUPPORT OF
MOTION TO DISMISS ELECTION CONTEST**


GLENN T. BURHANS, JR.
HAYDEN R. DEMPSEY
SEANN M. FRAZIER
GREENBERG TRAUIG, P.A.
101 EAST COLLEGE AVENUE
TALLAHASSEE, FLORIDA 32301
(850) 222-6891

*Counsel for Contestee
Congressman Vern Buchanan*

APRIL 6, 2007

Congressman Vern Buchanan respectfully submits this supplemental appendix containing certified copies of the below documents from the Florida Department of State in further support of his *Motion to Dismiss Election Contest*.

1. Audit Report of the Elections Systems and Software, Inc.'s, iVotronic Voting System in the 2006 General Election for Sarasota County, Florida (February 2007)
2. Software Review and Security Analysis of the ES&S iVotronic 8.0.1.2 Voting Machine Firmware (February 23, 2007)



GLENN T. BURHANS, JR.
HAYDEN R. DEMPSEY
SEANN M. FRAZIER
GREENBERG TRAUIG, P.A.
101 EAST COLLEGE AVENUE
TALLAHASSEE, FLORIDA 32301

Counsel for Congressman Vern Buchanan

2419

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing *Supplemental Appendix in Support of Motion to Dismiss Election Contest* has been served this 6th day of April, 2007 as indicated below:

Counsel for Christine Jennings:

Mark Herron
MESSER CAPARELLO & SELF, P.A.
2618 Centennial Place
Tallahassee, Florida 32308
(850) 222-0720
mherron@lawfla.com

Via Hand Delivery

Kendall Coffey
COFFEY & WRIGHT, LLP
2665 South Bayside Drive
PH-2, Grand Bay Plaza
Miami, Florida 33133
(305) 857-9797
kcoffey@coffeywright.com

Via U.S. Mail

Sam Hirsch
Jenner & Block
601 Thirteenth Street, N.W.
Suite 1200 South
Washington, DC 20006
Telephone (202) 637-6397
Facsimile (202) 639-6066

Via U.S. Mail



GLENN T. BURHANS, JR.

2420

Tab 1

40 66. 2610

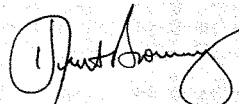
A black and white copy of this document is not official

**STATE OF FLORIDA
DEPARTMENT OF STATE
Division of Elections**

I, Kurt S. Browning, Secretary of State of the State of Florida, do hereby certify that the attached is a true and correct copy of the Audit Report of The Elections Systems and Software, Inc.'s, IVotronic Voting System in the 2006 General Election for Sarasota County, Florida (February 2007), as shown by the records of this office.



Given under my hand and the Great Seal of the State of Florida, at Tallahassee, the Capitol, this the 28th day of February, A. D. 2007.


Secretary of State

DSDE 99 (3/03)

The original document has a reflective line mark in paper. Hold at an angle to view when checking.

If photocopied or chemically altered, the word "VOID" will appear

STATE OF FLORIDA DEPARTMENT OF STATE DIVISION OF ELECTIONS

**AUDIT REPORT
OF
THE ELECTIONS SYSTEMS AND SOFTWARE, INC.'S,
IVOTRONIC VOTING SYSTEM
IN THE 2006 GENERAL ELECTION
FOR SARASOTA COUNTY, FLORIDA
(February 2007)**



Florida Department of State
KURT S. BROWNING
Secretary of State

Florida Department of State
Division of Elections
Room 316, R.A. Gray Building
500 South Bronough Street
Tallahassee, Florida 32399-0250

EXECUTIVE SUMMARY

On November 9, 2006, pursuant to authority under sections 101.5607(1), and 101.58(2), Florida Statutes, the Secretary of State for Florida directed the Division of Elections/Bureau of Voting Systems Certification to conduct an audit of the 2006 General Election held in Sarasota County. The purpose of the audit focused on an examination of the iVotronic Direct Recording Electronic (DRE) touch screen voting device and attendant elections procedures with regard to the U.S. Congressional District 13th race. See Appendix A (Letters to Sarasota County Supervisor of Elections, Kathy Dent; November 9, 11, and 16, 2006).

The audit team created an audit plan. See Appendix B (Audit Plan). The audit plan consisted of three major components: 1) the parallel tests of the Sarasota County's Election Systems and Software, Inc., iVotronic Voting Systems, Release 4.5 Version 2, 2) an independent source code review of the iVotronic Voting System Firmware, and 3) an examination of Sarasota County Supervisor of Elections' Office's election conduct, procedures, results, and certified voting system. A number of audit plan activities were also addressed through activities arising from the machine and manual recount processes triggered under sections 102.141(6), and 102.166, Florida Statutes, in the U.S. Congressional District 13th race. With the exception of the independent source code review, the audit occurred on the premises of the Sarasota County Supervisor of Elections' offices and its offsite operational warehouse facility in Sarasota County.

The summary results of the audit are as follows:

- *Parallel Tests.* The audit team conducted parallel tests on November 28, 2006, and December 1, 2006 of the Election Systems and Software, Inc., iVotronic Voting System, Release 4.5 Version 2. The audit team concluded that the iVotronic direct recording devices correctly captured the voters' selections and accurately recorded the votes cast as displayed to the voters on the review touch screens. The results were issued on December 18, 2006. See Appendix C, Parallel Test Summary Report.¹
- *Independent Source Code Review of the iVotronic Voting System Firmware.* In December 2006, the Florida Department of State contracted with Florida State University and its Security Analysis in Information Technology (SAIT) Laboratory to conduct an independent software review and security analysis of the firmware for the Election Systems and Software, Inc.'s iVotronic Voting Systems, Release 4.5 Version 2.² The FSU/SAIT Laboratory issued its findings in a separate final report, entitled "Software Review and Security Analysis of the ES&S iVotronic 8.0.1.2 Voting Machine Firmware, February 2007."³ The project team found that the iVotronic firmware, including faults identified, did not cause or contribute to the U.S. District Congressional 13 Race undervote.

¹ Also available at: <http://election.dos.state.fl.us/index.html>

² Florida State University Statement of Work "Software Review and Security Analysis of the ES&S iVotronic 8.0.1.2 Voting Machine Firmware", 2/20/2007 available at: <http://election.dos.state.fl.us/index.html>

³ "Software Review and Security Analysis of the ES&S iVotronic 8.0.1.2 Voting Machine Firmware, February 2007"; available at <http://election.dos.state.fl.us/>

- *Examination of Sarasota County's Elections Office Election Conduct, Procedures Results, and Certified Voting System.* The audit team also examined elections procedures and practices, and the certified voting system. The examination covered election setup, procedures, voter signature count, precinct zero and result tapes, sample deployed touch screens, central county system, iVotronic EEPROMs, unity system, incident reports, security procedures, work instructions, absentee and provisional vote accumulation, ballot images from randomly selected touch screens, the installed software, and a verification of the installed firmware in the touch screens.

The audit team found no evidence to suggest or conclude that the official certified election results did not reflect the actual votes cast. The audit team also found no evidence of election procedural error, no evidence of unapproved or unauthorized software/firmware installation, manipulation or alteration, no evidence of machine malfunction, and no evidence of elections' staff misconduct that could have contributed to the higher than expected under-vote reported in the U.S. Congressional District 13 race.

The audit team found that the Sarasota County Supervisor of Elections and staff conducted themselves in conformance with established procedures and documented well their processes for elections conduct, with a few noted exceptions. In order to assist Sarasota County in its continuing commitment to improve the security and integrity of the voting system and the election process, the audit team recommends the following:

- Enhance and supplement the top-level security procedures with written lower-level work instructions in order to memorialize Sarasota County's unique processes.
- Develop a more reliable methodology for recording voter signature counts.
- Revamp the procedure to prohibit the closing of touch screens prior to closing the polls.
- Require the production of the early voting results tape on election night after the polls close.
- Develop security training procedures for elections staff and poll workers.

Finally, in light of the national attention garnered by the events surrounding the Sarasota County undervote rate in the U.S. Congressional District 13 race, and the momentum for further state and federal election reform, the audit team strongly recommends that human factors in the voting process and the interaction between voters and voting systems not be underestimated. Further in-depth study is warranted in this area, particularly in the area of effective ballot design.

I. BACKGROUND

Subsequent to the 2006 General Election, a report that a higher than expected under-vote in the U.S. Congressional District 13 race (hereinafter "District 13") in Sarasota County had occurred prompted the Florida Secretary of State to direct the Division of Elections/Bureau of Voting System Certification to conduct an audit of the Sarasota County's voting system and attendant procedures. The audit team consisted of four members from the Division of Elections/Bureau of Voting System Certification, supplemented by the support of 12 additional staff solely for conducting the parallel tests. The other part of the audit team consisted of the independent review project team assembled pursuant to a contract with the Florida State University's Security Analysis in Information Technology (SAIT) Laboratory (hereinafter "FSU/SAIT project team") to conduct the independent code review of the iVotronic voting system firmware.⁴

II. OBJECTIVES AND SCOPE

The objective of the audit focused on verifying whether the Election Systems and Software, Inc.'s iVotronic Voting System, Release 4.5 Version 2 accurately recorded voters' selections and votes cast and tabulated the results from the November 7, 2006 General Election, with regard to the District 13 race) in which a higher than expected undervote was reported. In order to accomplish that objective, the audit team developed an audit plan to ascertain if a process, definition, machine, tabulation, anomaly or other factor caused or contributed to the District 13 race's undervote total.⁵ The audit plan consisted of three major components: 1) parallel testing of the Election Systems and Software, Inc., iVotronic Voting Systems, Release 4.5 Version 2, 2) an independent source code review of the iVotronic Voting System firmware by the FSU/SAIT project team, and 3) an examination of the elections conduct, procedures, and results including verification of the certified voting system.

With the exception of the independent software source code review conducted by FSU/SAIT project team, audit activities occurred primarily at the Sarasota County Supervisor of Elections' main offices located at 101 S. Washington Boulevard in Sarasota, Florida, and at the Voting Equipment Facility (VEF) which is a warehouse located at the Interim Government Operations Center (IGOC) located at 1001 Sarasota Center Boulevard. The Sarasota County Supervisor of Election's Office stores the iVotronic touch screens at the VEF and the VEF is also where the machine and manual recounts occurred for the District 13 race. An inventory of the audit documentation is attached hereto as Appendix D. An acronym list is also provided in Appendix E.

III. PARALLEL TESTS

The audit team initiated the audit by conducting two parallel tests of the touch screens for the *Election Systems & Software (ES&S) Voting Systems, Release 4.5, Version 2, iVotronic* voting system in an effort to replicate the undervote count observed for the District 13 race during the 2006 General Election held in Sarasota County. A parallel test is a test activity

⁴ *Software Review and Security Analysis of the ES&S iVotronic 8.0.1.2 Voting Machine Firmware*, February 2007 available at: <http://election.dos.state.fl.us/>

⁵ See Audit Plan, November 2006, Appendix B.

during which election day voting is simulated. The point of the test is to ascertain the accuracy and reliability of the deployed voting system devices with due consideration given to ballot style, layout, coding, demographics, and operation. The test team plays the role of the voters and the ballots are cast in accordance with a predetermined test script. The parallel tests focused on the iVotronic touch screen's ability to accurately record a voter's selections as presented to the voter on the touch screen's ballot review pages. In addition, the parallel tests also examined various complaints regarding a voter's ability or difficulty in making his or her vote selections.

The audit team conducted the first parallel test on November 28, 2006 on five non-deployed iVotronic touch screens, and the second parallel test on five deployed touch screens on December 1, 2006. All the vote differences encountered during the first parallel test were the result of two script errors and eight vote selections that were not entered according to the test script. All the vote differences encountered during the second parallel test results were the result of one incorrectly documented vote selection for the ad hoc machine and two vote selections that were not according to the test script. The Parallel Test Summary Report issued on December 18, 2006, detailed the process followed by the audit team and included the audit team's findings. See Appendix B, attached and incorporated by reference in its entirety.

In summary, the audit team reported in the *Parallel Test Summary Report* that the iVotronic touch screens accurately captured the voters' selection as presented on the review screens. The parallel tests including a review of the parallel test videos did not reveal or identify any latent issues associated with vote selection or the accuracy of the touch screens' tabulation of the votes as cast.

IV. INDEPENDENT SOURCE CODE REVIEW OF THE iVOTRONIC VOTING SYSTEM FIRMWARE

On December 15, 2007, the Florida Department of State contracted with Florida State University and its Security Analysis in Information Technology (SAIT) Laboratory to conduct an independent rigorous scientific software review and security analysis of the iVotronic firmware for the Election Systems and Software, Inc.'s iVotronic Voting Systems, Release 4.5 Version 2. The FSU/SAIT Project team assembled a group of professionals (including professionals outside Florida State University) with collective expertise in computer science, security, voting systems, and software. The FSU/SAIT project team issued its findings in a separate final report, entitled *Software Review and Security Analysis of the ES&S iVotronic 8.0.1.2 Voting Machine Firmware*, February 2007.⁶

V. EXAMINATION OF SARASOTA COUNTY'S ELECTIONS OFFICE ELECTION CONDUCT, PROCEDURES, ELECTION RESULTS, AND CERTIFIED VOTING SYSTEM

The audit team also conducted a number of examinations in the following areas: election setup, procedures, voter history, precinct zero and result tapes, sample deployed touch

⁶ *Software Review and Security Analysis of the ES&S iVotronic 8.0.1.2 Voting Machine Firmware*, February 2007; available at: <http://election.dos.state.fl.us/>

screens, central county system, iVotronic EEPROMs, Unity system, incident reports, security procedures, work instructions, absentee and provisional vote accumulation, ballot images from randomly selected touch screens, the installed software, and a verification of the installed firmware in the touch screens deployed by the Sarasota County Supervisor of Elections for use in the 2006 General Election.

A. Voting System

The audit team examined the certified voting system deployed for use in the 2006 General Election, the *Election Systems & Software (ES&S) Voting Systems, Release 4.5, Version 2*.⁷ This voting system included enhanced optical scan firmware for precinct count (M100) and central count (Model 650) tabulators and the iVotronic touch screen with firmware version 8.0.1.2 (with the option of a 12-inch or 15-inch DRE touch screen). Sarasota County used only the 12-inch version of the iVotronic touch screen.

This voting system also included some of the election administration elements from the Unity 2.4.3 system, (renamed Unity 2.4.4.2 for this application). The Division of Elections/Bureau of Voting Systems Certification certified Unity 2.4.4.2 and the iVotronic firmware 8.0.1.2 as part of "*ES&S Voting System, Release 4.5, Version 1*". The "*ES&S Voting System - Release 4.5, Version 2*" is identical to *Release 4.5, Version 1* except for the ES&S models of optical scanners and a minor change to Unity's Election Reporting Manager (ERM). The certification timeline for this voting system follows:

ES&S Voting System Release 4.5, Version 2 Certification: 0508ES&S-02

Revision	Date	Changes
Original	08/18/05	Initial certification
Revised	11/10/05	Corrected the Oracle version number
Revision 2	07/17/06	Added optional equipment: Battery charger & compact flash multi-card reader/writer. Removed voter activated PEBs from the system configuration.
Revision 3	09/08/06	Added Service Release 1 (SR-1) to Election Reporting Manager (ERM)

As noted, the latest revision to the voting system (Revision 3, dated September 8, 2006) lists the ERM version as 7.0.0.3 with Service Release 1 (SR-1). ES&S developed SR-1 to revise the ERM report function and facilitate the extraction of undervoted ballot images from a universal primary contest (UPC).⁸ This SR-1 is an enhancement to a post-election results reporting function that sorts ballot images for a primary election and otherwise has no impact on the election definition or on election night results reporting functions. SR-1 is a revision to both Florida certified voting systems: "*ES&S Voting System Release 4.5, Version 1*" and "*ES&S Voting System Release 4.5, Version 2*". However, the Sarasota County Supervisor of Elections' Office retained the Revision 2 configuration⁹ and did not use the Revision 3 voting system with the SR-1 update.

⁷ Voting system certification # 0508ES&S-02 (Revision 2), dated July 17, 2006.

⁸ The UPC is unique to Florida's closed primary elections and occurs when an office up for election has only one political party with a slate of candidates and that race's winner will go unchallenged during the general election. Under these conditions, this district race appears on all the relevant primary ballots, thus allowing cross-party voting for this race in a closed primary election.

⁹ Configuration for the "*ES&S Voting System, Release 4.5, Version 2*" revision 2:

Election Administration:

- Unity Version 2.4.4.2
 - Audit Manager, version 7.0.2.0
 - Election Data Manager (EDM), version 7.2.1.0
 - ES&S Ballot Image Manager (ESSIM), version 7.2.0.0

Note that the Model 150 central count tabulator is no longer deployed in Florida. Sarasota County does not have the Model 100 precinct ballot counters (i.e., M100 precinct optical scanners) in its inventory. In addition, Sarasota County Supervisor of Elections coded the 2006 Primary and General Elections as text based elections. Therefore, Sarasota County Supervisor of Elections' staff did not use the iVotronic Image Manager or the Oracle database, although these items are installed as part of their Unity system. Sarasota County Supervisor of Elections' office has two banks of eight modems with each bank linked to a Data Acquisition Manager (DAM) computer with an eight-port Sealevel serial card. The second set of modems and the second DAM computer served as a backup system. The

- Hardware Programming Manager (HPM), version 5.0.3.1
 - COTS OmniDrive or similar PCMCIA interface *(for use with Model 100)*
 - Needham's Electronics EMP-11 Device Programmer w/ES&S 2102 piggyback card *(for use with Model 150)*
 - COTS Zip drive *(for use with Model 650)*
 - San Disk Image Mate or similar compact flash interface *(for use with iVotronic compact flash cards)*
 - *Optional* Compact Flash Multi-Card Reader / Writer, version 1.0
- Election Reporting Manager (ERM), version 7.0.0.3
- *Optional software*
 - Data Acquisition Manager (DAM), version 6.0.0.0 *(for modem communications)*
 - iVotronic Image Manager (iVIM), version 1.2.3.0 *(for bitmap system)*
- *Optional hardware*
 - One or more Equinox multi-modem adapters, 4 or 8 ports *(for use with Data Acquisition Manager)*
 - One or more Sealevel Systems COMM+8.PCI serial adapters *(for use with Data Acquisition Manager and a jurisdiction's existing modem bank)*
- COTS software
 - *Optional* Oracle 9i, version 9.2.0.1.0 *(for use with iVotronic Image Manager)*
 - Adobe Acrobat Reader, version 7.0 Standard or later
 - Adobe Type Basics 65 or similar font manager *(for Helvetica fonts)*
 - RM Cobol, version 7.50 or later
 - Cobol Wow, version 3.12 or later
 - Norton Anti Virus 2004 or equivalence

Precinct Count *(one or more of the following):*

- Model 100 Precinct Ballot Counter, hardware version 1.3,
 - w/firmware version 5.0.0.0
 - Auxiliary equipment for Model 100:
 - *Optional* internal modem
 - Metal Ballot Box
- iVotronic DRE (12" & 15" w/ and w/o ADA), hardware version 1.0
 - w/ firmware version 8.0.1.2
 - Auxiliary equipment for iVotronic DRE:
 - PEB Rev: iV1.7-PEB-S, iV1.7b1-PEB-S, iV1.7b2-PEB-S, iV1.7c-PEB-S
 - COTS headphones for audio ballots *(for ADA iVotronics)*
 - Communications Pack
 - *Optional* iVotronic Battery Charger, version 1.0

Central / Absentee Count *(one or more of the following):*

- Model 150 Central Ballot Scanner, hardware version 1.1
 - w/ firmware version 2.1.2.0
 - Two COTS parallel printers
- Model 650 Central Count Ballot Tabulator, hardware version 1.0 or 1.1
 - w/ firmware version 2.1.0.0
 - Two COTS parallel printers

optional Compact Flash Multi-Card Reader / Writer, version 1.0 in the certified configuration is an ES&S product created exclusively for ES&S's voting systems customers. As such, this device did require a qualification test, since it was not a commercial-off-the-shelf (COTS) item. However, Sarasota County Supervisor of Elections staff did not have the ES&S duplicator and instead used a COTS memory card duplicator; the International Microsystems Incorporated M6600 Memory Card Duplicator with 24 sockets.¹⁰

The interface between the Unity election management system and the precinct count tabulator (iVotronic touch screen) is a personalized electronic ballot (PEB) and a compact flash card. The compact flash card is a required element for all iVotronic touch screens that use a bitmap election definition and for use with the Help America Vote Act (HAVA) compliant iVotronic touch screens as a means for storing the audio files. The HAVA compliant touch screens are often generically referred to as the Americans with Disabilities Act (ADA) touch screens. However, since Sarasota County used a text-based election definition instead of a bit-map definition for the 2006 General Election, the county only needed to use the compact flash cards for the ADA iVotronic touch screens.

The audit team also found that the Sarasota County Supervisor of Elections' staff, as a matter of practice, installed and sealed compact flash cards in the ADA and non-ADA iVotronic touch screen prior to the start of election for later use in downloading iVotronic audit data after the polls had closed. The Sarasota County Supervisor of Elections' staff also maintained tracking records of the compact flash cards assigned to each touch screen and the assignment of personalized electronic ballots (PEBs) to each precinct and early voting location.

The interface between Unity and the central count tabulator (Model 650) is a zip disk. The zip disk is used to load the election parameters into the tabulator and to accept the tabulation results for upload into Unity's Election Reporting Manager (ERM). Sarasota County SOE elections staff used zip disks to transfer absentee totals into Unity's ERM and used the PEBs on election night to transfer election day totals into Unity. The elections staff used the compact flash cards to transfer the early voting totals into Unity's ERM. The elections staff did not insert early voting poll worker PEBs into an iVotronic touch screen or any other device once the polls were closed. The elections staff printed the results tapes from the early voting master PEBs after the results contained on the compact flash cards were uploaded into Unity's ERM. Likewise, the activator PEBs used on election day were never inserted into an iVotronic touch screen or any other device once the polls were closed. On election night after the poll workers closed the polls, the poll workers transported the election day master PEBs to one of four regional locations that were under Sarasota County's control. The elections staff used these four sites to modem the summary results to the central tabulation location. As a post-election activity, the elections staff uploaded the iVotronic audit data from the compact flash cards.

B. Access to Physical Facilities

The audit team site visited the offices for the Sarasota County Supervisor of Elections located at 101 S. Washington Boulevard in Sarasota, Florida, and a satellite warehouse facility located at the Interim Government Operations Center (IGOC) located at 1001 Sarasota Center Boulevard. The latter facility, called the Voting Equipment Facility

¹⁰ International Microsystems Incorporated, www.imi-test.com

(VEF), is where the Sarasota County Supervisor of Elections stores the iVotronic touch screens. The VEF also served as the site for the machine and manual recounts for the District 13 race, and the parallel tests conducted by the audit team.

Access to the VEF is restricted to the Supervisor of Elections and to authorized personnel with special identification that permits entry to the facility. Both the offices for the Sarasota County Supervisor of Elections and the VEF have video surveillance. The secured access Data Acquisition and Reporting Center (DARC) is located on the first floor of the VEF. This DARC room is where the elections staff prepares the election definition, creates the election media, and tabulates the results. The DARC has windows on three sides to allow public and media viewing. Entry to the DARC room is under a dual access control system and log sheet. The DARC room contains the isolated Unity server, a coding workstation, a ballot workstation, two Election Reporting Manager (ERM) workstations, and two data acquisition (WDAM) workstations along with a 24-port COTS compact flash duplicator, and COTS printer. Also resident in the DARC room are two Model 650 central count tabulators to provide high speed optical scanning of absentee ballots. The Sarasota County Supervisor of Elections' staff also stores in this room fifteen 12-inch iVotronic supervisor's terminals of which six were used to prepare the activator PEBs for the 2006 General Election. In addition, a COTS video system is present that feeds the ERM streaming summary reports to the canvassing board and the public viewing areas via coax cables. The video system is a Brightboard P27 Digital Signage System. Aside from the modems, this is the only other external connection to the Unity system. Between elections, the DARC room houses all the compact flash cards and PEBs, and retains the compact flash cards and PEBs that are not deployed during an election.

C. Election Setup and Conduct

The audit team conducted an examination of the procedures and practices for election set up and operation for the 2006 General Election for Sarasota County. The Sarasota County Supervisor of Elections' staff used both paper ballots and direct recording electronic (DRE) ballots. Absentee voters used paper ballots. Early voting, provisional, and election day voters used the iVotronic touch screens. Nine different ballot styles existed. In addition, the Supervisor of Elections designated 7 early voting sites and 156 election day polling locations. The Supervisor of Elections deployed 1,506 iVotronic DREs: 86 touch screens assigned to the 7 early voting sites and 1,420 touch screens assigned to the 156 polling locations.

Each polling location included at least one ADA iVotronic touch screen. An ADA touch screen is identical to a non-ADA touch screen except that the ADA touch screen has an optional audio ballot capability and includes a three-button voter interface integrated into the case immediately below the touch screen. The use of the term "ADA touch screen" is only intended to identify those touch screens that can satisfy the audio ballot requirements¹¹ and is not intended to imply any additional assessable capability. Sarasota County has no restriction regarding the use of an ADA touch screen for regular voting. Thus, such a device may be used by a vision impaired voter as well as those voters that do not require the audio enhancement.

¹¹ Section, 101.56062(1)(n), Florida Statutes

The Supervisor of Elections held in reserve 31 touch screens (9 non-ADA and 22 ADA touch screens). Twenty-four (6 non-ADA and 18 ADA touch screens) were ultimately available as spares as documented on November 5, 2006.

The audit team learned that three members of the Sarasota County Supervisor of Elections' staff were authorized to code an election and these individuals plus a fourth were authorized to prepare the election media. For the 2006 General Election, the elections staff created twelve qualification PEBs that were encoded with the Election Qualification Code (EQC). This is consistent with elections staff's practice to create a new EQC for every election to prevent unauthorized PEBs and/or touch screens from being used during that election. The qualified PEBs do not contain election parameters/definitions. The qualified PEBs are used to key the iVotronic touch screens with the election specific EQC identifier.

The elections staff transferred the 12 qualified PEBs to the VEF supervisor. The VEF supervisor and his staff used the qualified PEBs to key the iVotronic touch screens. Once the VEF staff completed this task, the VEF supervisor retained custody of the qualified PEBs at the VEF. The VEF staff stored the iVotronic touch screens in their protective storage case. This case also served as the poll booth when assembled and set up at the polling location. The protective case was padlocked whenever the touch screen was in its case and sealed with a taper-evident seal whenever it was set for an election. Similarly, the compact flash card also had a taper-evident seal. The VEF staff recorded the seal numbers in the custody database system. The VEF staff used an iVotronic Custody Sheet to track precinct assignment of the touch screens via their serial numbers and seal numbers. The VEF staff stacked 24 padlocked cases on a metal pallet with removable support legs. The VEF staff stored the pallets three high on these support legs, thus each stack of pallets contains 72 touch screens. The preceding description underscored the formidable logistical obstacles to accessing or tampering with the iVotronic touch screens in this facility. The audit team found no evidence to suggest or conclude that secured access to the iVotronic touch screen was comprised, or that unauthorized access occurred.

With few exceptions, the Sarasota County Supervisor of Elections staff followed the practice of using the same PEB precinct assignments that the elections staff developed for the primary election. This practice facilitated preparations for a general election and minimized re-labeling the PEBs. The records showed that all the PEBs were qualified with the same EQC used to key the iVotronic touch screens. This activity took place on a single day in the DARC room. Next, the elections staff used the Unity Hardware Programming Manager (HPM) and supervisor touch screens to load the election definition onto the qualified PEBs. The elections staff randomly selected 6 of 15 available supervisor touch screens for this activity and completed the process in one day. The elections staff used the master PEBs to open the poll on an iVotronic touch screen and used each activator PEB to bring up a ballot. Each polling location would have approximately four or five activator PEBs in addition to the master PEB. Next, the elections staff again used the master PEB to close the touch screen, thus verifying the correct operation and election definitions coded into these devices prior to sealing the PEBs in their containers. Before sealing the master PEB, the elections staff used a supervisor touch screen to clear the master PEB of any residual votes from this test. The PEBs were stored in cages under dual custody.

Note that there is no difference between a master PEB and a poll worker activator PEB other than a plastic color band. Any of these PEBs may serve as the master PEB, but to minimize poll worker confusion, the master is typically a color (green) that is different

from that used for the activator PEBs (red).¹² A poll worker activator PEB becomes a master PEB when the poll worker uses the PEB to open the polls. That PEB will then contain a list of all the iVotronic touch screens that were opened by the PEB. Once the poll worker opens all the touch screens at a polling location, the last touch screen to be opened will be connected to a communications pack that contains a thermal printer via a RS-232 serial ribbon cable. The poll worker will then print the zero tape for that polling location. After creating the zero tape, the master PEB is set aside in a secure location and not used again until the polls are ready to be closed. The poll worker will close the poll by collecting vote summaries from all the touch screens opened by that PEB. Again, the poll worker will connect the communications pack to the last touch screen to be closed and will then print the results tape. During the time that the polls are open, the poll worker will use the activator PEBs to bring up the ballot on the touch screen for each voter. The master PEB may be utilized for this task as well. However, it is a common security practice to limit the master PEB to only opening and closing the poll.¹³ The activator PEBs contain only the EQC and election definition (i.e., ballot definitions) and do not acquire any vote information during their usage. Only the master PEB will have summary results after the poll closing and collection process.

A continuing examination of the records by the audit team indicated that on election night after the polls were closed, the zero and results tape along with the master PEB were placed in a yellow transfer bag. The poll workers transferred these bags from each precinct directly to the DARC room or to one of the county's controlled regional sites. At a regional site, the elections staff modemed the results to the DARC room using the DAM host/client protocol. The remaining activator PEBs were transferred to the DARC room later that night. The zero and results tape along with the master PEB were transferred to the DARC room under police escort. The regional sites used a laptop computer with the Unity Data Acquisition Manager's client software. The DARC has a DAM host that establishes a handshake with the client. This modem activity began upon an oral indication from the DARC personnel.

The audit team also re-examined the elections parameters and results for the Logic and Accuracy (L&A) tests conducted by the Sarasota County elections staff on October 20, 2006, and on November 1, 2006 (after early voting had begun). Based on the outcome of the first L&A test, the Sarasota County Supervisor of Elections serviced as needed the Model 650 central tabulator. A second L&A test was subsequently conducted to verify the correct operation of the voting system. In accordance with state law, the Supervisor of Elections forwarded the L&A test results and certifications to the Division of Elections/Bureau of Voting Systems Certification on November 1, 2006.¹⁴ The L&A test results showed no evidence of an abnormality with the District 13 race or any other race in Sarasota County. The L&A test results accurately reflected the expected totals from the test scripts.

The Sarasota County Supervisor of Elections' staff deployed the majority of the first L&A test touch screen units for use during the early voting period. Early voting started on October 23, 2006. According to the records, a poll worker at each early voting site opened the poll with a master PEB on the morning of the first day of early voting. Each night, a

¹² ES&S has also developed a voter activator PEB that the voter uses to bring up the ballot. However, voter activator PEBs are not deployed in Florida.

¹³ Minimum Security Procedures, Sarasota Florida, p. N-4.

¹⁴ Section 101.5607(1)(b), Florida Statutes and Rule 1S-2.015(5)(f), Florida Administrative Code

poll worker recorded the public count as displayed on the touch screen. Records indicate that elections staff did not use the practice of locking the touch screen via software. Instead, at the end of each early voting day, the poll worker removed the touch screens from their booths and stacked the units in a lockable cabinet for overnight storage. The cabinet was also located in a lockable room. During this time, the touch screen was not connected to any power source, and thus, remained dormant.

When the poll was opened the next morning for continuation of early voting, the poll worker reinstalled the touch screen into their booth and reconnected the power. To obtain the public count, the poll worker very quickly, in one motion, inserted and removed the PEB. This action activated the touch screen display, thus allowing the poll worker to observe the public count. However, the iVotronic touch screen may log this action as an invalid PEB in the event log, if there is quick insertion and removal of the PEB because the quick process does not allow the touch screen adequate time to establish the proprietary handshake and capture the PEB serial number. This is the primary reason why early voting touch screens exhibit a high number of invalid PEBs in their event logs. The audit team, however, did not find this standard practice to have contributed or to be in any way correlated to the undervote reported in the U.S. Congressional District 13 race.

D. Voter History/Signature Counts

The audit team examined the precinct registers and the precinct register signature counts provided by the Sarasota County Supervisor of Elections' staff. The spreadsheet of signature counts included the public count from the touch screen results tape, the public count as recorded by the poll worker on the "Poll worker Report Form" (PRF), the poll workers' count of signatures as recorded on the PRF, the elections staff's count of the signatures, and the public recount of the signatures that occurred during the machine recount. As an additional random check, the audit team manually counted the signatures from the following 16 precincts: 27, 31, 39, 63, 76, 78, 90, 105, 106, 113, 117, 118, 134, 136, 137, and 150.

The audit team made the following observations regarding the procedures for counting signatures:

- Sarasota County Supervisor of Elections' staff's signature count differed from the signature count obtained during the manual recount in 47 of the 156 precincts. Fourteen of the 47 precincts had differences greater than one signature. The touch screen public count and the transfer of this information by the poll worker to the Poll worker Report Form (PRF) showed one precinct that was off by one vote. This difference is solely attributable to human error as the process involves only the transfer of information from the results tape to the PRF.
- The poll worker signature count differed from the touch screen count in 48 precincts of which 17 precincts showed a difference greater than one signature. The greatest difference between the poll workers' count and the touch screen public count was 8 for precinct 48, but the difference between the touch screen count and the elections staff was two for the same precinct.
- The signature count from the machine recount agreed with the elections staff's count.
- The greatest difference between the elections staff's count with the touch screen public count was four.

- The audit team's own random signature count did not match with the elections staff's count for 10 of the 16 precincts. The audit team's count for three precincts did not match with either the poll workers' count, the elections staff's count, or the count obtained during the machine recount. The audit team's signature count against the touch screen public count was a difference of three in two sample precincts, a difference of two for two precincts and a difference of one for two precincts.

The discrepancies and uncertainty associated with signature counts may be attributed to a number of factors including the lack of a clear indication that the voter had signed the precinct register. For example, when a signature appeared more as a deletion (i.e., the appearance of a scribble intended to mean a deletion of a mark), a short squiggle, or lacked the required poll worker's initials,¹⁵ it was unclear whether to count the signature or to treat it as a scratch out or an inadvertent mark. The audit team encountered this possibility in 10 of the 16 precincts they examined. The audit team found the manual signature count process to be labor intensive and prone to miscount, and not the most reliable indicator of the number of voters that actually voted at a precinct.

E. Precinct Zero and Results Tapes

The audit team examined the precinct zero and results tapes. Although it is a preferred and common practice for the poll worker to remove the zero tape from the communication pack only after the results tape is printed and one continuous tape is produced, the Sarasota County Supervisor of Elections' staff did not consistently follow this practice. In some cases a replacement touch screen was introduced after the poll worker printed the original zero tape. In another case, the vote summary from a touch screen that needed to be replaced was collected by the master PEB prior to the poll closing. The Sarasota County Supervisor of Elections' staff made this decision to collect the votes as a precaution should the touch screen fail to function when the polls were later closed. However, there are preferred alternate procedures for recovering vote totals from touch screens that fail to close properly. When a replacement touch screen later arrived, a poll worker used the master PEB to open that touch screen as would be the normal process.

When the poll worker printed the zero tape, it also revealed the vote summary of the touch screen that was replaced, because it had been closed by this master PEB. The closing process performs a vote collection and creates a vote summary on the master PEB. The premature collection of the vote summary from a touch screen needing replacement should not occur at all prior to closing the poll. It is fundamentally important to ensure the integrity of an election by obtaining the zero totals and not prematurely revealing any vote totals in the process. The audit team recommends the implementation of the appropriate procedure in lower-level work instructions or in a revision to the poll workers' training manual.

As for the early voting results tapes, the audit team found that the Sarasota County Supervisor of Elections' staff did not produce the tapes until the day following election day. Although the results tapes cannot be obtained until after the election day polls are closed, the preferred procedure is to upload the early voting audit data into Unity's ERM on election night after the polls are closed. Immediately following or concurrent with this activity, the early voting results tapes should be printed using the early voting master

¹⁵ Section, 98.461(2), Florida Statutes

PEBs. It is important to ensure the integrity of an election by obtaining the results tapes as soon as possible and in view of the public. The audit team recommends that this procedural step be addressed in a lower-level work instruction for the DARC election officials.

The audit team also examined the zero and result tapes, and the results tapes printed from the vote recollection process in the machine recount. The audit team verified that the zero tapes indicated the counters were set to zero when the polls were opened. The audit team also examined the public count and protective count from both sets of results tapes along with the time and date that the polls were closed. The difference between the results tape's protective count and the zero tape's protective count should equal the results tape's public count. The audit team verified that the public count matched the difference between the beginning and ending protective counts and the machine recount results were identical to the original results tapes.

F. Sample Deployed Touch Screens

The audit team conducted an examination of a small sample of zero and results tapes for 46 touch screens representing 1,792 ballots from the North Port Municipal early voting site and the following precincts: 1, 31, 61, 85, 94, 130, 152. The 46 touch screens represent approximately 3% of the 1,506 touch screens deployed during the 2006 General Election for Sarasota County. Two of the 46 touch screens were used during early voting.

Next, the audit team obtained the event log reports for these same 46 touch screens and manually counted the number of ballots cast and confirmed that the results tapes' public count agreed with the event logs. The audit team also obtained and examined the ballot images for these 46 touch screens. The audit team manually counted the votes recorded within the touch screens' ballot images for the U.S. Congressional District 13 and Attorney General races. The audit team found the manual count of the votes cast for these two races agreed with the results tapes. However, as noted for the precinct register's signature count, there were several occasions where the audit team had to recount the votes from the ballot images to arrive at a consistent number.

The audit team confirmed that the vote totals obtained from the results tape matched the data that was uploaded into Unity's ERM, just as was verified during the machine recount. The audit team did not find (and the machine recount did not reveal) any evidence to suggest or conclude that the collection and final tabulation of touch screen vote totals were not accurately tabulated.

G. Central Count System

The Sarasota County Supervisor of Elections staff provided the audit team with access to the absentee signature envelopes. The audit team manually counted the accepted ballot signature envelopes from 16 absentee precincts as a random check and verified this count against the number of accepted ballots counted during the machine recount. The 16 precincts included: 27, 31, 39, 63, 76, 78, 90, 105, 106, 113, 117, 118, 134, 136, 137, and 150. These are the same precincts that the audit team used to count the precinct registers' signatures. The central count system consists of two Model 650 central tabulators, locally identified as Ballot Reader #1 and Ballot Reader #2. The COTS printers are Okidata Microline 520 dot matrix printers. Note that the audit team was not able to access a

sample of the absentee ballots to perform a manual count of the CD-13 race, because of the pending litigation of this particular race¹⁶.

H. iVotronic EEPROMs

The audit team selected six iVotronic touch screens for examination of the installed firmware. Two of these touch screens were previously used in the parallel testing and the remaining four units were election day touch screens that had never been reactivated since they were closed on election night. For the first touch screen examined, the audit team powered on the device and utilized the touch screen's firmware to download the audit data prior to physically extracting the EEPROMs. The EEPROMs are AMD's Am29LV160D flash memory. For the remaining units, the audit team extracted the EEPROMs prior to powering on the touch screens. Therefore, the information extracted from three of the four election day units represents information from touch screens that were in the exact same state these voting devices were in when they were closed on election night. This is the recommended course of action whenever one extracts the memory contents from an iVotronic touch screen.

The audit team used a Needhams EMP-300¹⁷ device programmer with a Pivot flash module programmer adapter card and Needham's EMPWin application to download the memory contents from the third and fourth EEPROMs. The third memory chip is one of the three redundant memories that contain the election definition, a configuration history, an event log, and the ballot images. The audit team used ERM to extract the event log and ballot images from the EEPROM 3 memory dumps and found this information in agreement with the information provided by the audit data. The fourth memory chip contains the touch screen firmware mapped to high memory. The audit team compared the extracted firmware to the escrowed firmware using PrestoSoft's ExamDiff Pro application.¹⁸ The audit team found the installed firmware to be an exact copy of the DOE escrowed firmware. Additionally, the SHA-1 hash of this firmware using Maresware's hash software is an exact match.¹⁹ The SHA-1 hashes for iVotronic firmware version 8.0.1.2 are:

File name	HASH value	File size (bytes)
DOE escrowed firmware with checksum set to zero:		
V8012.fmw	E9EFF14B28A49504DBEC9C2CA2DBC6929EC7F27E	393216
Sarasota's installed firmware:		
V0106366-V8012.bin	E9EFF14B28A49504DBEC9C2CA2DBC6929EC7F27E	393216
V0110515-V8012.bin	E9EFF14B28A49504DBEC9C2CA2DBC6929EC7F27E	393216
V0106775-V8012.bin	E9EFF14B28A49504DBEC9C2CA2DBC6929EC7F27E	393216
V0105712-V8012.bin	E9EFF14B28A49504DBEC9C2CA2DBC6929EC7F27E	393216
V0105346-V8012.bin	E9EFF14B28A49504DBEC9C2CA2DBC6929EC7F27E	393216
V0117973-V8012.bin	E9EFF14B28A49504DBEC9C2CA2DBC6929EC7F27E	393216

The list below identifies the iVotronic touch screens and their last activity prior to extracting the firmware.

¹⁶ See Jennings v. Elections Canvassing Commission et. al., Circuit Court for Leon County, Case 2006, CA 002973.

¹⁷ Needhams Electronics Inc. available at: <http://www.needhams.com/software-download.html>

¹⁸ PrestoSoft available at: http://www.prestosoft.com/ps.asp?page=edp_download

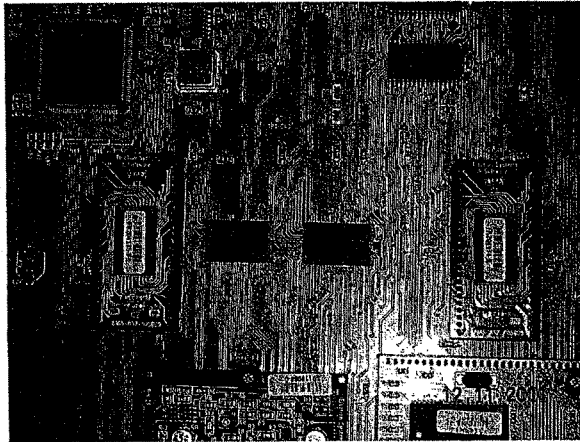
¹⁹ Hash.exe and Hashcmp.exe available from Mares and Company at: <http://www.dmares.com/index.htm>

iVotronic Sn #	Precinct	Last used	Last use
V0105712	105	Nov 7, 2006	Election day (<i>used firmware to first dump the memory</i>)
V0106775	113	Nov 7, 2006	Election day
V0106366	117	Dec 1, 2006	Parallel test
V0117973	76	Dec 1, 2006	Parallel test
V0105346	118	Nov 7, 2006	Election day
V0110515	117	Nov 7, 2006	Election day

The audit team found no evidence to suggest or conclude that Sarasota County's iVotronic touch screens firmware was compromised, altered or different from that held in escrow by Florida Department of State's Division of Elections.

In order to preserve the non-deployed touch screens for future analysis of the installed firmware, the audit team chose not to extract any information from these touch screens. These touch screens are the most logical touch screens on which to conduct further analysis provided no attempt is made to power the units during their storage. The audit team recommends that any future examination of the spare units should be preceded first by removing the EEPROM 3 and EEPROM 4 memory modules and obtaining a memory dump of their contents prior to activating these units.

The removable memory modules are shown in the following photo (EEPROM 3 is on the left, EEPROM 4 is on the right, and EEPROMs 2 and 1 are surface mounted between the two removable chips):



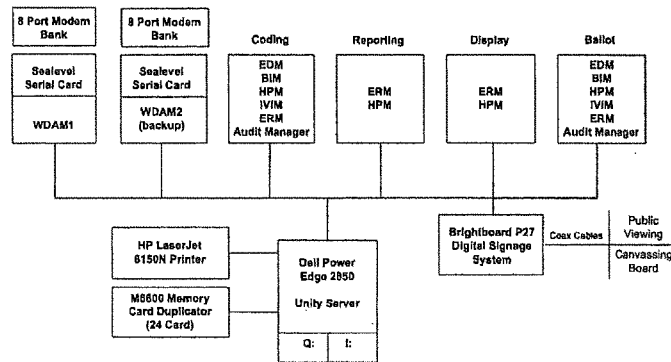
I. *Unity Server*

The audit team examined the Unity server. The Unity server is a Dell Power Edge 2850 and each of the Unity workstations is a Dell Dimension 9100. The operating system and the election reporting system requires a user name and password for each level of access. The audit team extracted a SHA-1 hash of the installed static files for comparison with the software held in escrow by the Florida Department of State's Division of Elections and as

installed on a similar computer. That comparison using the SHA-1 hash confirmed that the static files matched the files retained by department. The escrowed software is the witnessed compiled executables and support files that the Independent Test Authority (ITA) labs provided directly to the department. The audit team also reexamined Sarasota County's voting system acquisition filing and verified that the installation disks matched the escrowed uninstalled files. Based on a review of these data sets, the audit team found no evidence to suggest or conclude that the static files of this voting system software were altered or updated.

In order to preserve the exact settings used to create and tabulate the 2006 General Election for Sarasota County, the audit team also acquired screen shots within the entire set of Unity modules to document each menu setting. The Sarasota County Supervisor of Elections' staff have preserved their Unity system's hard drives, and replaced these drives with new ones in conjunction with ongoing litigation.²⁰

Sarasota County, Florida
Unity 4.5 Version 2 Voting System Configuration



J. Incident Reports

The audit team forwarded to the FSU/SAIT project team for the independent source code review the incident reports compiled by the Sarasota County Supervisor of Elections' staff for the 2006 General Election. The incident reports represent a total of 1,920 documented events of which 455 were related in some manner to the iVotronic touch screen. The audit team reasoned that the FSU/SAIT project team could categorize this data and correlate the information to relevant source code segments that may need a more thorough examination.

²⁰ See Jennings v. Elections Canvassing Commission et. al., Circuit Court for Leon County, Case 2006, CA 002973.

The FSU project team's review and findings are discussed in its separately issued final report.²¹

K. Security Procedures and Work Instructions

The audit team interviewed Sarasota County Supervisor of Elections' staff to ascertain the extent to which the staff followed its established Minimum Security Procedures.²² The audit team found overall that Sarasota's County Supervisor of Elections' Minimum Security Procedures met the basic requirements delineated in the Department of State's minimum security procedures rule²³ and address the major elements of the Division of Elections' Technical Advisory issued March 2006.²⁴ The audit team found that the elections staff complied with their documented processes, with a few exceptions noted.

The audit team noted the importance of Sarasota County Supervisor of Elections' existing multi-layered security that makes use of dual access control and positive inventory tracking methods to minimize security risks. However, the audit team noted the absence of any security training plans for the elections staff and written documentation of certain procedures currently committed only to rote memory.

L. Ballot Design Layout

The audit team examined the ballot design layout for the District 13 race in Sarasota County to determine if it was a contributing factor to the higher than expected undervote rate. The touch screen's first visual ballot image page presented the voters with the first of the federal races, the U.S. Senate race. The second visual ballot image page showed at the top the last federal race, the U.S. Congressional District 13 race. The District 13 race was followed by a highly visible header for the slate of statewide office races that started off with the Governor/Lt. Governor's race followed by its long list of candidates.

As noted earlier, the iVotronic touch screen provides voters with an opportunity to change or correct their vote selections on the review pages, prior to casting their vote. During the parallel testing of the sample Sarasota County iVotronic touch screens, the touch screens accurately recorded each test voter's selection when a test voter chose to make a selection in a race and cast a vote.²⁵ The audit team could not determine definitively whether the prominently displayed "STATE" header caused voters to overlook the federal District 13 race at the top of the ballot page.

A comparative review of the undervote rate for absentee ballots voters in Sarasota County for the District 13 race showed no demonstrable difference between the undervote rates for absentee ballot voters in Charlotte, DeSoto, Hardee, and Manatee counties who also had the District 13 race on their ballots.

²¹ Software Review and Security Analysis of the ES&S iVotronic 8.0.1.2 Voting Machine Firmware, February 2007, available at: <http://election.dos.state.fl.us/>

²² Minimum Security Procedures for Voting Systems – Sarasota County, Florida, Revised June 2006.

²³ Rule 18-2.015 Minimum Security Procedures for Voting Systems, Florida Administrative Code, available at: <http://election.dos.state.fl.us/laws/AdoptedRules/ElectionsRules.shtml>

²⁴ Technical Advisory – Enhancements to Voting Systems Security Procedures, 3/03/06, Division of Elections, available at: <http://election.dos.state.fl.us/votemeth/index.shtml>

²⁵ Parallel Test Summary Report – Sarasota County, Florida - 12/18/06, Division of Elections, available at <http://election.dos.state.fl.us/index.html>

However, an examination of the undervote rate for voters using the Diebold TSx touch screen in Hardee County showed an undervote rate of 20.7% for the District 13 race.²⁶ This rate was based on the reported results of 12 undervotes out of the 58 votes that were cast on the Diebold TSx touch screen. In contrast, the undervote rate for the District 13 race in Hardee County was 5.6% for votes cast and tabulated on its optical scan voting system. This rate was based on a reported 253 undervotes out of 4,526 votes cast.²⁷

In examining the Diebold TSx touch screen ballot layout, the audit team noted that the layout consisted of a two-column presentation. The first ballot image page contained the federal races in the first column, leading off with the U.S. Senate race. The U.S. Congressional District 13 race appeared at the very bottom of the first column. The second column on the first page started off with the state races including the Governor/Lt. Governor race followed by the race for Attorney General. This layout and a similarly high undervote rate in Hardee County for the touch screen suggest the strong likelihood that like the ballot layout for Sarasota County, a non-optimal ballot design may have contributed to the undervote in Hardee County as well.

The audit team recognizes that a well-designed ballot layout is an important component of the voting process and that the ability of a voting system to accurately reflect the voter's intent to make a selection is inextricably tied to ballot design. The audit team recommends further in-depth review and study of this area which may also assist in the development of ballot design guidelines for use by election officials.

VI. CONCLUSION

Based on the foregoing, the audit team found no evidence to suggest or conclude that the Sarasota County iVotronic touch screens failed to accurately capture votes in the U.S. Congressional District 13 race, that a malicious code²⁸, or that the certified voting system was compromised or changed other than as certified or operated other than in the manner expected. The audit team found no evidence to suggest or conclude that the certified elections results are not an accurate reflection of the votes cast and tabulated.

Furthermore, the audit team found the Sarasota County Supervisor of Elections and staff conducted themselves appropriately, documented their processes well, and followed established procedures and standard practices, with relatively few noted exceptions. In order to assist Sarasota County in its continuing commitment to improve the security and integrity of the voting system and the election process, the audit team recommends the following:

- Enhance the top-level security procedures with written supplemental lower-level work instructions in order to memorialize Sarasota County's unique processes.
- Develop a more reliable methodology for capturing voter history

²⁶The audit team specifically examined a breakdown of Hardee County's recount data posted on the county's website http://www.hardeecountyelections.com/SOVC_REPORT_PAGE.htm

²⁷Note that unlike Sarasota County which uses solely touch screen voting systems, Hardee County is a county that uses primarily the Diebold Accuvote optical scanner voting system but provides a touch screen (the Diebold TSx) in each polling place to comply with federal requirements for voter accessibility for the disabled under the Help America Vote Act.

²⁸Classes of malicious code include viruses, worms, 'Trojan horses' or other harmful or intrusive auto-executable software.

- Revamp the procedure to prohibit the closing of touch screens prior to closing the polls.
- Require the production of the early voting results tape on election night after the polls close.
- Develop formal security training procedures for the elections staff and poll workers.

Finally, in light of the national attention garnered by the events surrounding the Sarasota County undervote rate in the U.S. Congressional District 13 race, and the momentum for further state and federal election reform, the audit team strongly recommends that human factors in the voting process and the interaction between voters and voting systems not be underestimated. Further in-depth study is warranted in this area, particularly in the area of effective ballot design.

Appendix A

**Florida Department of State Letters Regarding Voting System Audit
in Sarasota County, Florida**

- Letter from Secretary of State Sue M. Cobb to Sarasota County Supervisor of Elections, Kathy Dent; November 9, 2006
- Letter from Secretary of State Sue M. Cobb to Sarasota County Supervisor of Elections, Kathy Dent; November 11, 2006
- Letter from Secretary of State Sue M. Cobb to Sarasota County Supervisor of Elections, Kathy Dent; November 16, 2006

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STATE OF FLORIDA
DEPARTMENT OF STATE

JEB BUSH
Governor

SUE M. COBB
Secretary of State

November 9, 2006

The Honorable Kathy Dent
Sarasota County Supervisor of Elections
101 South Washington Blvd.
Sarasota, FL 34236-6940

Dear Supervisor Dent:

As Division of Elections Director Roberts discussed with you today, pursuant to the Department of State's authority under Sections 101.5607(1)(c) and 101.58(2), Florida Statutes, I am directing members of my staff to conduct an audit of Sarasota County's voting system and attendant procedures with regard to the United States Congressional District 13 race.

The Secretary's Chief of Staff Heidi Hughes and Chief of the Division of Elections Bureau of Voting Systems Certification will be in Sarasota today for discussion and preliminary conversations.

We appreciate your invitation for our staff to observe any recount of this race, should one be ordered, along with you and your staff's full cooperation as we conduct the audit.

At this time it is expected that the members of our audit team will include:

David Drury, Chief of the Bureau of Voting Systems Certification
Danielle Scoggins, Senior Management Analyst
Richard Harvey, Government Operations Consultant
Sharon D. Larson, Deputy General Counsel

Sincerely,

Handwritten signature of Sue M. Cobb in black ink.

Sue M. Cobb
Secretary of State

2444



JEB BUSH
Governor

STATE OF FLORIDA
DEPARTMENT OF STATE

SUE M. COBB
Secretary of State

November 11, 2006

The Honorable Kathy Dent
Sarasota County Supervisor of Elections
101 South Washington Blvd.
Sarasota, FL 34236-6940

Dear Supervisor Dent:

We thank you for your continued commitment and cooperation in the process of examining Sarasota County's voting systems and procedures with regard to the United States Congressional District 13 race. Given our level of concern about this race and the number of voters who did not choose a candidate, we are paying very serious attention to the matter. An exacting and thorough audit is mandated and will be executed in an expeditious manner. The Department, working with you and your staff, will look into all possibilities to understand whether the number of undervotes in this race is indicative of an anomaly. Our shared goal is to ensure the integrity and accuracy of voting systems and elections in Florida.

Certain audit activities can be commenced immediately, including manual review of all relevant records and parallel testing to simulate election day conditions using Sarasota County direct recording electronic (DRE) touchscreens prepared for, but not used in, the general election. Based on preliminary discussions between you and Department staff, we have determined to proceed with the audit in the following manner: Florida Division of Elections, Bureau of Voting Systems Certification personnel will conduct an audit of the Sarasota County voting system beginning on November 13, 2006. The audit team, led by Mr. David Drury, Bureau Chief, may be supplemented by additional personnel as the need arises. The structure of this audit will not interfere with the conduct of any recount in the 13th Congressional District.

In addition, the audit team will conduct at least two parallel tests of the iVotronic voting equipment. The first of these tests will utilize at least four of the iVotronic DRE touchscreens that were held in reserve and not deployed on Election Day. The second such test will utilize actual touchscreens used during the election once the recount is complete. Each of these tests will require 14 hours to complete and it is anticipated that the first test will be conducted and completed on Wednesday, November 15, 2006. Each parallel test will utilize the actual ballot images and event logs from the Sarasota County general election as the test script. These items will be extracted from the Election Day audit data of those iVotronic touchscreens identified by

R. A. Gray Building • 500 South Bronough Street • Tallahassee, Florida 32399-0250
Telephone: (850) 245-6500 • Facsimile: (850) 245-6125 • <http://www.dos.state.fl.us>

The Honorable Kathy Dent
November 11, 2006
Page 2

the team based on precinct demographics and the magnitude of undervotes in the 13th Congressional District. Results from the first parallel test should reveal the presence of an anomaly within the touchscreen if such an anomaly is present. The second parallel test is intended to confirm the results of the first parallel test.

The audit plan includes elements that encompass the election process, ballot accounting, tabulator performance, and forensic analysis. The audit will focus on the following areas: the precinct count equipment, the central count (absentee) equipment, the ES&S Unity System (election definition and tabulation), the installed iVotronic firmware and source code, the Sarasota County elections security procedures, event logs, and the logic and accuracy records. The intent of this portion of the audit is to ascertain whether a process error or malicious action influenced the number of undervotes.

Our audit team has extensive expertise. We have enclosed biographical information on the Division of Elections technical staff participating in the audit. Information on further staffing will be forthcoming.

We all agree that the audit and testing procedures are critical steps in determining accuracy of the election and assuring voters that they can be confident in the results.

Sincerely,

Sue M. Cobb

Sue M. Cobb
Secretary of State

Attachment



FLORIDA DEPARTMENT OF STATE
Sue M. Cobb
Secretary of State

Florida Department of State Audit Team
~Sarasota County, November 13, 2006~

David R. Drury is the Bureau Chief of the Bureau of Voting Systems Certification for the Florida Division of Elections. As such, Mr. Drury serves as the team leader in both voting system certifications and auditing. Mr. Drury holds Bachelor degrees in Mechanical Engineering, History and Political Science along with a Masters in Business Administration. Mr. Drury has thirteen years of research, design and development experience with Boeing and GE Aircraft Engines which included computer modeling and an extensive hardware testing background. Mr. Drury earned several "GE Outstanding Achievement Awards" and was nominated for "GE Aircraft Engines Product Quality Award" during 1990 at the Evendale, OH facility. Mr. Drury also acquired experience in the electronics industry while at General Dynamics Tallahassee Operations where he served as a Sr. Industrial Engineer - ISO 9000 Management Representative, and Lead Auditor. During that time, Mr. Drury also served as an adjunct professor at the FAMU - FSU College of Engineering where he taught statistical quality control. Immediately prior to joining state government, Mr. Drury was Director of Quality Assurance for Martin Electronics, Inc. In March 2004, Mr. Drury joined the Bureau of Voting Systems Certification as a Sr. Management Analyst and was promoted to Bureau Chief in December, 2005. Mr. Drury is experienced with process audits, performance audits, and voting system audits.

Danielle Scoggins earned her Bachelor of Science Degree in Management Information Systems from Florida State University's College of Business in 2002. Prior to joining the Bureau of Voting Systems Certification, Ms. Scoggins worked for the Florida Department of Revenue for five years in the SUNTAX program and Internet Service Provider department. During that time Ms. Scoggins gained experience with auditing system reports, establishing user requirements, developing prototypes, testing system integrity, and performing analytical reviews of software requirements and design documents. Additionally, Ms. Scoggins has experience with program planning and evaluation. Ms. Scoggins assumed the Sr. Management Analyst position in March, 2006. Ms. Scoggins' current responsibility is managing the functional test activities during certification events.

Richard Harvey holds a Bachelors degree from Florida State University. Mr. Harvey joined the Division of Elections in 2004 working with voter registration and voter assistance groups. Mr. Harvey was promoted in 2005 and again in 2006 to a Government Operations Consultant position. Mr. Harvey is responsible for reviewing and maintaining voting system acquisition filings, reviewing voting system applications, and researching new technology voting systems. Mr. Harvey has considerable experience with precinct tabulation devices and is considered a

Precinct Equipment Specialist. Mr. Harvey provides technical support to Florida's 67 counties and has conducted training classes on the various precinct voting equipment. Mr. Harvey is a member of the Florida voting system certification test team.

Rosefta Cade has a Bachelors degree in Computer Information Systems with a background in MS Windows 2000 and XP. During her college years, Ms. Cade was involved with software development, network administration and troubleshooting system problems. Upon graduation, Ms. Cade worked for the Florida Department of Management Services and worked as a computer system specialist at the Florida Department of Health. In that position, Ms. Cade was responsible for configuring new and existing systems and maintaining the test database. Ms. Cade joined the Bureau of Voting Systems Certification in May 2006 and is a member of the voting system certification test team. Ms. Cade's primary responsibility is focused on the election management system software.

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STATE OF FLORIDA
DEPARTMENT OF STATE

JEB BUSH
Governor

SUE M. COBB
Secretary of State

November 16, 2006

-- The Honorable Kathy Dent
Sarasota County Supervisor of Elections
101 South Washington Blvd.
Sarasota, FL 34236-6940

Dear Supervisor Dent:

Now that Judge Economou has cleared the way for the state's audit to proceed, we will determine when to reschedule parallel testing. In the meantime, in the interest of maintaining a transparent, fair and meaningful process, our experts will continue interacting with outside experts and experts made available by the candidates.

Division of Elections staff will coordinate with you and your staff to arrange a time for parallel testing after the recount process is complete. As the audit will be conducted in an open and public manner, once a parallel testing date is determined, we will provide sufficient advance notice to the public in order to allow interested parties to observe.

We appreciate your continued cooperation and commitment to this process.

Sincerely,

Sue M. Cobb

Sue M. Cobb
Secretary of State

Appendix B

Audit Plan

BVSC provided the following audit plan to the Supervisor of Elections:

Audit Plan
Sarasota County Florida (November 13 - TBD, 2006)

Note: This audit plan may change in response to the in-process audit findings. Activities that require access to the deployed equipment will be performed upon completion of the recount process.

Opening meeting

- Purpose and scope
- Team introduction
- Available resources
- Audit transparency
- Audit overview
 - Examination of the precinct count equipment
 - Examination of the central count equipment
 - Verification of the election management system (ES&S Unity Voting System) software
 - Examination of the Sarasota County's elections security procedures and activities
 - Parallel tests (*simulations of election day voting*)
 - Closeout meeting

Precinct Count Examination

Obtain the following:

- Precinct list
 - List of voting devices at each precinct
 - Equipment tracking logs for election media / equipment
 - Zero and results tapes for all the voting devices (original and recount)
 - Number of spoiled ballots that occurred at each precinct, if any
 - Number of provisional ballots issued at each precinct, if any

Examine precinct voter rolls

- Manually count number of voter signatures

Examine precinct zero tapes

- Verify counters are zero
 - Note the time/date stamp & signatures

Examine precinct results tapes

- Verify the public count from the protective counts using the zero and results tapes
 - Note the time/date stamp & signatures on the results tape

Examine precinct results and precinct voting equipment

- Select at least 45 DREs used during election day and obtain their ballot image reports
(*This selection TBD based on precinct demographics and magnitude of 13th Congressional District undervote*)
 - Manually count the number of votes for the 13th Congressional District race from the ballot image report
 - Determine the number of undervotes for this race
 - Compare the observed 13th Congressional District undervote total to the results tape
 - Manually count the number of votes for additional randomly selected contest/candidates
 - Manually count the number of ballots cast
 - Obtain the event logs for the selected DREs and manually count the number of ballots cast
 - Verify the ballot count from the event logs, the ballot images, and the results tapes match each other
- Sum the total ballots cast from the results tapes for each precinct
 - Compare the precinct ballot totals with the totals from the precinct voter rolls
 - Compare the precinct ballot totals with the reported totals from the Election Reporting Manager (ERM)

Repeat the above activities for early voting except sample size to be at least 2 DREs

Examine the precinct voting equipment

- Download the EEPROM .bin files from each of the selected DREs
 - Examine the EEPROM files for any evidence of disagreement between the redundant memory chips

Extract the firmware .bin file from one of the selected DREs

*(*The following activities to be performed at Division of Elections in Tallahassee, FL)*

*Obtain the firmware EEPROM .bin file from the Division of Elections' 12th DRE

*Hash the .bin file segment that contains the firmware for both voting devices

*Compare the hash results to verify the installed firmware

Perform an independent source code review of the firmware

(The independent review will be performed by TBD)

Central Count Examination by precinct, if time permits

Manually count the number of acceptable absentee ballot signatures

Manually count the number of acceptable absentee ballots

Compare the signature count to the absentee ballot count

Manually count the votes for the 13th Congressional District from at least one precinct.

ES&S Unity Examination

Obtain a directory listing of the Unity server and workstations

Obtain a copy of the registry

Obtain a copy of the operating system logs and the Unity log files

Obtain screen shots of each Unity module's settings

Examine the ERM precinct results reports and compare with the manual counts

Compare the precinct election day totals, provisional totals, and absentee totals

Perform a SHA-1 hash of the installed static files on the server and workstation

*(*The following activities to be performed at DOE/Tallahassee)*

*Compare the hash message with the hash message of the installed State certified software

*Examine the registries and system logs

Security Procedures and Work Instructions

Examine the security procedures

Examine the work instructions and relevant objective evidence (e.g., logs, inventory, seals, etc.)

Examine the conduct of elections report

Compare the conduct of elections with the documented procedures/work instructions

Examine the reported issues concerning the precinct devices

Examine the security camera video tapes and access logs

Perform the first of two parallel tests by performing the following:

(Note: This first parallel test will be performed as soon as possible. However, the actual DREs that were deployed on election day will not be available until after the recount process is complete. A second parallel test will be performed utilizing the DREs that were deployed on election day once these devices become available.)

Identify four DREs that were deployed on election day

(This selection TBD based on precinct demographics and magnitude of 13th Congressional District undervote)

Select four DREs that were not deployed on election day

Program PEBs and election media to reflect the election definition/parameters of the deployed DREs

Obtain the event log and ballot image report for each of the deployed DREs

Prepare the test scripts based on the ballot images

Prepare a time-line for casting ballots based on the event log for each deployed DRE

Obtain four video cameras / recorders

Organize four two-person teams with each team assigned to a DRE

(One person to enter votes and one person to verify vote selection and verify the review page)

Determine optimal setup of the video cameras / recorder for each DRE and team

(Video image should clearly display the entire touch screen surface without obstruction during the voting process)

Clear the PEBs, election media, and DREs

Perform the following at the start of the designated test day:

Start video recording

Set the date to November 7, 2006

Set the DREs for election mode

Open the polls at the indicated time and obtain the zero tapes

Select candidates/positions per the test script

For the undervoted 13th Congressional District race perform the following:

Randomly select one or the other candidate or neither

Compare this selection with the review screen and document

Change the selection to match the test script

Examine the review screens to verify its contents match the script based on the ballot image
 Cast ballot at the designated time
 Document any discrepancy and/or deviation from the test script
 Repeat for each ballot cast on election day
 Close the polls at the indicated time and obtain the results tapes
 Terminate video recording
 Resolve discrepancies (if any)
 Summarize finding(s) and observations

Perform the second parallel test once the deployed DREs become available by performing the following:

Select four DREs that were deployed on election day
(This selection TBD based on precinct demographics and magnitude of 13th Congressional District undervote)
 Obtain the same PEBs and election media that were used with these DREs
 Obtain the event log and ballot image report for each of the deployed DREs
 Prepare the test scripts based on the ballot images
 Prepare a time-line for casting ballots based on the event log for each DRE
 Obtain four video cameras / recorders
 Organize four two-person teams with each team assigned to a DRE
(One person to enter votes and one person to verify vote selection and verify the review page)
 Determine optimal setup of the video cameras / recorder for each DRE and team
(Video image should clearly display the entire touch screen surface without obstruction during the voting process)
 Clear the PEBs, election media, and DREs
 Perform the following at the start of the designated test day:
 Start video recording
 Set the date to November 7, 2006
 Set the DREs for election mode
 Open the polls at the indicated time and obtain the zero tapes
 Select candidates/positions per the test script
 For the undervoted 13th Congressional District race perform the following:
 Randomly select one or the other candidate or neither
 Compare this selection with the review screen and document
 Change the selection to match the test script
 Examine the review screens to verify its contents match the script based on the ballot image
 Cast ballot at the designated time
 Document any discrepancy and/or deviation from the test script
 Repeat for each ballot cast on election day
 Close the polls at the indicated time and obtain the results tapes
 Terminate video recording
 Resolve discrepancies (if any)
 Summarize finding(s) and observations

Closeout Meeting
 Issue the audit report

Appendix C

Parallel Test Summary Report



FLORIDA DEPARTMENT *of* STATE

Division of Elections

**Parallel Test Summary Report
for
Sarasota County, FL**

**November 7, 2006 General Election
Using
Election Systems and Software, Inc.
Unity Version 4.5, Version 2**

December 18, 2006

Prepared by:

Bureau of Voting Systems Certification

drd/

Parallel Test Summary Report
for
November 7, 2006 General Election held in Sarasota County, FL
using
Election Systems and Software, Inc.
Unity 4.5 Version 2
Audit location: Sarasota, FL
Test Dates: 11/28/06 to 12/01/06

EXECUTIVE SUMMARY:

Florida Division of Elections conducted two parallel tests of the iVotronic touchscreens in an effort to replicate the undervote count observed for the 13th Congressional District race during the November 7th, 2006 General Election held in Sarasota County. The parallel tests focused on the iVotronic touchscreen's ability to accurately record a voter's selections as presented to the voter on the touchscreen's ballot review pages. In addition, the parallel tests also examined various complaints regarding a voter's ability or difficulty in making his or her vote selections.

Bureau of Voting Systems Certification (BVSC) identified four touchscreens to examine, one each from four precincts selected by the Jennings and Buchanan organizations (two precincts each) plus a fifth touchscreen to be used for ad hoc testing. Sarasota County Elections Staff provided BVSC with the election day ballot images and event logs for the five selected touchscreens. BVSC utilized these records to develop the test scripts (i.e., the number of ballots to cast, the vote selections for each ballot, and the timeline for casting the ballots.) BVSC designed the test scripts to accomplish two objectives: to replicate election day with respect to the ballots cast and the frequency of use for each machine (except the ad hoc unit) and to identify any latent issues with respect to making a vote selection. However, the selected touchscreens did not become available for testing until December 1, 2006. Therefore, the first of the two parallel tests utilized five touchscreens from the pool of touchscreens that were not deployed during this election. This pool of touchscreens is the same election-ready units that were available as replacement units during this election.

Division of Elections (DOE) conducted the first parallel test on November 28, 2006 and the second parallel test on December 1, 2006. The second parallel test utilized the five selected units that were deployed on election day. The first parallel test results were compared to the expected election day results with reconciliation of the differences taking place during November 28th and 29th, 2006 in the presence of technical representatives from both the Jennings and Buchanan organizations and the media. All the vote differences experienced during this test were the result of two script errors and eight vote selections that were not entered according to the test script. The second parallel test results were reconciled on December 5, 2006 in the presence of the Jennings' technical representative and the media. The technical representative for the Buchanan organization was not present. All the vote differences experienced during this test were the result of one incorrectly documented vote selection for the ad hoc machine and two vote selections that were not according to the test script. In addition, a review of both parallel test videos did not identify any latent issues with respect to making a vote selection.

In summary, the test results show that the iVotronic touchscreens accurately captures the voter's selection as presented to the voter on the review screens. These tests did not identify any latent problems with respect to vote selection or the accuracy of the touchscreens' tabulation of the votes as cast.

BACKGROUND:

Sarasota County, Florida experienced an unexpected number of undervotes for the 13th Congressional District race during the 2006 General Election. Although a number of factors may have contributed to this undervote total, interested parties are concerned that the undervote for this race suggests that the voting equipment may not have correctly captured the voters' selection.

In response to the Sarasota County Supervisor of Elections' request and at the direction of the Secretary of State, the Division of Elections (DOE) developed an extensive audit plan to ascertain if a process, definition, machine, or tabulation anomaly contributed to this contest's undervote total. As part of DOE's audit, BVSC utilized a test activity known as a "parallel test." Typically, a parallel test involves a random selection of voting devices from the population of voting devices destined for deployment on election day. This test sample would be segregated from the actual deployed devices, but otherwise would undergo the same election day activities in "parallel" with the deployed voting devices, except the voters would consist of a test team and the ballots cast would be defined by a predetermined test script. The intent of this parallel activity is to ascertain the accuracy and reliability of the deployed voting devices with consideration given to ballot style, layout, coding, demographics, and operation.

OBJECTIVE and SCOPE:

The application of the parallel test technique for this audit deviated from the classical parallel test in that the test scripts were based on the audit data extracted from a sample of iVotronic touchscreen devices. In addition, the test script also took into consideration the voting experience of several voters that were described in various news articles. Because documents describing voter complaints were not available for review, DOE relied solely on the published accounts bearing in mind that some of these accounts actually verified the voter's acknowledgement to undervote the 13th Congressional District race.

The audit data for the iVotronic touchscreen consists of two records: the event log and the ballot image file. The event log contains the timing element for each ballot cast. The ballot image file contains the voter selections as they appeared on the review screen at the time the voter pressed the "VOTE" button. However, the arrangement of the ballot images is random. Therefore, these ballot images cannot be associated with the time that the ballot was cast.

BVSC requested each candidate to provide a list of two to four precincts that they believed warrant close examination. From this list of precincts, BVSC staff identified four iVotronic touchscreens (two from Jennings' list and two from Buchanan's list) that experienced the highest undervote within their respective precinct. This selection should enhance the probability of revealing the undervote anomaly should it exist. BVSC personnel then developed a test script from the audit data extracted from each of these machines. The four iVotronic touchscreens and their precinct are:

<u>iVotronic SN #</u>	<u>Precinct</u>	<u>Precinct selected by:</u>
V0105192	105	Jennings' organization
V0106437	118	Jennings' organization
V0117973	76*	Buchanan's organization
V0106866	113*	Buchanan's organization

* Note: The Buchanan organization recommended a random selection. BVSC performed this random selection utilizing MS Excel. The Jennings' organization also identified precincts 117 and 31 in their initial selection and later added precincts 44 and 74.

TEST PREPARATION:

BVSC conducted two parallel tests each consisting of four iVotronic touchscreens that followed a predetermined test script and a fifth iVotronic machine that underwent an ad hoc vote selection process focused on the 13th Congressional District race. BVSC developed the test scripts based on the event log and ballot images from the four iVotronic touchscreens identified above. The first parallel test utilized a random selection of touchscreens from the pool of touchscreens that were not deployed during the general election. This pool consisted of six non-ADA touchscreens and eighteen ADA touchscreens. An ADA touchscreen is identical to a non-ADA touchscreen except that the ADA touchscreen has an optional audio ballot capability and includes a three-button voter interface just below the touchscreen. Sarasota County has no restriction regarding the utilization of an ADA touchscreen for regular voting. Thus, such a device may be used by a vision impaired voter as well as those voters that do not require the ADA enhancement. BVSC included an ADA touchscreen in this first parallel test based on this information and the limited number of non-ADA units that were in the pool of units that were not deployed during this election. BVSC selected one ADA iVotronic touchscreen and four non-ADA iVotronic touchscreens from this pool. The one ADA touchscreen and three non-ADA touchscreens were tested using the predetermined scripts and the remaining touchscreen served as the ad hoc test article. The ad hoc test script was a random vote pattern along with a specific vote pattern for the 13th Congressional District race, all of which was documented by a second individual on preprinted blank sample ballots. The ad hoc tester randomly selected a vote pattern from ten predetermined vote patterns for the 13th Congressional District race for each ballot cast. BVSC tabulated the ad hoc votes that were manually recorded on the sample ballots and compared the totals with the tabulated results that were printed from the ad hoc unit. The election night results for the selected deployed touchscreens served as the baseline results for comparison with the first and second parallel test results.

The five non-deployed touchscreens selected for the first parallel test are:

iVotronic SN #
V0105917
V0106549
V0106923
V0105124
V0106978 (ADA)

The second parallel test utilized the four actual iVotronic touchscreens deployed on election day plus a fifth touchscreen from precinct 117 (SN # V0106366) for the ad hoc exercise. An alternate consideration was precinct 31 (SN # V0106117) which served as a backup test unit should one or more touchscreens fail during the second parallel test. For the second parallel test, BVSC used the same master personalized electronic ballots (PEB), poll worker activated PEBs, and compact flash cards that were used by these machines on Election Day.

AD HOC Vote Patterns:**Vote Pattern B-1**

Select Jennings the first time the race is presented to the voter.

Return to the race from the review screen after all other selections are made by paging back and change final selection to Buchanan.

Verify Buchanan is the selection indicated on the review screen prior to casting the ballot.

Vote Pattern B-2

Select Jennings the first time the race is presented to the voter.

Return to the race directly from the review screen after all other selections are made and change final selection to Buchanan.

Verify Buchanan is the selection indicated on the review screen prior to casting the ballot.

Vote Pattern J-1

Select Jennings the first time the race is presented to the voter.

Return to the race from the review screen after all other selections are made by paging back and verify selection is still Jennings.

Verify Jennings is the selection indicated on the review screen prior to casting the ballot.

Vote Pattern J-2

Select Jennings the first time the race is presented to the voter.

Return to the race directly from the review screen after all other selections are made and verify selection is still Jennings.

Verify Jennings is the selection indicated on the review screen prior to casting the ballot.

Vote Pattern J-3

Select Buchanan the first time the race is presented to the voter.

Return to the race from the review screen after all other selections are made by paging back and change final selection to Jennings.

Verify Jennings is the selection indicated on the review screen prior to casting the ballot.

Vote Pattern J-4

Select Buchanan the first time the race is presented to the voter.

Return to the race directly from the review screen after all other selections are made and change final selection to Jennings.

Verify Jennings is the selection indicated on the review screen prior to casting the ballot.

Vote Pattern J-5

Do not make a selection the first time the race is presented to the voter.

Return to the race from the review screen after all other selections are made by paging back and change final selection to Jennings.

Verify Jennings is the selection indicated on the review screen prior to casting the ballot.

Vote Pattern J-6

Do not make a selection the first time the race is presented to the voter.

Return to the race directly from the review screen after all other selections are made and change final selection to Jennings.

Verify Jennings is the selection indicated on the review screen prior to casting the ballot.

Vote Pattern U-1

Select Jennings the first time the race is presented to the voter.

Return to the race from the review screen after all other selections are made by paging back and change final selection to an undervote.

Verify an undervote is the selection indicated on the review screen prior to casting the ballot.

Vote Pattern U-2

Select Jennings the first time the race is presented to the voter.

Return to the race directly from the review screen after all other selections are made and change final selection to an undervote.

Verify an undervote is the selection indicated on the review screen prior to casting the ballot.

Note: Vote pattern J-4 was in error for the first parallel test. The first instruction "Select Buchanan..." actually stated "Select Jennings...." BVSC corrected the vote pattern (correct version shown above) for the second parallel test.

ELECTION SETUP:

DOE conducted the parallel tests at Sarasota's Interim Government Operations Center (IGOC) located at 1001 Sarasota Center Blvd in Sarasota, Florida. The setup for both parallel tests involved placing the 12 inch iVotronic touchscreen in a vertical orientation mounted on a modular wall unit. This wall unit is in a small room located in the Sarasota Elections storage facility within the IGOC. That room served as the test area and contained windows on two parallel sides with the modular wall being located below the windows on one side. This allowed the public to witness the test team's interaction with the touchscreens from the opposite set of windows. This arrangement also facilitated video taping the test and the observations by the designated representatives from both the Jennings and Buchanan organizations. A video production company utilized five cameras w/monitors to record the testing with one camera/monitor devoted to each touchscreen. Sarasota election staff also located two additional wide screen monitors in the public viewing area. Thus, the public was able to observe all five monitors located in the test area along with the two large monitors in the public area and also directly observe the interactions of the test team with the touchscreens. Two members of the test team were positioned to one side of each touchscreen. One team member made selections per the test script or randomly voted on the ad hoc unit while the second team member documented the actions taken. The test team consisted of twelve volunteers from the Division of Elections, ten of which were located in the test area and the remaining two serving as rotating replacements. The majority of the volunteers did not have any prior experience with touchscreens. BVSC staff gave the test team a brief 15 minute orientation just prior to beginning the first parallel test. In addition, the test team had no prior test experience as evidenced by its lack of documentation and note taking during the first parallel test. Based on the constructive feedback provided by the Jennings organization and the experience gained from the first parallel test, the test team substantially improved its test documentation during the second parallel test.

The iVotronic serial numbers, test script identification, and camera position were as indicated below:

1st Parallel Test -- Tuesday November 28, 2006**Non-deployed**

<u>iVotronic Sn #</u>	<u>Camera #</u>	<u>Script based on Precinct # / (iVo Sn #)</u>
V0105917	1	n/a <i>ad hoc test script</i>
V0106549	2	105 / (V0105192)
V0106923	3	118 / (V0106437)
V0105124	4	113 / (V0106866)
V0106978 (ADA)	5	76 / (V0117973)

2nd Parallel Test -- Friday December 1, 2006**Deployed**

<u>iVotronic Sn #</u>	<u>Camera #</u>	<u>Precinct</u>
V0106366	1	117 <i>ad hoc test script</i>
V0105192	2	105
V0106437	3	118
V0106866	4	113
V0117973	5	76

Key Elements:

A number of media reports described problems that several Sarasota voters encountered in making their selections and/or in making corrections to their selections as presented on the review screens. BVSC utilized the test scripts and the ad hoc script to replicate the published anomalies. Although a number of these voters indicated a problem with their initial and final selection for the 13th Congressional District race, the primary focus of the parallel tests is the review screens. The review screens present the voter with the voter's selections. It is this review screens' list of voter selections that the iVotronic records when the voter presses the "VOTE" button to cast the ballot. Therefore, the primary question concerning the accuracy of the iVotronic touchscreen is whether the review screens as presented to the voter and ultimately verified and cast by the voter is in fact what was stored as the ballot image. All other issues involving the vote selection process do not alter the fact that it is the selections that are presented on the review screens that are ultimately cast and tabulated. Thus, a review screen that shows a selection for any candidate and/or measure that is not captured in the ballot image is a machine error. Likewise, any review screen that does not show a selection that is captured within the ballot image is also a machine error. The vote selection process does not capture that selection as a vote until the voter advances through all the review pages and has had an opportunity to observe the voter's selections. Then, and only then, will the vote button become enabled and allow the voter to cast their ballot. Upon reaching the review screen, an undervote is visually presented to the voter as "No selection made" and with the contest checkbox left empty. A third visual report is provided on the non-ADA touchscreens with the "No selection made" in a red text on a white background.

Results:

The initial results from the first parallel test noted the following:

1st Parallel Test – Tuesday November 28, 2006

Non-deployed			
iVotronic Sn #	Script	Variance	Resolution
V0105917	<i>ad hoc test script</i>	None	
V0106549	V0105192	1 extra vote for Jennings 1 less undervote 1 extra vote for Carusone 1 less vote for Klos	Ballot 40, Undervote was voted for Jennings Cause is same as noted for ballot 40 Ballot 35, Vote for Klos was cast for Carusone Cause is same as noted for ballot 35
V0106923	V0106437	3 extra votes for Jennings 3 less undervotes	Ballot 2, Undervote was voted for Jennings Ballot 4, Undervote was voted for Jennings Ballot 6, Undervote was voted for Jennings Causes are same as noted for ballots 2, 4, and 6
V0105124	V0106866	1 extra vote for George 1 less vote for Phillips 1 extra YES vote 1 less undervote	Ballot 67, Vote for Phillips was scripted for George Cause is same as noted for ballot 67 Ballot 5, An undervote was scripted as a Yes Cause is same as noted for ballot 5
V0106978	V0117973	1 extra vote for Jennings 1 less undervote 1 extra undervote 1 less vote for Campbell	Ballot 30, Undervote was voted for Jennings Cause is same as noted for ballot 30 Ballot 34, Vote for Campbell was cast as an undervote Cause is same as noted for ballot 34

2nd Parallel Test – Friday December 1, 2006

Non-deployed			
iVotronic Sn #	Script	Variance	Resolution
V0106366	<i>ad hoc test script</i>	1 extra Yes vote	Ballot 44, Recorded Yes vote on pdf when actual vote was No Cause is same as noted for ballot 44
V0105192	V0105192	1 less No vote 1 extra vote for Crist	Ballot 19, Vote for Davis was cast for Crist Cause is same as noted for ballot 19
V0106437	V0106437	1 less vote for Davis 1 extra vote for Campbell	Ballot 47, Vote for McColium was cast for Campbell Cause is same as noted for ballot 47
V0106866	V0106866	None	
V0117973	V0117973	None	

As noted above, both parallel tests were successful in demonstrating 100% accuracy in recording the vote selections as indicated on the review screens. There were no unresolved anomalies. In addition, attempts to replicate the published reports concerning voter difficulties in making or changing their vote selections did not materialize during this test.

Conclusion:

This series of parallel tests demonstrated that the iVotronic touchscreens did not exhibit pervasive malfunctioning. There are no indications of machine bias or otherwise voting machine faults that would yield rejected legal votes. The claims made that votes were lost due to touchscreen malfunction are not supported by the results of this test. In addition, statistical analysis of the undervote for the 13th Congressional District race may not be a good indicator of a voting machine undervote anomaly. Consider the countywide races for Sarasota County Review Board (Districts 1, 2, 3, 4 and 5) and the Hospital Board Southern District Seat race. If one were to give similar considerations that were used to analyze the 13th Congressional District race in an analysis of the countywide races one would note that these six races exhibited nearly identical percent undervotes except for the Review Board District 2 race where the undervote is over 7% higher representing nearly 10,000 additional undervotes. Examination of the ballot images provides some clues as to voting patterns. All six races had two candidates, one Republican listed first and one Democrat, except the Review Board District 2 race which had an NPA candidate instead of a Democrat. BVSC noted when building the test scripts that a large number of voters that tended to vote a Democratic ballot chose to either vote for the Republican candidate or undervote the contest rather than vote for the NPA candidate. The voters that tended to vote a Republican ballot were largely consistent with their Republican choices for county-wide races. Thus, voting patterns with respect to candidate preference does appear to be a factor that needs consideration in any statistical analysis of the 13th Congressional District race.

Furthermore, criticisms that the test arrangement and/or the test team makeup influenced the accuracy of the touchscreens are unfounded. The purpose of this test is to determine whether the iVotronic touchscreens encountered pervasive malfunctioning or irregularities that contributed to the observed undervote count for the 13th Congressional District race. The unit's orientation, the voter's demographics, and all other external factors may contribute to the voter's and/or the touchscreens ability or inability to make vote selections. However, the process of selecting one's choices is not a measure of the voting device's accuracy. Accuracy is relevant to the information presented to the voter on the review screens and ultimately captured as a ballot cast upon a positive action by the voter after that voter has advanced to all the review screens and after making any desired changes to the

vote selections. The sample size for these tests, a total of ten test units, is more than adequate to identify any machine malfunctions, faulty machines, machine bias or irregularities that could have contributed to the observed undervotes for this race. In summary, there is no evidence to support the position that the IVotronic touchscreens caused votes to be lost.

Appendix D

Audit Documentation Inventory

(Items comprise the public records associated with this audit
with noted applicable exemptions)

<u>File Folder & Contents</u>	<u>Pages</u>
Letters from Division of Elections	19
General iVotronic Custody Logs	166
Observer Sign-in Sheets	25
Tape-Log and Custody Sheets	11
Manual Recount Forms	16
Ballot Custody Batch Log Sheets	44
Provisional (Coded) Ballot Summary	7
Security Procedure <i>(Not a public record)</i>	83
Turnout and Voter History	3
Conduct of Election Report	5
Jurisdictional Canvass	19
ERM Summary Report with Group Detail	16
Audio/Video Purchase Order	11
Parallel Test Communication	8
Parallel Test Custody Logs	25
Ballot by Style	15
1. Sample Ballot	
2. CD - Event Log & Ballot Image PDF Files	
3. Sample Ballot Style 3	
4. Ballot Style List	
Legal Filings -- Case No. 2006 CA 2973 & 06 CA 2996	21
Audit Plan	3
News Articles	23
Zero and Results Tapes (11/28/2006)	60
- 15 Tapes (4 pages legal size paper per Tape)	
Zero and Results Tapes (12/01/2006)	60
- 15 Tapes (4 pages legal size paper per Tape)	
Ballot Image Log	156
Parallel Test Plan	5
Zone Tech Log Sheets	16
11/28/06 Test Results	25
12/01/06 Test Results	26
Event Logs for Sn # 105192, 106437, 106866, & 117973	6
11/28/06 Test Script for ad-hoc touchscreen from Precinct 117	92
11/28/06 Test Script for touchscreen from Precinct 105	55
11/28/06 Test Script for touchscreen from Precinct 118	80
11/28/06 Test Script for touchscreen from Precinct 113	76
11/28/06 Test Script for touchscreen from Precinct 76	40
Precinct Protective and Public Counts	163
- Precinct I-156 & Early Voting	
Precinct Register Reconciliation	20

- 131 Slips	
12/01/06 Test Script for ad-hoc touchscreen from Precinct 117	94
12/01/06 Test Script for touchscreen from Precinct 105	57
12/01/06 Test Script for touchscreen from Precinct 118	80
12/01/06 Test Script for touchscreen from Precinct 113	76
12/01/06 Test Script for touchscreen from Precinct 76	40
Canvassing Board Minutes for November 7, 2006	4
M650 Configuration Report printouts	4
Unity System Logs and Screen Shots	2 CD
Parallel Test Image and Event Log (11/28/06-12/01/06)	1 CD
46 DRE Ballot Image/Event Log Count	86
General Election Parameters <i>(Not a public record)</i>	1 CD
Firmware Chip Comparison <i>(Not a public record)</i>	23
- 2 CDs <i>(Not a public record)</i>	
iVotronic Firmware Installation <i>(Not a public record)</i>	9
- 1 CD <i>(Not a public record)</i>	
Public Record Requests	6
FSU SAIT Statement of Work	28
Precinct Zero and Early Voting Zero Results Tapes Copies	1392
ES&S CD-13 Background Report	31
Parallel Test Summary Report	18
Incident Reports	1,920
This Audit Report	29
FSU/SAIT Software Review and Security Analysis Report	67
FSU/SAIT Report Appendix E, F, & G <i>(Not a public record)</i>	
DVD for Two Parallel Tests	146 DVD's
Cost per DVD set is \$370.84, <i>(subject to change)</i>	

Appendix E

Acronyms

ADA	Americans with Disabilities Act
BVSC	Bureau of Voting Systems Certification
COTS	Commercial-off-the-shelf
DARC	Sarasota County Elections' Data Acquisition and Recording Center
DOE	Florida Division of Elections
DRE	Direct recording electronic
EEPROM	Electrically erasable programmable read only memory
EQC	Election Qualification Code
ES&S	Elections Systems and Software, Inc.
FSU	Florida State University
HAVA	Help America Vote Act
ITA	Independent Test Authority
L&A	Logic and Accuracy test
PEB	Personalized electronic ballot
M100	ES&S Model 100 precinct optical scanner
M650	ES&S Model 650 high speed central count optical scanner (for absentee ballots)
PRF	Sarasota County Elections' Poll Worker Report Form
SAIT	FSU's Security Analysis in Information Technology laboratory
SR-1	Service Release 1 is an update to Unity's Election Reporting Manager (ERM) that allows sorting of ballot images that contain an undervoted universal primary contest (UPC).
UPC	Universal primary contest. The UPC is unique to Florida's closed primary elections and occurs when an office up for election has only one political party with a slate of candidates and that race's winner will go unchallenged during the general election. Under these conditions, this district race appears on all the relevant primary ballots, thus allowing cross-party voting for this race in a closed primary election.
Unity	ES&S's election management system that is composed of the Election Data Manager (EDM), the ballot image manager for ES&S scanners (ESSIM), the Hardware Programming Manager (HPM), the optional Data Acquisition Manager (WDAM), the optional iVotronic image manager (iVIM), and the Election Reporting Manager (ERM).
VEF	Sarasota County Elections' Voting Equipment Facility

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Tab 2

A black and white copy of this document is not official

**STATE OF FLORIDA
DEPARTMENT OF STATE
Division of Elections**

I, Kurt S. Browning, Secretary of State of the State of Florida, do hereby certify that the attached is a true and correct copy of the Software Review and Security Analysis of the ES&S iVotronic 8.0.1.2 Voting Machine Firmware, as shown by the records of this office.



Given under my hand and the Great Seal of the State of Florida, at Tallahassee, the Capitol, this the Ninth day of March, A. D. 2007.

Kurt S. Browning
Secretary of State

DSDE 99 (3/03)

The original document has a reflective line mark in paper. Hold at an angle to view when checking.

If photocopied or chemically altered, the word "VOID" will appear.

State of Florida appears in small letters across the face of this 8 1/2 x 11" document.

2467

**Software Review and Security Analysis of the ES&S iVotronic
8.0.1.2 Voting Machine Firmware**

**Alec Yasinsac David Wagner Matt Bishop Ted Baker
Breno de Medeiros Gary Tyson Michael Shamos Mike Burmester**

**Security and Assurance in Information Technology Laboratory
Florida State University
Tallahassee, Florida**

February 23, 2007

**Final Report
For the Florida, Department of State**

Software Review and Security Analysis of the ES&S iVotronic 8.0.1.2 Voting Machine Firmware

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Software Review and Security Analysis of the ES&S iVotronic 8.0.1.2 Voting Machine Firmware Final Report

1 Executive Summary

On December 15th, 2007 the Florida Department of State (FLDoS) commissioned an independent expert review of the ES&S iVotronic 8.0.1.2 firmware, as documented in the Statement of Work [1]. The team, led by Florida State University's (FSU) Security and Assurance in Information Technology (SAIT) Laboratory, was commissioned to conduct a static software code review as part of the state's audit of the 2007 Florida Congressional District 13 (CD13) election between candidates Vern Buchanan and Christine Jennings. This report is the culmination of that review.

1.1 Administrative Overview

This report describes the findings after an intensive analysis. The subject code was delivered to the review team and active preparations began the day the statement of work was signed. Outside code review members arrived in Tallahassee within three days and intensive code review commenced. A relatively large team, whose members were chosen because of their complementary skill sets, performed the review. SAIT Laboratory members bring strong theoretical and applied information security and electronic voting credentials. Two non-SAIT FSU Computer Science faculty members contribute computer architecture, compiler, and hardware interface expertise. Three outside members with distinguished records in secure software, voting system security, and code review round out the team.

1.2 The Analysis' Scope

Our investigation was limited to the scope specified in the Statement of Work:

The sole purpose of this project is to conduct a scientifically rigorous static software analysis on the iVotronics version 8.0.1.2 firmware source code to determine and identify flaws, vulnerabilities or anomalies, if any, that may have potentially caused, contributed or otherwise created the higher than expected under-vote rate in the District 13 Race. [1]

We focused our efforts on finding voting machine software problems that may have contributed to the CD13 undervote. We received all requested access to iVotronic terminals, PEBs, elections officials, ballot definitions, development engineers, and documentation. Where we needed additional hardware information to understand the software operation, we were given that data. We methodically examined undervote symptoms and followed the evidence to our findings. We considered possible causes hypothesized in the press and Internet sources, as well as others of our own design. We used standard software tools for manual code review and used static analysis tools to automate some of the analysis. In accordance with our plan, the team worked together throughout the intense code review cycle, cross-checking and corroborating hypotheses and findings. We documented our findings during the course of our work, and referred to our daily notes as we prepared this report. While there are no guarantees in this type of analysis of a system as complex as the iVotronic, we examined all aspects of the software that we believed may have contributed to the CD13 undervote.

1.3 Findings Summary

The team's unanimous opinion is that the iVotronic firmware, including faults that we identified, did not cause or contribute to the CD13 undervote. We base this opinion on hundreds of hours of manual code review complemented by automated static analysis and extensive study of the problem symptoms and the execution environment. We traced program execution from terminal

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initialization, through voter selection, to ballot image creation, to ballot image collection. We also investigated the possibility of asynchronous system faults not associated with any particular phase of voting. Our investigation provided no evidence that an iVotronic software malfunction caused or contributed to the CD13 undervote.

We do not claim that these results extend beyond the scope of our investigation. We emphasize that these findings are neither an endorsement nor a repudiation of the iVotronic, the larger class of Direct Recording Equipment (DRE) systems, nor any other form of electronic voting system. We specifically do not contend that these systems are correct or secure beyond the specific opinions that we give herein. This report is concerned solely with the question posed to us regarding the cause of the CD13 undervote in Sarasota County in November, 2006, and we do not claim that these results extend to a broader context.

2 Project Introduction and Background

2.1 Report Organization.

This document represents the total project report. It contains all of our pertinent findings and conclusions and the technical analysis that supports these conclusions. The document is written in two parts. The public part (Sections 1-12 and Appendices A, B, C, and D) constitutes the public report in its entirety; it contains our findings and the analysis to support these findings and is intended for public dissemination. In accordance with the terms of the Statement of Work, we have avoided revealing proprietary information in the public part of the report, and we are careful to avoid revealing information that would describe how to attack an election. The public report stands on its own and reflects the totality of our findings regarding the CD13 undervote.

The private part consists of Appendix E (Non-Pertinent Flaws), Appendix F (Analysis of Anomalous Audit Log Messages Regarding Voter PEBs), and Appendix G (Anonymization of cast vote records in the ES&S iVotronic 8.0.1.2 firmware). Appendices E and F are confidential, as required by the Statement of Work, because they contain vendor-proprietary information; also, Appendices E and G are confidential, as required by the Statement of Work, because they contain information about potential defects that could not have caused or contributed to the CD13 undervote and thus that are not relevant to this investigation. We are providing Appendices E, F and G to the state to allow the state to thoroughly evaluate the iVotronics and to pass on pertinent information to the vendor that will facilitate future improvements to these voting systems.

As indicated in the Statement of Work, we provided some details to the FLDoS and the vendor during the course of our work. We emphasize that the public part of this report contains everything we learned during this review that is relevant to the CD13 undervote.

The main document first gives background information about the undervote observed in the CD 13 race, the investigation, the voting system, and our assumptions. We follow these by describing our findings and conclusions.

2.2 The Software Review Team

2.2.1 The Senior Investigators

2.2.1.1 Ted Baker. Dr. Baker is a Florida State University Professor of Computer Science. For thirty years he has conducted systems-related research and taught hundreds of technical classes regarding machine interactions. He is an expert in device drivers and hardware-software issues.

2.2.1.2 Matt Bishop is a Professor of Computer Science at the University of California at Davis. He

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is an expert in secure software and electronic voting systems, having participated in several widely recognized electronic voting software systems code reviews. His computer security textbook, *Computer Security: Art and Science*, is the acknowledged benchmark against which all others related to this topic are measured.

2.2.1.3 Mike Burmester is an FSU Professor of Computer Science and a co-Director of (SAIT) Laboratory. He is a renowned expert in information security and cryptography, with over thirty year's research experience in computer security related issues.

2.2.1.4 Breno de Medeiros is a Florida State University Assistant Professor of Computer Science. He is an Information Security expert with extensive software experience.

2.2.1.5 Michael Shamos is Distinguished Career Professor of Computer Science at Carnegie Mellon University. He has performed over 115 electronic voting certification examinations for six states, including Pennsylvania and Texas. He frequently testifies before the US Congress and various state legislatures on electronic voting issues.

2.2.1.6 Gary Tyson is a Florida State University Associate Professor of Computer Science. He is an expert in computer architectures and compiler technology.

2.2.1.7 David Wagner is an Associate Professor of Computer Science at the University of California, Berkeley. Like Professor Bishop, he is an expert in secure software and electronic voting systems, having conducted several widely recognized electronic voting software code reviews.

2.2.1.8 Alec Yasinsac is a Florida State University Associate Professor of Computer Science, a co-Director of SAIT Laboratory, and is the lead Principal Investigator on this project.

2.2.1.9 The Statement of Work (SoW) listed Dr. Edward Felten of Princeton University as an initial team member. Dr. Felten made significant contributions to project planning and was invited to participate, but he ultimately did not join the full team.

2.2.2 Team Organization

2.2.2.1 Internal Team Structure and Operation. As detailed in the project plan, six team members (Baker, Bishop, de Medeiros, Tyson, Wagner, and Yasinsac) conducted hands-on code review. Two members (Burmester and Shamos) contributed to project plans, reviewed the process documents, and participated in report preparation. The final report reflects the team's cumulative and unanimous opinion.

2.2.2.2 External Communication and Coordination

2.2.2.2.1 Florida Department of State (FLDoS). As noted in the SoW, FLDoS was entitled to observe the code review process at their discretion; they chose to limit their interaction. FLDoS only interacted with the team at our invitation and they proved to be a valuable information resource, providing precinct reports, election configuration files, general election knowledge, and hardware demonstrations to support our analysis. Their support was consistently prompt and complete. The FLDoS placed no restrictions on our activities within the SoW.

2.2.2.2.2 Florida State University. FSU and SAIT Laboratory hosted the code review and provided invaluable analysis resources and administrative support beginning the first active SoW

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day, extending through the holiday periods (including while the University was officially closed for both the Christmas and New Year's holidays) and into the new year. The spaces were ideal for this type of review and the resources were excellent.

2.2.2.2.3 Election Systems & Software (ES&S). ES&S was an active and effective information resource for this team. Two ES&S iVotronic software developers with intimate knowledge of and experience with the firmware spent one and a half days answering questions and accelerating our understanding of the software structure and flow. We subsequently conversed with these developers by telephone several times.

Additionally, an ES&S hardware specialist met with the team to clarify information and confirm our observations of the hardware architecture and hardware-software interactions. We also had subsequent telephone conversations with other ES&S hardware engineers to answer follow-on questions.

When we sought technical detail, documentation, or clarification, ES&S responded promptly and comprehensively. For example, when we sought compiler information, they provided a listing of source code and the corresponding assembly language side-by-side. These interactions were undoubtedly an important contribution to the project that facilitated our work, accelerated our progress, and heightened confidence in our findings. The vendor offered to provide equipment and resources to allow us to construct proof of concept demonstrations of our hypothesis, but the team declined this invitation. We address specific vendor input and interactions throughout the report.

2.3 The Investigative Process

In accordance with our project plan, the investigation began with a short collaborative planning phase. The team met in the SAIT Laboratory and spent several days examining code, documentation, and symptomatic evidence to understand the problem and to formulate an investigative approach. The resulting plan relied on parallel investigation of reliability and security issues that may have caused or contributed to the CD13 undervote. The team composition provided a natural investigative partitioning. Professors Baker and Tyson focused on hardware interaction, low level software, and architectural issues. Professor Wagner focused on security considerations, Professor Bishop and Professor de Medeiros investigated software faults and security issues, and Professor Yasinsac investigated gap issues not covered by the natural team partitioning. Early in the process we produced an extensive list of scenarios that might have resulted in the observed undervote, and this list formed our investigation to systematically rule out each scenario.

Each code investigator took two complementary research approaches in their specialized area. Each investigator conducted unrestricted code examination. They each spent time analyzing code and following their instincts, with no external limits imposed upon them. This leveraged investigators' analytic strengths and offered the opportunity to reveal subtle or non-intuitive faults.

Additionally, investigators carefully and collaboratively examined evidence and Sarasota-specific symptoms within their areas. Investigators received data from Sarasota that defined the environment, triggered symptom analysis, and validated configuration assumptions. During our investigation, we reviewed problem logs produced on Election Day by Sarasota County poll workers. We also reviewed published studies, press reports, and court proceedings that aided our review. These symptoms led to many observations that constitute the bulk of our findings.

2.4 The CD13 Undervote Details

The CD13 undervote has been the subject of several lawsuits, news articles numbering in the triple digits, and uncounted blog commentaries. While this produced a mountain of information about the

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undervote, facts were elusive. We know that there are approximately 18,000 undervotes, which is more than 13% of the total CD13 vote and is three to ten times the average undervote in other races. There is no dispute that this undervote is abnormal and unexpected and that it cannot be explained solely by intentional undervoting.

The FSU team spent many hours investigating election related documents and information and documented many symptoms that might indicate possible causes. Among these, we noted that the abnormal undervote rate was present in both early and Election Day voting, with a higher undervote rate observed during early voting. The Sarasota Supervisor of Elections (SoE) responded to complaints from voters about problems voting in the CD13 race during early voting by asking poll workers to remind voters to review their ballots. The undervote subsequently diminished on Election Day, suggesting that raising heightened voter attention may have reduced the undervote rate. Precinct logs, in which poll workers make notes, show repeated entries that poll workers reminded voters to give special attention to the CD13 race.

Recorded voter complaints also offered information that contributed to the software analysis process. Precinct logs indicate that voters offered three classes of pertinent comments.

1. The voter selected a candidate in the CD13 race, but claimed that the selection did not appear on the summary page.
2. The voter did not notice the CD13 race at all until it was shown as an undervote on the summary page.
3. Many machines responded slowly (five seconds or more) or not at all, to voters' touches.

These three reported symptoms suggested many hypotheses regarding possible software faults. We investigated numerous other reported symptoms as well. For example, during our review of the Sarasota iVotronic event logs (audit logs), we noticed an anomalous event log entry containing the message "Invalid Vote PEB". We hypothesized causes for this event and traced through the code to find its cause, as detailed in our findings below. We similarly traced other symptoms that we discovered through review of evidence and records such as:

- Event logs
- Ballot image files
- Ballot definition files
- Polling place logs
- Newspaper articles
- Court documents, particularly expert reports
- Blog entries
- Standard software flaw guides
- Standard security flaw guides
- Independent Test Authority reports
- Other historical documents

During our work, we analyzed many hypotheses. These activities included exercising iVotronic terminals, testing personal hypotheses, judging touch and display properties, analyzing machine timing and performance characteristics, and confirming configuration assumptions. The team was given two demonstrations of the iVotronic machines, and several team members later had the chance to experiment with iVotronic equipment configured with the ballot style used in Sarasota

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County in November, 2006. We returned to the hardware several times to compare the machine behavior to our analysis of the source code.

2.5 Speculated Causes for the Undervote

Several papers have been written proposing theories about what may have happened in the CD13 race. We present a few representative theories in this subsection. They are not exhaustive, nor are they mutually exclusive. It is theoretically possible that all of these factors contributed, that none of them did, or that any combination of them did.

2.5.1 Machine or Software Malfunction. This is a general category that includes total machine failure; machine problems that created difficulty for voters; and subtle, even undetectable faults that may have contributed to the undervote. Some political and computer science experts have raised the possibility that a software fault or intentional software intrusion may have caused or contributed to the undervote. For instance, computer security and electronic voting expert Dr. Dan Wallach identified a number of hypotheses regarding potential software or system malfunctions that may have led to the CD13 undervote [2]. The FSU team considered Dr. Wallach's hypotheses in our analysis process.

Similarly, in Ms. Jennings' contest to Congress [3], her team hypothesizes that a software error may have interfered with the transfer of information between the volatile memory where votes are stored during the vote selection process and the non-volatile memory where the votes are retained for extraction at poll closing. The team specifically investigated each of the hypotheses mentioned above, as well as others identified by the team, during this investigation.

2.5.2 Voter Discontent. Another possibility is that voter apathy may have contributed to the undervote. Some argue that the negative tone, both in the primaries [4] where reportedly neither candidates' opponents endorsed the eventual winner, and the subsequent bitterly contested general campaign, resulted in voter apathy in this race. A ballot review conducted by a local newspaper in early December [5] and cited by Electionline.org [6] supports the theory that voter apathy may have combined with the ballot design issues and thereby increased the magnitude of the undervote in the CD13 race. The newspaper article quotes one usability expert as suggesting that straight party voters may be looking for party affiliation rather than candidates, and thus may be less likely to realize that they did (or did not) vote for a specific candidate.

An analysis of the election published this week in the Herald Tribune further supports the findings of the Dartmouth study. The newspaper analyzed every vote cast and discovered that loyal party voters — both Republican and Democrat — were largely responsible for the undervote in Sarasota. Nearly 60 percent of the 18,000 undervotes in the race came from voters who otherwise voted along party lines.[5]

Voter discontent does not explain the difference among the undervote percentages in mail ballots, surrounding counties, and the machine recorded votes. It is possible that voter demographics between more and less densely populated areas may account for part of these differences, but it is widely accepted that these factors do not account for all of the difference.

2.5.3 Event 18 Correlation. An academic study of Sarasota event logs [7] revealed a correlation between the undervote rate on specific machines and occurrences of a specific anomalous event in the audit logs for those machines: specifically, the "Invalid Vote PEB" message, which has also been identified as "Event 18" [7]. In the first week of January, before the report had been released, we had noticed the Event 18 messages in the event logs, investigated them, and established that the causes were (1) a software bug that did not affect the recording or tallying of votes for the Voter

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PEB-Normal Ballot anomaly and (2) poll workers taking a specific action for Event 18 variations. The correlation noted in the paper is not due to any fault in the iVotronic firmware. Our detailed findings supporting this are reported in Section 6.2.1.2 below and in Appendix F.

2.5.4 Ballot Design Issues. Ballot design issues represent another possible cause that emerged soon after the election. Many people speculated that placing a race with only two candidates on the same page along with a race that has many more candidates, without a prominent race title block, could distract some percentage of voters. This theory may also explain voter complaints that they "...did not see the Jennings race..." until they noticed it on the summary page. A recent study argues that ballot design issues are the most likely undervote cause [8] in the CD13 race, a result also supported by an informal experiment reported in Electionline.org [6]:

Ted Selker, director of the Caltech/MIT Voting Technology Project, set up voting machines on the MIT campus and asked random people to vote. Selker told the paper that initial results indicate that the two-candidate race is missed 60 percent of the time when it's dwarfed by the list of gubernatorial candidates.

A clearly confusing aspect of the Sarasota ballot is that the first page contained two long headers separated by a straight line, followed by a large, important race. This structure may pre-dispose voters to a pattern of two long headers separated by a line followed by a large race, leaving the CD13 race unnoticed on the second page. Screen shots of these pages are provided in Appendix A.

Another study [7] questions whether the ballot design theory can explain all the undervotes. That study hypothesizes that machine failures associated with the "Invalid Vote PEB" message (Event 18) may have contributed to the high undervote rate. Our analysis and code review conclusively refutes the Event 18 hypothesis, as detailed in our technical findings below. Unfortunately, neither statistical analysis nor code review can conclusively confirm or refute the ballot design hypothesis itself. Our findings are consistent with, but do not confirm, the ballot design explanation.

2.5.5 Age Variations. In December 2006, a Sarasota newspaper conducted an analysis examining the correlation between age and CD13 undervotes [9]. They found that in "...precincts where the median age was greater than 65, the undervote rate in the congressional race was 18 percent, 40 percent higher than in younger precincts." Some suggest that the undervote-age correlation supports the ballot design hypothesis and refutes most machine-related hypotheses since software cannot detect a voter's age. It may also explain the correlation between undervotes and voters associated with one party or the other. We attempted to identify fault hypotheses to explain this correlation, but we were unable to construct any machine-related fault hypotheses that would explain this observed effect.

3 iVotronic Operational Overview

The ES&S iVotronic is a highly configurable voting system. It provides a wide variety of configuration options that can be used to customize its operation according to local requirements. Consequently, many of the iVotronic's configuration options were not exercised in the CD13 race. Here we provide an overview of the iVotronic architectural and operational characteristics, as it was used in the Sarasota County CD13 race.

3.1 The iVotronic Election Process

The iVotronic voting process generally includes the following phases: (1) election generation and setup, (2) preparing Personal Electronic Ballots (PEBs) and removable non-volatile memory cards,

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(3) initializing iVotronic terminals, (4) opening the polls, (5) voting, (6) closing the polls and accumulation, and (7) tabulation. We discuss each of these in the following subsections. While we will discuss some aspects of the iVotronic hardware in this section, we save many details about the hardware for a later section.

3.1.1 Election Generation. This early phase is largely outside the scope of the firmware code review. Our understanding is that the election staff creates the election definition files on the vendor's election management system (called Unity), generates a unique election identification code, defines the contests, and identifies the candidates in each contest. The staff exercises and tests these settings before settling on a final election configuration.

3.1.2 Preparing PEBs and CF Cards. The iVotronic stores and retrieves various data using two easily removable storage devices: the Personal Electronic Ballot (PEB) and a Compact Flash (CF) card. The PEB contains the election definition files produced by Unity for the precinct where the PEB will be used, as well as the election identification code. PEB initialization installs this information on the PEB's non-volatile storage. The CF contains audio files on machines configured for disabled voters (ADA) machines and information to identify the election. All CF cards are loaded with bit-for-bit identical information during the preparation stage. The election staff inventories, initializes, and tests these storage devices between elections, often just a month or so prior to Election Day.

3.1.3 Initializing iVotronic Terminals. Two election initialization operations relative to the iVotronic terminals are: (1) updating the firmware (when necessary) and (2) clearing the on-board memory. Firmware updates do not occur in every election cycle so firmware may persist between elections. The clear and test procedure erases information associated with past elections, initializes the persistent storage on the iVotronic terminals, and prepares the iVotronic terminal for use in the next election.

3.1.4 Opening the Polls. On Election Day, a poll worker opens the polls by inserting a PEB into each iVotronic terminal. This makes the iVotronic terminal ready for voting. A de facto standard practice is to use one PEB (called a "Master PEB") to open all terminals in a polling place. Each polling place has its own Master PEB. Master PEBs are ordinarily not used for anything other than opening and closing the polls; they are set aside, unused, for the rest of Election Day.

3.1.5 Voting. After each voter demonstrates her eligibility to vote and signs the sign-in roster, a poll worker accompanies her to an iVotronic terminal, inserts a PEB into the terminal, responds to an administrator screen (e.g., to select the proper precinct, for early voting or multi-precinct polling places), and then removes the PEB. Thus, the PEB serves the purpose of activating the machine to allow a single voter to cast a single ballot. The voter never handles the PEB. When the poll worker removes the PEB, a voter administration screen appears and the voter selects her desired options (e.g., the language in which to view the ballot). When the terminal displays the ballot, there are only two valid voter actions until the voter reaches the final summary page: (1) select or deselect one or more candidates on the page, or (2) page right or left (meaning to move forward or backward, respectively, through the ballot). Once the voter reaches the final summary page, she has three options: (1) select a race to re-vote, (2) page right or left, or (3) cast the ballot. The voter may cast her ballot any time after reaching the final summary page.

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Some iVotronic terminals provide extra features designed to enhance their accessibility. These machines are known as ADA-capable terminals; the acronym refers to the Americans with Disabilities Act. Not all iVotronic terminals are ADA-capable. Non-ADA terminals have a standard ballot presentation style that utilizes color to highlight locations on the screen that can be activated by touching them, such as “page right” and “page left”. ADA terminals can display color-enhanced ballots, but they also can display three non-color ballot formats: (1) high contrast with same font, (2) high contrast with a large font, and (3) an audio interface in which the contents of the ballot are spoken to the voter via an audio headset. ADA-capable terminals that are set to display color-enhanced ballots are usually not used for ADA voters because changing the terminal between the color-enhanced mode and the ADA mode requires a non-trivial administration action. Therefore, a voter who votes on an ADA-capable machine and does not invoke any of the ADA ballot formats will generally receive a black-and-white, high-contrast version of the ballot that they would have received on a non-ADA machine.

In Sarasota County, each polling place contained at least one ADA-capable machine as well as some number of non-ADA machines. ADA machines were not reserved solely for voters who needed the special accessibility features. Some non-ADA voters voted on ADA-capable terminals, and thus received the black-and-white, high-contrast regular-font ballot layout.

3.1.6 Poll Closing and Accumulation. At the end of the voting period, a poll worker reinserts the Master PEB into each terminal. We note that the iVotronic equipment does not itself impose any requirement to have a special Master PEB. Rather, the convention of using a Master PEB evolved because the iVotronic requires that the same PEB that opened a terminal be used to close that terminal. Designating a Master PEB has several procedural advantages over using multiple PEBs to open and close the polls; among other things, it reduces the potential for poll worker confusion about which PEB to use. Should the Master PEB be lost or unavailable when it is time to close the polls, there are procedures that allow an alternate PEB to close terminals.

It is also important to note that no cumulative vote count is kept during the voting period. Rather, iVotronic terminals accumulate Cast Vote Records (CVRs) in persistent, non-volatile memory. Each CVR records the set of candidates that a single voter voted for. CVRs are sometimes known colloquially as “ballot images”, though it is important to point out that they are not stored as a graphical image; instead, a CVR simply contains a list of codes identifying the candidates associated with that CVR. The closing process generates the paper summary tape used in the canvass process from the CVRs that are stored in the terminal non-volatile memory. The summary tapes are signed by poll officials and become the official returns from that polling place.

A separate step in closing the polls is the accumulation of audit data, namely event log entries and ballot images (CVRs). The poll worker is given an option to transfer the contents of the three terminal flash memories to the removable Compact Flash (CF) card. Each of the flashes is copied using a low-level binary copy to a special format file in the CF. This option was exercised in the CD13 elections in Sarasota as part of the closing procedures and we understand the resulting files are available by public records request.

3.1.7 Tabulation. As with Election Generation, tabulation occurs on the Unity server, not on the iVotronic terminal.

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3.2 iVotronic Hardware Architecture

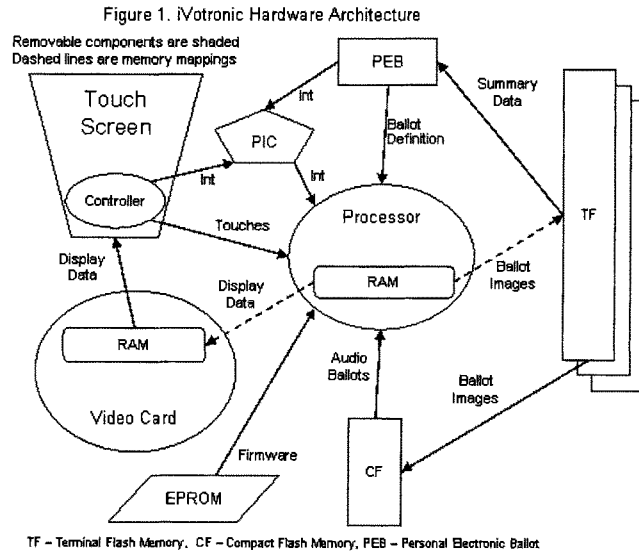
As we noted earlier, the iVotronic architecture and construction details are proprietary and we agreed to protect the vendor’s intellectual property where it is not specifically pertinent to this analysis. Thus, we give an overview without addressing details where they are not important to our findings. Figure 1 provides a visual overview.

3.2.1 The iVotronic Terminal. The iVotronic terminal is the device that voters engage to review the contests and cast their ballot. As computers go, it is a simple device with the primary component and component packages that we discuss below.

3.2.2 Main Processor. The iVotronic processor is a widely used, general purpose processor. It is sufficiently mature that its properties are well understood and it has no distinguishing properties that impact this analysis. During each voter session, Random Access Memory (RAM) stores components of the contest and candidate records.

3.2.3 Touch Screen. The primary input/output interface is a touch screen, which is a graphic display panel with a pressure-sensitive surface. When pressure is placed on the touch screen, electrical resistance is reduced at the point of pressure. The screen is a commercial off-the shelf component.

3.2.4 Touch Screen Controller. The touch screen controller is a programmable microcontroller that determines the X and Y coordinates of the point of maximum pressure on the touch screen. The touch screen controller also performs other functions, such as providing information about the battery voltage level of the system and turning on and off the backlight. It communicates with the main processor via the synchronous serial I/O port. It interrupts the main processor when it has data



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on this port for the main processor to receive. The touch screen controller is a commercial off-the-shelf component.

3.2.5 Programmable Interrupt Controllers (PICs). The system has two programmable interrupt controllers, called PICs for short. The PICs intermediate interrupt requests for the main processor from other devices. The devices that request interrupts in the iVotronic are: (1) two asynchronous serial I/O ports, (2) a synchronous serial I/O port, (3) a timer circuit that generates an interrupt every millisecond, and (4) hardware exceptions. The PIC hardware is a commercial off-the-shelf component.

3.2.6 Real-Time Clock. The real-time clock device keeps an integer count of seconds. It is read by the main processor and used to compute the date and time of day to a resolution of one second. It also provides information such as the serial number and model of the iVotronic device, an indication of whether there is a PEB in the PEB slot, and whether the PEB is of the supervisor or voter type (PEB type is discussed in a later section). The real-time clock device provides this information to the main processor via a sequence of 12 characters that is repeated once per second, one bit at a time. The real-time clock device cannot interrupt the main processor. Software on the main processor must poll the real-time clock bit frequently enough not to miss any bits.

3.2.7 Serial Communications Ports. There are two asynchronous serial I/O ports and one synchronous serial I/O port. One of the two asynchronous serial I/O ports is dedicated to serving the RS 232 interface to the external communications (printer and modem) pack. The other is dedicated to infrared communications with the PEB. The synchronous serial I/O port is dedicated to communications with the touch screen controller. Each of these interfaces interrupts the main processor when input data is available.

3.2.8 External Communications Pack (Printer/Modem). A modem can be connected to the iVotronic by attaching a communications pack through an RS-232 interface to one of the two asynchronous serial communications ports of the iVotronic. The modem can be used for transmission of election results to a central location. The communications pack also provides a printer that can be used for printing summary tapes.

3.2.9 PEB and PEB Interface. A Personal Electronic Ballot (PEB) is a non-volatile memory device designed for use with the iVotronic. PEBs hold the ballot definition, are used to open the terminal and to initialize every voting session. A PEB is about the size of a pack of cards.

The PEB communicates with the iVotronic terminal through a short-range infrared interface. The iVotronic terminal contains a special slot that a PEB can be inserted into. The iVotronic contains a magnetic switch that senses the presence of a PEB, and the iVotronic is programmed to only communicate over the infrared interface when a PEB has been inserted. The infrared connection is completely physically shielded while the PEB is inserted into an iVotronic terminal. We reviewed software that drives the PEB's infrared device and the corresponding terminal software that interfaces with the PEB.

A Supervisor PEB is a PEB that is initialized to be utilized exclusively by a poll worker. Sarasota County used a voting process known as "Pollworker-Activated Mode." In this operation mode, a poll worker who possesses a "Supervisor PEB" enables a machine for each voter. Specifically, the poll worker:

1. engages a validated voter at the check-in table;
2. escorts them to an available voting machine;

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3. inserts the PEB to enable the machine;
4. removes the PEB; and
5. leaves the voter to select and cast their votes.

The voting session cannot begin until the supervisor removes the PEB from the slot. The voter completes the session by pressing the vote button to cast their ballot. Should a voter leave an open session without casting their ballot, the poll worker can reinsert the PEB to cancel or cast their ballot and reinitialize the iVotronic for a subsequent voter.

The Supervisor PEB as issued to the poll worker is fully functional. Without any recharging or other re-initialization, poll workers can:

- (1) open the polls;
- (2) initiate new voting sessions;
- (3) cancel ongoing problematic voting sessions;
- (4) enter the service menu; and
- (5) close the polls

There is an alternate election administration procedure that uses another type of PEB, the “Voter PEB”. In that process, the clerk gives each voter a Voter PEB that enables their own terminal. This process is known as “Voter-Activated Mode.” Since Sarasota County did not use Voter-Activated Mode and did not employ Voter PEBs, we do not detail their operation further.

A Master PEB is a single Supervisor PEB that the polling place elections staff selects to open and close the election on all machines in the polling place. Before the election begins, all Supervisor PEBs within a precinct contain the same data. In particular, the Master PEB is identical to all other PEBs in that polling place, except for the serial number and other PEB-specific identification information. Local officials generally mark the Master PEB with a colored band for proper identification. Normal election procedures require that the same PEB (i.e. the designated Master PEB) open and close each machine. There are fall-back procedures to use an alternative PEB to close the election, for example if the Master PEB is damaged.

3.2.10 **Vote Button.** The vote button is a physical switch that the voter uses to cast their ballot once they complete candidate selection. The vote button only becomes active once the voter has paged through the entire ballot to the last review page. A flashing light inside the vote button indicates its active status. On a non-ADA machine, it is the only physical button (as opposed to “buttons” displayed on the touch screen) that voters engage.

3.2.11 **Paging/Response Buttons to Support ADA Voters (ADA machines only).** The Help America Vote Act (HAVA) requires at least one ADA terminal in any polling place at which disabled persons will vote. Approximately every fifth iVotronic terminal is ADA equipped. These terminals differ slightly from non-ADA machines, most prominently in that ADA terminals have three physical buttons for interacting with the machine. Like the VOTE button, ADA buttons are mounted on the iVotronic terminal frame, not displayed on the touch screen itself. When the poll worker selects ADA audio voting, the touch screen is inactive and the voter presses the ADA buttons in response to the audio ballot. When non-audio voters use the machine, the ADA buttons are disabled.

3.3 **Memory Architecture.** The iVotronic memory system is engineered in a five-tier hierarchy.

3.3.1 **PEB.** As described above, the PEB contains non-volatile memory. At poll opening, the PEB contains the ballot definition, which is copied into the terminal flash (see below) when a voting

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session begins. The PEB is designed to be easily and regularly inserted and removed from the voting terminal, as many as several hundred times per day, to initiate voter sessions and perform other functions. At the end of the election, one Master PEB in each polling place closes each terminal, receives and stores voting summary information, and may be inserted into a designated terminal to send results to the Supervisor's office via modem connection.

3.3.2 Non-volatile terminal flash provides persistent storage for ballot images. The iVotronic contains three internal flash chips that are used to store data in triplicate. If a voting terminal loses power, any ballot images recorded in this triply redundant store remain intact and available once power is restored, or through recovery procedures. The three flash chips are intended to contain identical information, and the iVotronic firmware regularly compares their contents to ensure 100% consistency. Two of these flash chips are fixed in the terminal and cannot be easily removed. The third can be easily removed by County elections technicians, for instance for auditing purposes, after opening the terminal case. Ballot images remain on these three flash chips and are available for audit until elections personnel conduct a clear and test operation (which erases terminal flash).

3.3.3 Compact Flash card. The Compact Flash (CF) card provides non-volatile storage. Like the PEB, the CF card is designed for easy removal. However, unlike the PEB, it is not intended to be removed from the terminal during the voting session. A sliding door on the terminal protects the CF card. In Sarasota County, tamper-resistant tape is used to seal this door to reduce the risk of removal without notice.

The CF card itself is similar to devices that consumers utilize in cameras and other portable devices that require high volume, non-volatile memory, e.g. SD cards. Before the election, elections staff insert the CF cards into the iVotronic terminals at County headquarters. The CF cards initially contain only audio files (for use with the audio interface provided by ADA machines) and information identifying this election uniquely. The contents of the CF card are not modified during the election. The poll closing procedure used in Sarasota County copies the ballot images and other audit information accumulated on the terminal flash to the CF card.

3.3.4 At the lowest level, the on-board Random Access Memory (RAM) provides volatile memory. RAM is not designed to be removed from the terminal and is not useful for routine audit purposes because its contents are volatile and vanish when the machine is powered down.

3.3.5 Erasable Programmable Read Only Memory (EPROM). The EPROM is a fixed chip that stores the iVotronic firmware (i.e., the executable code executed on the iVotronic's main processor). Firmware only needs to change when a software version update occurs. Elections staff typically load firmware to the EPROM through the service menu that copies the new firmware to the EPROM from a compact flash card that was prepared for this purpose.

3.4 iVotronic Software Architecture

To protect intellectual property, we again avoid providing details where these details are not relevant to our findings. iVotronic firmware is organized into two module groups, one that handles hardware interaction and services; the other is best described as voting application code. The software allows nine processing modes. Figure 2 roughly summarizes these modes.

3.4.1 Low-Level and Machine Interface Code. This group of code provides a hardware abstraction layer designed specifically for the iVotronic. The iVotronic does not have an operating system as that term is commonly understood. The modules in this group perform necessary services that

operating systems typically provide, including management services and interfacing to the input/output devices. Most of this code is written in C, a high level language that is commonly used for operating system code; there are a few small assembly language modules.

3.4.2 Application Code. These modules include the code that runs the election, including vote selection, vote recording, and the graphical user interface. These modules also include code to generate the summary reports and transfer them to the PEB, as well as the code to transfer the ballot images and audit data from terminal flash to the CF card. The application code is written entirely in C.

3.4.3 Relevant Code Properties

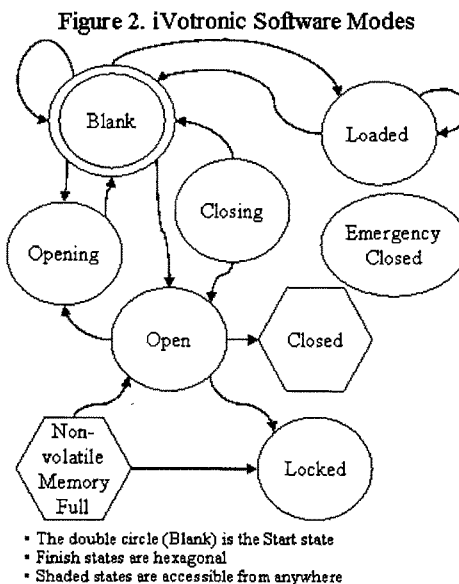
When we received the software, we did not expect to see high assurance source code. While the code meets the target 1990 voting system standard, there is a wide variation in naming and other readability characteristics. Global variables are integral components of virtually every function. While developers did not use “gotos”, control flow is not standardized and is often unintuitive. The code base is aging and shows the effects of numerous modifications. The team was frustrated by the code’s limited readability, and we suspected corresponding reliability issues.

Other aspects of the code structure present hurdles for readability and maintenance, so errors could easily be introduced during updates to the code made as part of the normal software life cycle. There is an excessive reliance on global variables compounded by a lack of a high-level design to model the software components and functions. This led to a repetitive coding style, in which functions sometimes repeat checks and initializations that were performed at earlier points. We identified several benign, harmless defects caused by this strategy.

A positive aspect of the iVotronic firmware is that it contains only a small amount of commercial off-the-shelf (COTS) code not written by the vendor, including a driver for the CF card and a standard C library provided by the compiler. We did not review the source code for any of this COTS code, but because COTS code was used so sparingly, this was not an impediment to the iVotronic firmware analysis.

Conversely, the iVotronic firmware source has several important properties that support reliability and maintenance. Of central importance, the vendor controls all critical code, as there is no commercial operating system. Thus, the iVotronic code need not provide general-purpose functionality; rather it focuses on special purpose electronic voting services that are narrowly tailored to this specific application.

Moreover, while the code is not highly readable, it avoids complex (and correspondingly dangerous) operations such as dynamic memory allocation and multi-threading. Though the



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iVotronic code is not well modularized, it also does not suffer from well-known complexities associated with modern object-oriented programming, such as the fragile base class problem.

The basic structure of the application is simple. The voting code executes in a single-threaded, single-address space application, thereby avoiding many of the challenges associated with multi-threaded concurrent software. There is a single thread of control, corresponding to the main program. The processor is reset and the main program is reloaded and restarted with freshly initialized variables for each voter. There are hardware interrupt handlers that interact with I/O devices primarily to update global variables. Those global variables are read, and sometimes also updated, by the main program, thus there is a potential for timing-dependent errors.

4 Assumptions

During the course of any scientific analysis, investigators make many assumptions. Here, we list the most important subset of assumptions that we made. We used most of these assumptions to reduce the amount of code we had to review manually by limiting our examination of code to that which could have executed in the CD13 race. As our work progressed, we were able to independently corroborate these assumptions as noted below.

4.1 Election Configuration

While the iVotronic is used only for elections, voting system requirements can vary greatly from state to state, or even county to county. For example, some states leverage touch screen device capabilities to reduce natural candidate order bias by rotating the candidate order from voter to voter. Thus, even though the iVotronic code is special-purpose software targeted to a specific task (i.e. voting), there is always a significant amount of the code base that is not exercised in any given election. In many cases, configuration options determine which code paths can or cannot be executed. We examined the election configuration used in Sarasota County and used it to focus our efforts on relevant code and to allow us to understand the correct execution paths. In particular, we only examined code that could have been executed in Sarasota County in November, 2006, given the configuration options that were enabled in Sarasota County. Consequently, many of our assumptions refer to which configuration options were enabled.

We confirmed these assumptions in a variety of ways. For example: (1) we looked at screenshots of the Sarasota ballot; (2) we examined textual versions of the ballot definition files from the Sarasota election; (3) we loaded the Sarasota election definition onto an iVotronic and executed and observed a mock election using the same election definition files used in the November 2006 election; and (4) we obtained information about the November, 2006 election from the FLDoS and the Sarasota Supervisor of Elections staff.

4.1.1 No Candidate Rotation. As noted above, iVotronic firmware supports candidate rotation so that the candidate's ballot order is rotated from voter to voter. In Florida, the candidate order is static, so the Sarasota ballot that includes the CD13 race did not rotate candidates.

4.1.2 No Multi-page Races. Occasionally there are so many candidates in a race that it is not possible to effectively display them all on the same ballot page. The iVotronic firmware includes logic and features to handle multi-page contests. There were no normal-font, multi-page races on the Sarasota ballot. However, some races displayed in large-font mode required more than one page to display. The CD13 race displayed on a single page by itself in large font mode.

4.1.3 Multi-Column Display. The iVotronic firmware allows single and multi-column ballot pages. There were nine ballot styles used in Sarasota across 156 precincts. Of course, ballots differ

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by precinct. The Sarasota ballot styles utilize between fifteen and twenty-one single column pages for initial candidate selection and three or four double column display pages for the ballot summary. Three or four review pages are two-column display. All re-vote pages are displayed in a single column.

4.1.4 Re-vote Pages. During the review process, when a voter selects a race to re-vote, the iVotronic software generates a display page containing only the selected race. This is a logical and appropriate process: the voter is presented with only the race that was selected for re-vote. However, we note that this behavior may create the illusion of a missing race on the original ballot: because the re-vote screen is so different from the main voting screen it may confuse voters into believing the revoted race did not appear on the original ballot. We address this as an undervote hypothesis in Section 6 below.

4.1.5 Text Ballots. The iVotronic manages ballots in either text or bit-mapped format. There is a significant amount of iVotronic code that deals with bit-mapped ballots. The Sarasota ballot was text-based, and there were no bit-mapped ballots used in Sarasota County.

4.1.6 No Multi-Language Ballots. iVotronic text-based ballots allow English or Spanish versions. Only English language ballots were activated in Sarasota.

4.1.7 No Straight Party Voting. Some states provide a simplified voting process for straight party voters. While the iVotronic firmware supports this voting feature, straight-party voting was not enabled in the Sarasota County ballot definition.

4.1.8 No Controlling Contests. When a voter's selection in one contest determines her eligibility to vote in a different contest, the former is called a "controlling contest". There were no controlling contests on the Sarasota ballot.

4.1.9 The Firmware Compilation Environment. We assume that the tools used to build the firmware from the source code:

1. Worked correctly;
2. Comply with the ANSI C programming language standard;
3. Do not have any bugs or unexpected behavior.

We assume that the firmware image provided to us was compiled correctly from the source code provided to us. We also assume that the firmware image provided to us was the firmware image that was actually executed by the iVotronic machines on Election Day. These assumptions imply that the executable software executed by the iVotronic systems during the election matched the source code we examined. As our study focused *only* on the source code, we did not attempt to reconstruct the executable firmware image. Both ES&S and FLDoS told us that the firmware compilation environment worked correctly.

4.2 Ballot Images Contain the Undervote. The undervote totals shown in the summary reports are identical to the ballot images that reside on non-volatile terminal flash memory. FLDoS confirmed that in their tests they extracted ballot images through the election management system, compared the count to the summary tape, and confirmed that the totals were identical. This indicates that if the undervote is due to a flaw or malicious act, that flaw or malicious act changed both the ballot image and the summary report. It also ensures that the undervote did not occur due to a tabulation error at poll closing or afterward by any means, either accidental or deliberate.

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4.3 **Hardware Configuration Assumptions.** We assume that the external communications pack was not attached during the election. Also, we assume that the touch screen controller and PICs, did not fail in a malicious way; that is, they either functioned correctly or failed in a way that was detected and resulted in the machine being taken out of service.

5 Activities That Are Out of Scope for This Analysis (i.e. Things We Did Not Do)

5.1 We did not conduct a comprehensive election audit. The Statement of Work gave the task of this team as:

The sole purpose of this project is to conduct a scientifically rigorous static software analysis on the iVotronics version 8.0.1.2 firmware source code to determine and identify flaws, vulnerabilities or anomalies, if any, that may have potentially caused, contributed or otherwise created the higher than expected under-vote rate in the District 13 Race.

The team's task was *not* to examine the iVotronic systems or the PEBs used in the election, or to perform forensic analysis on those systems to determine whether a problem in them caused the undervote. The team's task was to determine whether the source code used to create the firmware on those systems had flaws that would explain, or could have contributed to, the undervote. An analogy to the limited task of this group lies in the realm of automotive mechanics. If one car's computer has a problem, that car is examined. If many cars' computer systems have the same problem, a larger study is required to determine whether the programming is at fault. The individual cars are also examined to determine whether the individual computers were defective, or the programming on those individual computers was altered. In this analogy, the team is examining the programming. This is a part of the broader study into the computers failing, the FLDoS conducting the complete study of the cars' computer systems. Our investigation was just one part of a larger audit performed by the FLDoS.

Nevertheless, many hypotheses concerning the undervote can be ruled out through a combination of source code review and other evidence, such as the distribution of the undervote across the entire county, a similar undervote in Charlotte County (see Section 8.1 below), and the absence of undervote in other iVotronic jurisdictions.

5.2 We did not attempt to verify that the code is completely free of defects. There are fundamental limits on the ability of manual source code review to find defects in computer software. Manual code review is an imprecise process, guided by best practices and analyst intuition. It is impossible to check all code paths that might be executed in any nontrivial computer program. Also, in any nontrivial computer program, it is impossible to exhaustively enumerate and analyze the full state space that the code inhabits. Moreover, humans are fallible: just as the original software programmer can miss a defect in the code they write, so too can independent reviewers overlook subtle defects and bugs in the code.

We did not attempt to use formal methods. We did not attempt to apply software verification techniques such as Hoare logic, Dijkstra's weakest preconditions, or model checking to mathematically prove the absence of defects in the code. Rather, we used informal code inspection, guided by our engineering knowledge and experience.

Classically, software analysis usually involves a combination of static analysis (e.g., manual code review) and dynamic analysis (e.g., black-box testing, unit tests). This project was charged to perform static analysis of the code; dynamic analysis was not part of our charge. That said, the team were provided some access to equipment for testing and hands on evaluation, and we did

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supplement our static code analysis with directed testing and experimentation with the iVotronic equipment. However, even the combination of static code analysis, black-box testing, and clear-box testing cannot reveal the presence or absence of all faults in non-trivial programs.

For these reasons, we make no claims that we found all bugs or defects in the code.

However, we did perform a systematic and structured analysis of the aspects of the code that we believed to be relevant to the CD13 undervote. The purpose of this study was not to find all potential defects, but rather to accomplish the limited objective of finding the specific class of defects that may have contributed to the CD13 undervote. The limited scope of our investigation helped us to focus our analysis and increases our confidence in the completeness of our findings. While another set of reviewers with access to the code might find bugs we missed, we do not believe they would find bugs or defects that caused or contributed to the CD13 undervote. Nonetheless, we accept that certainty is unlikely even with limited scope and correspondingly offer only our best professional opinions rather than absolute guarantees.

We also emphasize that, even though manual code analysis has limitations, it is nonetheless an effective and powerful way to analyze a system such as this. Code inspection is a state-of-the-art technique for evaluating the reliability, security, and accuracy of systems such as this, and it has important advantages over its competitors. For instance, code review can find many defects and problems that black-box testing (e.g., logic and accuracy tests, mock elections, and parallel testing) cannot. Code review is especially powerful when combined with other software testing and evaluation methods, such as those undertaken during the FLDoS audit. If there were a software flaw or bug that caused or contributed to the CD13 undervote, we believe that one of these methods would have been able to find it.

5.3 We did not conduct a Red-Team exercise. One popular computer system vulnerability assessment approach is to engage skilled security specialists to attack working systems in order to determine their security strength. Depending on the terms of the Red Team project, they may have extensive access to code for static and dynamic analysis, or they may simply observe the system to determine their attack simulation approach. When done right, Red Teams rely on skill sets acquired through years of red teaming and an understanding of how the systems are used in the field. Red Team assessments are often conducted under conditions that mirror how the system will be used in practice. In this case, a thorough Red Team assessment would have had to be performed under conditions that mirror an actual election, with consideration of all administrative and security mechanisms that are employed in practice. We did not conduct a Red Team assessment.

5.4 We did not examine election management system source code. As we note earlier, the Statement of Work confined our work to analysis of the source code for the iVotronic firmware. We did not exercise or examine the election management system software. We note, however, that no activities of the election management software after the election could have had any effect on the undervote, because the summary tapes produced at polling places at the close of voting also showed an identically high undervote rate, and there is no way that any failure or fault in the election management software after the election could have altered the summary tapes.

5.5 We did not duplicate FLDoS audits. The FLDoS audit plan and results to date are posted on the FLDoS web page. These tests include machine and equipment examination, parallel testing, and other analysis. Although some of the team's activities overlapped with these tests, we did not duplicate these efforts. For example, the FLDoS conducted two dynamic tests, termed parallel tests

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[10]. These tests involved precisely reproducing election day behavior by having staff members acting as voters entering selections directed by scripts generated based on voting terminal audit records. They conducted two parallel tests, one with standby terminals that were not used in the CD13 election and the second test did utilize terminals used in the election. These tests did not reveal any anomalies. Thus, we did not conduct parallel tests and we did not disassemble any iVotronic or PEB hardware. Rather, we examined anomalous behavior only to identify possible hypotheses that might explain the CD13 undervote.

5.6 Software that we did not review. There are two categories of software components within the iVotronic terminal whose review is outside this project's scope and thus, was not available to the team. One category is firmware of I/O devices. There is a programmable microcontroller that manages communication between the main processor and the touch-screen. Comments in the main processor code identify the part number of the microcontroller. The interactions with the controller are well defined and are under the control of the main-processor firmware, which we reviewed.

The second category is third-party utility libraries. There is an I/O library provided by the manufacturer of the terminal, compact, and PEB flash memory modules and there are the C-language runtime libraries provided by the compiler vendor. These are reported to be generic libraries, proprietary to the respective third-party vendors, and are not considered part of the iVotronic firmware.

6 Findings

The first group of detailed findings that we present deals with reliability issues. In particular, our focus in this section is to identify potential non-malicious software faults that may have contributed to the CD13 undervote. We order these reliability findings based on the primary point at which they occur in the iVotronic election process. The later subsections detail asynchronous concerns and audit related issues.

Much of our work was focused on attempting to confirm or refute specific hypotheses that, if true, might explain the CD13 undervote. Consequently, many findings reflect our hypothesis-based approach, and we relate most of our findings to potential causes or contributors to the CD13 undervote. Once again, we do not claim to have exhaustively considered all possible undervote hypotheses. Rather, we examined those scenarios available to us and we spent considerable time and energy brainstorming and seeking alternative hypotheses. Our team spent many person-hours reviewing information about the undervote symptoms as well as reviewing the firmware source code. While potential hypotheses may remain unconsidered, we believe that we investigated those that are most likely and most dangerous.

We generally present our findings as follows. We describe the general hypothesis, and then refine it to a particular falsifiable hypothesis. We identify technology features that might make the hypothesis a reasonable one, and then give a technical analysis of the relevant parts of the system in light of the hypothesis. Then we discuss constraints that might inhibit the hypothesis holding and specific factors present in Sarasota that might have enabled the hypothetical flaw. We close with a remedy for the flaw postulated in the hypothesis.

We emphasize that we did not conduct independent investigations to verify information given to us by the FLDoS or Sarasota officials. Many of the enabling factors and constraints come from their information.

6.1 Findings About the Elections Setup

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6.1.1 Problem in Name Information on One or More PEBs.

Overview. The iVotronic firmware utilizes a special character (@) as the first character in the candidate name field to indicate that the candidate is “non-votable”. Were this symbol to inadvertently appear in a ballot definition, voters would be prevented from casting a vote for that candidate.

Hypothesis. Based on voter complaints indicating that they were not given an option to vote for a candidate, we considered the possibility that the non-votable character may have been erroneously prefixed on a candidate’s name on some number of PEBs. Were the PEBs initialized with this flaw or if such a flaw was introduced during the voting process, the candidate would appear on the ballot, but since there was no controlling contest to enable the candidate, no voter with a voting session initialized with such a PEB would be able to vote for the candidate that was so marked.

Enabling Technology. PEBs are special purpose memory devices that hold ballot definition files to initialize voter sessions and store summary tapes when the election is closed. While malicious injection is possible, a more likely cause would be a faulty initialization process that mistakenly pre-pended the @ character to a candidate’s name. In this case, approximately fifteen percent of PEBs would have had to contain this faulty ballot definition in order to cause the entire undervote.

Technical Analysis. We did not find any mechanisms in the firmware that can prevent this error (or attack). If the ballot definition marks a candidate as non-votable, the firmware recognizes them as non-votable and does not display a vote box, and the touch screen is not configured to detect a vote for that candidate. This status is pervasive through the entire voting process, including the summary and review process. Conversely, there is no code that modifies the candidate name field, so if this field contains this character initially, it will persist for the duration of the election on that machine.

Constraints. There are several contraindications regarding this hypothesis. The primary detractor is that if a candidate is labeled non-votable, voters would not have been able to correct the undervote through the review process. The vast majority of voter complaints confirmed that they were able to correct the undervote. Additionally, were this problem widespread, it is such a clear flaw that it would have generated many very specific reports that poll workers could easily have verified and would have noted in the precinct reports. We found very few voters that noted this problem. Finally, we requested a copy of the election definition files from the Sarasota County Supervisor of Elections. We were given a textual dump, output by Unity, of all of the ballot styles used in every precinct in Sarasota County. No candidate name was prefixed with an @ character in those files.

Enabling Factors Present in Sarasota. There are no enabling factors present. We were led to examine this hypothesis by the undervote symptoms.

Potential Remedy. Utilizing a special character in a name field is non-intuitive and error-prone. The contest record should include properly named and typed fields that reflect the contest’s status on the ballot. It should be controlled by well-defined, clearly identified mechanisms.

6.2 Findings About Voting Sessions

6.2.1 Voting Phase Findings

6.2.1.1 Investigate Reports that the Display Was Slow to Respond to Touch.

Overview. We consider a scenario in which technical impacts from slow touch screen response may unintentionally prevent the voter’s selection from registering during the vote selection process, but not during the review cycle.

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Hypothesis. If a voter is able to interact with the touch screen in a sequence that causes the screen to display a candidate selection that does not match their most recent touch, it may cause the voter to misinterpret their selection for that race. Specifically, consider a situation where a voter touches a vote box twice in rapid succession. If the software delays updating the display in response to the second touch for some reason, after a very short period the voter may accept the first display response as conclusive, and due to the delay (if it exists) the voter might not notice the delayed update in response to the second touch. It is also possible that the second touch would cause the candidate to be deselected after having been selected.

Similarly, we consider a situation where a voter touches a vote box and waits patiently for her vote to display for a few moments before assuming her touch was not detected and touching the screen again. If the first touch is recorded and if the display is updated only after the second touch, the voter may accept the first display response as conclusive, while a delay (if it exists) could cause later display of the second recorded touch that the voter may not notice.

These scenarios are consistent with reports by some voters that they voted for a candidate, but noticed their vote was not registered when they reviewed their selections on the summary screen.

Enabling Technology. Low level hardware and software systems often utilize semaphores, polling routines, and other “wait and see” control procedures. We consider possible code flaws that may trigger these timing mechanisms in a way that exceeds normal limits, and cause corresponding synchronization problems.

Technical Analysis. Source code inspection reveals a predominantly sequential control process between touch detection, vote recording, and vote display. The only exceptions are a few interrupts that update global variables and return immediately. Our analysis indicates that the software cannot read a new touch until after the previous recorded selection displays. In particular, after detecting a touch to the screen, the software immediately updates the screen, then clears the buffer of touch events and waits for a quiescent state (i.e., where the voter is not touching the screen) before accepting the next touch event. At the hardware interface, the software cycle involves writing the image into a display buffer, and the delay in displaying this image to the voter can be measured in milliseconds. The touch screen controller displays this buffer approximately thirty times per second. Since the software extracts the information to generate the display value from the candidate’s vote field, sequencing appears properly implemented. While it is conceivable that the touch detection mechanism may cause significant delay, such a delay could not result in a press, record, display synchronization problem in the scenario we describe.

Enabling Factors Present in Sarasota. The team reviewed numerous precinct log entries and noticed that several voters complained about slow touch screen response.

Constraints. (1) Machines where screen delay complaints originated did not uniformly reflect the high undervote. The first machine that we checked had only a 7% undervote rate, considerably less than the 18% undervote rate. (2) There is no logic that explains why such a fault, if it existed, would have affected only one race on the 15-21 page ballot.

Potential Remedy. Aging and dirty hardware components are out of this team’s scope. However, from a systems perspective, when elections depend on machinery, Supervisors of Election must have an aggressive maintenance and replacement schedule in place for that machinery.

6.2.1.2 Consider Whether Event 18 (“Invalid Vote PEB”) Caused or Contributed to the CD13 Undervote

Overview. Sarasota event logs reflected a significant number of Event 18 instances. These events are identified in the event log by the message “Invalid Vote PEB”. We traced each Event 18

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instance to its cause and verified that they had no impact on any voting function, thus no impact on the CD13 undervote.

Hypothesis. We considered the Event 18 occurrences anomalous and investigated whether they may indicate machine failure or relate to any unusual behavior, particularly behavior that may have contributed to the CD13 undervote.

Technical Analysis. As part of the audit record routinely provided by the iVotronic, the firmware logs events that describe activity that may be of interest after the election. Though this particular event is unusual, we tracked each event occurrence to its cause. Each was triggered by the machine losing (or never having) communication with the PEB during an operation that needs the PEB to be inserted. Such instances mis-assign the value 0 to the variable that tracks whether the PEB is a Voter PEB or a Supervisor PEB. The software that prints the event logs interprets a 0 (or any value other than the value for a Supervisor PEB) as meaning a Voter PEB.

We identified a number of entries in the event logs associated with PEB type 0, including “Invalid Vote PEB” (Event 18) as well as “Normal Ballot Cast” events. There are four different categories of unexpected event log entries associated with PEB type 0 in the Sarasota event log. The first category is caused by a benign software defect. The final three categories reflect valid responses to poll worker PEB handling anomalies.

1. A “Normal Ballot Cast” event associated with PEB type 0 on an ADA terminal with Spanish disabled, and the PEB serial number in the event log is 0.
2. An “Invalid Vote PEB” event is the first event of a day, and the PEB serial number in the event log is 0, and there was voting the previous day. This occurs only in early voting situations.
3. An “Invalid Vote PEB” event intermittently occurs, and is immediately followed by a subsequent vote cast, and the PEB serial number associated with the “Invalid Vote PEB” event is 0.
4. An “Invalid Vote PEB” event intermittently occurs without an immediately subsequent vote, and the PEB serial number associated with the “Invalid Vote PEB” event is 0.

The first of these symptoms results deterministically from a defect in the code that only triggers on ADA terminals when the Spanish ballot is not enabled. The defect is associated with a function call that attempts to query the PEB when no PEB is present. When no PEB is present, the iVotronic software routine that queries the PEB assigns a 0 to the global variable holding the PEB type, to indicate a failure when attempting to query the PEB. In this case, it also sets the global variable holding the PEB serial number to 0. After the poll worker removes the PEB, the iVotronic terminal proceeds to display an initial screen to the voter. In the process of composing that screen, a function is called to display the PEB voltage, and that function queries the PEB. Since this function is invoked after the PEB has been removed (i.e., when no PEB is inserted), it will have the side effect of setting the PEB type to 0 and the PEB serial number to 0. Later, when the voter finishes voting and casts their ballot, the iVotronic terminal writes an event log entry indicating a “Normal Ballot Cast” event, and it reads the current value of the PEB type and PEB serial number global variables without checking them for validity and stores them in the event log entry. Since those global variables hold the value 0, this results in a “Normal Ballot Cast” event with PEB kind 0 and PEB serial number 0. Later, when Unity software is used to convert the event log into a textual format, the PEB kind 0 will be interpreted as a Voter PEB, because Unity interprets any unknown PEB kind value as a Voter PEB. Other than this erroneous value (and the PEB’s serial number also being set to 0), there is no negative impact and the only symptom is the message in the event log. The error condition occurs during language selection on ADA terminals where the Spanish language ballot is

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not enabled. Thus, all ballots cast on ADA terminals in Sarasota reflect this event, and there are no other instances of this event in the event logs.

The team identified this symptom in early January and tracked its cause and impact within one day. We give an extensive, detailed analysis by routine and line number of this category of anomalous event log entries in Appendix F. This appendix is marked as proprietary and confidential, because it gives intimate detail regarding code flow and operation and it identifies the modules, functions, variables, and line numbers associated with this defect in the code. It is illustrative of the rigorous, detailed analysis that the team conducted throughout the review. However, due to its detail, it exposes significant proprietary information and is marked as proprietary and confidential.

Based on this analysis, we were able to determine that the first category of anomalous event log entries were benign. While they were indeed due to a defect in the code, we were able to exhaustively analyze that defect and determine that it did not cause any effect on voting other than causing incorrect log entries.

As it turns out, the other three categories of “Invalid Vote PEB” log entries had a different explanation. This complicated and extended our investigation, because the other three categories clouded the symptom patterns.

The second category of log entries occurs on machines utilized in early voting. The event uniformly occurred at the beginning of each day on every terminal where there was voting the previous day, thus is only applicable to early voting devices. Several investigators independently reconfirmed that all code sequences associated with the “Invalid Vote PEB” message (Event 18) had no possible impact on the election results. A query to the Sarasota elections staff confirmed our hypothesis that elections staff woke up terminals by dropping a PEB in the slot and quickly removing it. They did this as part of their opening process to confirm that the vote count on machines locked in secure storage was not tampered with overnight. This process caused the iVotronic machine to register a problem when attempting to query the PEB (because it had been removed before the iVotronic was able to fully read it), thus triggering an “Invalid Vote PEB” message. In other words, the software was operating as designed. Thus, this category, too, is benign.

There are a few event log instances where a new early voting day is not accompanied by Event 18. This pattern is consistent with the poll worker having left the awakening PEB in the machine until the open splash screen appeared. At that point, PEB removal does not trigger an “Invalid Vote PEB” message.

The final two categories of log entries presentations also reflect the proper software response to lost communication with the PEB. If the PEB was jiggled or spuriously removed, normally during voting session initialization, an “Invalid Vote PEB” message is generated. Typically when this happens, a poll worker need only remove and reinsert the PEB to begin a new normal voting session. The event logs consistently reflect that normal voting session completion events follow these Event 18 instances within a few minutes.

In the fourth category of log entries, the event intermittently occurs without an immediately subsequent vote. There are only a few of these log entries and they are all followed by another normal session within an hour or two. This symptom is consistent with the poll worker simply taking the voter to another terminal when they experience an “Invalid Vote PEB” (Event 18) message.

We note that one study identified a correlation between machines that contained a PEB with serial number 0 and a higher-than-average undervote rate in the CD13 race. That study hypothesized that the anomalous event log entries might reflect a software defect that could have contributed to the CD13 undervote. Our analysis refutes that hypothesis and fully explains the cause of the anomalous

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log entries. It remains to be seen why there was a correlation between these log entries and the undervote rate. However, we note that every ADA terminal contained these anomalous log entries, and the overwhelming majority of anomalous log entries were associated with ADA terminals. Consequently, the study's results could be alternately described as revealing that ADA terminals were subject to a slightly higher-than-average CD13 undervote rate than non-ADA terminals. It is not clear why this might be so, though one possible explanation might lie with the slight differences in ballot presentation between ADA and non-ADA machines (e.g., non-ADA machines display parts of the ballot in color, while ADA machines display the ballot entirely in black and white when used by non-ADA voters). In summary, the evidence available to us is consistent with our conclusion that machine faults or errors did not cause or contribute to the CD13 undervote.

Potential Remedy. The vendor notified the team about the software defect in late January. They had independently identified this problem and they indicated to us that the flaw is corrected in subsequent iVotronic firmware versions. Again, the log entry does not affect the accuracy of the recording of votes, but the message does not accurately reflect the terminal's behavior. To resolve the early voting wake-up event, we note that the lock and unlock operations are designed for this function and may be a better option for poll workers.

6.2.1.3 Controlling Contests and Their Potential Effect on CD13

Overview. The iVotronic supports controlling contests, a special kind of contest where the selections made in one contest can affect eligibility to vote in another contest. If contest A controls contest B, the voter is only allowed to vote in contest B if she made a specific selection in contest A. As an example, a controlling contest situation may occur in a recall election. The mechanism is used to designate a particular contest—e.g., the choice to recall or not an incumbent—as controller. A subsequent contest—e.g., candidates for the office under recall vote—can be designated as controlled by the earlier contest. If the voter does not select the choice to recall the incumbent, then the voter is not allowed to make any selection in the controlled contest, and an undervote is recorded in the controlled contest.

Though there were no controlling contest relationships in Sarasota, if such a configuration were accidentally present, it could cause an undervote.

Hypothesis. We considered the possibility that the US Senate race was designed as a controlling contest and CD13 as the controlled contest. The iVotronic requires that the controlling contest appear earlier on the ballot than the controlled contest, so the US Senate race is the only possibility for the controller.

Enabling technology. Designating the Senate contest as controller for the CD13 contest could have prevented voters that made a particular selection in the Senate race from casting a vote in the CD13 race.

Technical Analysis. We verified through examination of the code that the iVotronic software enforces that the controller race must precede the controlled race. This restricts the possibility of a controller contest to the Senate race. As part of our investigation we verified that the ballot definition files for Sarasota County did not contain any controlling contests and the configuration of the Senate race was identical in all precincts.

In addition, if a particular voting machine were erroneously initialized with one or more ballot styles defining the Senate race as controller for the CD13 contest, this configuration would be highly visible to the voter: If the voter were to make a selection in a particular contest that is disallowed because of a prior selection in a controller contest, a message is displayed in the screen instructing the voter that unless the controller contest is re-visited and its selection changed, the voter cannot cast a choice in the current contest. We found no voter reports of having encountered

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such behavior, which is unlikely since the undervote was extensive and widely distributed. Moreover, the parallel tests performed by the FLDoS did not reveal such behavior.

Finally, if this hypothesis were accurate, it would create a distinctive pattern in the ballot images, where some particular selection(s) in the US Senate race was always associated with an undervote in CD13 on the affected machine(s). To explain the CD13 undervote, most machines would have had to be affected in this way. No such pattern was observed in our examination of the ballot images. Our conclusion is that such configuration error could not have contributed to the observed effects in the CD13 contest.

Enabling factors present in Sarasota. The only factor of note that was present in Sarasota is that the CD13 contest was not the first contest in the ballot, which satisfies one requirement for a controlled contest. While in principle such configuration errors in selected ballot styles could lead to the observed undervote percentages, our review of the official ballot definitions, and more significantly, the lack of recorded voter complaints describing symptoms that match this error effectively rule it out as a factor in the CD13 undervote.

Mitigating Factors. Such a configuration error in the ballot definition can be easily ascertained with proper testing before the election. Again, it is imperative that testing be performed for each ballot definition.

6.2.1.4 Consider the Possibility of Definition of Straight Party Rules

Overview. The iVotronic supports a generic voting feature that can subject contests to straight party voting rules. If a particular contest sets a party preference, the iVotronic may prevent the voter from making selections for candidates of the selected party in all contests subject to straight party, by displaying the candidates of the selected party without a voting box. Instead, when the voter casts the ballot, the candidates of the selected party are recorded as “straight voted.” There were no straight party rules in the official Sarasota ballot definitions. In addition, straight vote is neither a blank vote nor an undervote.

Hypothesis. Designating a selection in a straight party contest could subsequently prevent that voter from selecting a candidate of the same party in any contest subject to the straight party rule. If later the voter were to re-visit and de-select the straight party contest, this might result in undervotes in the contests subject to the straight party rules.

Technical Analysis. The presence of straight party rules is visible to the voter in various ways: (1) When interacting with a contest controlled by the straight party rules, the voting boxes of candidates of the same party would not be displayed if the voter is not allowed to make that selection; (2) if the voter were later to de-select the straight party contest, the summary pages would show the undervote in the contests without a selection. Note that the selection of a party subsequent to the choice of a candidate of the same party in another race may not clear the earlier choice for that candidate. In other words, the selection of a party in a straight party contest may not “clear” any voter choices in specific elections, and sets or removes the “default” choice in contests where the voter has not made any selection. Indeed, the erroneous configuration of straight party rules would more likely decrease, rather than increase, undervote rates. In addition, the fact that high undervote rates were observed among voters that displayed a tendency to “straight voting” is a counter-indication to this having been a factor in the undervote—if any of the other races had been configured to trigger straight party preference, that would result in the same party candidate being selected in the congressional race.

Enabling factors present in Sarasota. No enabling factors are present in Sarasota, except for the intrinsic capability of the iVotronic to be so configured.

Mitigating Factors. Such a configuration error in the ballot definition can be easily ascertained with proper testing before the election.

6.2.1.5 Investigate Reports That the CD13 Race Was Not Displayed

Overview. In reviewing polling place logs, we noticed several voter reports that the CD13 race did not appear on the ballot. However, when they noticed the “NO SELECTION MADE” message on the review screen, they returned to re-vote the race successfully. We consider reasons why the race might not have appeared on its proper ballot page.

Hypothesis. We analyzed the firmware to identify potential flaws that cause a race configured similarly to the CD13 race (two candidates, both major party candidates, top of the page, no write-in, appearing on the same page with a many-candidate race) to not be presented to every voter.

Technical Analysis. The team spent many hours with hands on testing and reviewing iVotronic operation, including analyzing the Sarasota election setup. There are three specific properties that are relevant to this question. The first two reflect relationships between the first two ballot pages and the third addresses the differences between the original CD13 vote page and its review page.

(1) While some localities may hold elections on average once per year, few voters vote more than once every two years. Many others vote every four years or less often. Thus, when voters begin the (unfamiliar) voting process, they may quickly grasp any detected patterns as they seek familiarity. On the Sarasota ballot, the first ballot page set a pattern of having two large (3 or 4 lines) headers, separated by a straight line, and followed by a large multi-candidate race. The second page format closely follows this pattern, with the exception that there is a two candidate race between the two headings. The similarity is clear when looking at the first two ballot pages side-by-side as seen in the first two screen shots in Appendix A. This effect is more pronounced when the second page is superimposed on the first.

(2) The vote touch spot for the Democrat and Republican candidates in the large races are similarly placed on the first two ballot pages. Again, the similarity is striking when the pages are superimposed. The vote box for Bill Nelson on the first page is set just above the vote box for Jim Davis on the second page; similarly for Harris and Crist. The problem is that if the voter is drawn to Crist or Davis on the second page because the ballots look the same and because that is where they voted on the first page, they may naturally have missed the CD13 contest. This page similarity is equally as noticeable on the iVotronic itself, where it was first identified.

(3) The third factor reflects the difference between the original CD13 screen and the re-vote screen that is presented when the user visits the review screen and then selects the CD13 race to change their vote in CD13. The original page containing the CD13 contest is full from top to bottom with seven header lines and candidates for two races. Conversely, the CD13 re-vote page displays only the CD13 race and shows only two candidates. The re-vote page for the CD13 race (third picture in Appendix A) is nearly blank, which is unlike any page on the original ballot. It is not surprising that people would insist that the CD13 page *that they saw when correcting an initial undervote in CD13* was not on the original ballot, because it actually was not. It is also easy to understand how voters who used the review screen to correct an initial undervote in CD13 would be convinced that they would not have missed the race had it been originally displayed.

Constraints. Some have suggested [7] that because another ballot page that contained the Hospital Board contest is similar to the CD13 page and the undervote pattern did not appear there, the ballot format could not have caused the CD13 undervote. We assume the researchers are referring to ballots styles other than the ballot style that was utilized in twenty Sarasota precincts that had the Hospital Board contest at the bottom of the ballot page. However, ballot pages #2 and #6 are different in several important ways with respect to the other ballot styles as well.

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- (1) Page #2 has two (2) three-line headers while page #6 has three (3) one-line headers.
- (2) Page #2 has two contests, while page #6 has three equal-sized contests.
- (3) Page #2 has one contest with six candidates; page #6 contains only two-candidate contests.
- (4) There are nine possible selections on page #2, while there are only six selections on page 6.
- (5) The Hospital Board contest appears significantly later in the ballot, after voters have had a chance to acclimate themselves to the ballot format. In contrast, the CD13 contest appears on page #2 immediately after a page containing a single contest, which may have primed voters to expect a single contest per page. That expectation may have become weakened by the time voters reached the Hospital Board contest on page #6.

Another study [9] shows that precincts with older voters, who may be more susceptible to such ballot distractions, experienced a higher undervote rate. Some suggest that older voters may be more susceptible to such ballot complexities than younger voters.

6.2.1.6 Reports that The Voter Choice and the Displayed Values Do Not Agree.

Overview: We consider the possibility that the update of data structures recording voter selection may not be reflected through updates in the information displayed on the screen.

Hypothesis: The recording of voter selection is a multi-step process, starting with the detection of a touch that matches a particular contest and candidate/choice. The choice is recorded to RAM and a subsequent call is made to the display functions. A situation with improper serialization of operations or improper synchronization might lead to erroneous information being displayed to the voter.

Enabling technology: The iVotronic machine allows interrupt-driven processing, as we describe in detail in Section 6.3 below. This allows the execution of machine instructions from an interrupt handler between two statements that appear as consecutive in the application code. If these instructions could update or change variables that change control flow between the time when the structures are updated and the display is called, this could lead to a lack of faithfulness in the information represented to the voter.

Technical analysis: The voting sequence was reviewed from the voting session start to ballot casting. All the updates to the data structures recording voter intent were traced through the code.

The user interaction sequence could be summarized as follows:

- (1) A touch is detected and matched to a screen position corresponding to a valid choice.
- (2) If this choice corresponds to a contest selection choice (other possible choices are, for instance, to change the ballot page), then a set of checks is performed to decide if the choice is valid. While a de-selection choice is always valid (unselect a candidate or YES/NO choice for a proposition), the same is not the case for a positive selection. For instance, if the contest allows for multiple candidates to be selected (not the case with CD13) and the voter has already made enough selections, the attempted selection is ignored. Other selections that are disallowed have been discussed in findings 6.2.1.3 and 6.2.1.4
- (3) If all the checks are satisfied, the selection state for the candidate/choice is changed. A function to refresh the current page is then invoked.
- (4) The refresh function scans all contests in the current page for one with a candidate or choice whose selection state has changed by comparing the current selection state to the previous selection state. This contest is then re-displayed, by writing its current state representation to the screen memory buffers. The refresh function also updates the previous selection state for the candidate/choice to the current state.

We note that the application code must make explicit calls for the touch screen controller to update the variables indicating where the last touch occurred. Moreover, once in step (1) the application code detects the location of the touch and resolves which contest candidate/selection it matches, it no longer polls for touch events, ignoring all user input until after the refresh call is performed (or the change is rejected, if the selection is disallowed through a failed check as described above). Therefore, it is not possible for the user to interrupt the normal execution sequence by (for example) selecting to go to a new ballot page before the code has completely processed its prior input. This includes touch screen input and input from buttons, such as the vote button.

The only parts of the code that modify a candidate's current selection state are those that perform the checks in steps (2)-(3). The only part of the code that modifies the previous selection state of a candidate is code that displays a modified contest in step (4). Therefore, if a touch is detected and matched and a change of selection correspondingly triggered for the contest, the code to refresh the contest representation in the screen will be called.

The refresh display code writes directly and synchronously to display buffers. The screen driver displays the changes the next time the screen is refreshed (asynchronously), which happens at a relatively high rate. Meanwhile, the code will have returned to wait for a new user selection through the touch screen or the vote cast button.

We note that the touch screen controller is relatively slow, in particular much slower than the display refresh rate. This makes it highly unlikely that a voter could make a (de-)selection in a race, and quickly browse to another page before the display is updated to reflect the changes. In fact, quickly pressing the screen at different screen positions will not register a touch since the touch screen controller filters out rapid or random touches. While this may be frustrating to the user experience, a discarded user input has no impact on a mismatch between display and recorded voter intention.

Finally, even if the user were not to notice a screen update before moving to another page, due to distraction, haste, etc., the current selection state for candidates/choices would be displayed correctly in the summary pages as well as if the user were to re-visit the page, either by browsing back or through the re-vote process. This is because when a page is displayed anew all the contests are displayed using the current selection states for the candidates.

Our analysis was aided by the fact that the iVotronic code is single-threaded. The only source of concurrency is via interrupt handlers.

Enabling factors present in Sarasota: The relative slowness of the touch screen controller may have contributed to some voter dissatisfaction and comments that it was difficult to make selections in some races. This could have been exacerbated in those contests that appear in particular screen positions, since in our testing of the touch screen we noticed that screen responsiveness could vary as a function of finger angle to screen, for instance. The fact that the CD13 race was the first on the top of a page may have been a factor in an increased number of complaints by voters that it was difficult to record choices in that race.

Mitigating factors: Ideally, all touch screens should be re-calibrated and tested prior to an election to ensure performance quality parameters.

6.2.2 Findings Regarding Recording of Votes

6.2.2.1 Prospective Software Faults During Transfer From Volatile to Non-Volatile Memory.

Overview. The iVotronic voting process requires the votes registered on ballots in volatile memory (RAM) be transferred to non-volatile memory (the internal triply-redundant terminal flash) when

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the voter completes their selections and casts their ballot by pressing the vote button. Such data transfers are a natural place to examine in response to the reported anomalous data patterns.

Hypothesis. We analyzed the iVotronic firmware to identify potential flaws that could cause multiple vote images to be modified by a single voter session. If possible then this would reduce the necessary occurrence of an error from 10,000+ (the number of undervotes) to several hundred (the number of voting machines), since a single error in each machine could affect all votes on that machine.

Technical Analysis. The team spent combined approximately twenty hours reviewing all the code capable of writing to the non-volatile (terminal flash) chips. There are three terminal flash chips, each of which contains a copy of the ballot images (e.g., each voter's selections on the ballot). The process of writing to a terminal flash is more complex than writing data to RAM since each write operation to terminal flash must be preceded by a write-enable command. The write enable requires that a specific command word be written to the start of the flash memory sector; without the write-enable command, any subsequent write operation would be nullified. This makes it much more difficult for an errant memory write operation to corrupt the ballot images stored in terminal flash. Code that enables writes to the sectors containing ballot images exists in a single location in the firmware code. This location performs a write of a single, complete ballot image (copied from RAM). The only other operation performed on these sectors of the terminal flash memories is complete sector erasing.

A close inspection of the code reveals that actions from a single voter cannot modify the ballot images previously written to terminal flash. Furthermore, the code that writes a new ballot image to terminal flash is careful to avoid overwriting previously written ballot images: it identifies where current ballot images reside and writes the new ballot image to an unused portion of the sector. There is some randomization in the selection of which sector a ballot image will be written (to provide anonymity to the voter by avoiding ordering ballot images in the same manner as the votes were cast), but proper checks are made to avoid overwriting prior ballot images or writing partial ballot images due to memory storage full condition. Once a sector is chosen, ballot images are stored sequentially in that sector until that sector is full. If the selected sector is full, an alternate sector will be chosen.

The code reveals that it is possible that a ballot image would not be written if all sectors were full when the write is attempted. This event would generate an emergency shutdown condition, all prior ballot images would be retained in persistent memory, and the event log is appropriately updated to reflect the emergency shutdown condition. This event is unlikely to occur in practice due to the capacity of the terminal flash to hold many ballot images.

Mitigating Factors Present in Sarasota. Most of the voting machines contained dozens or hundreds of ballot images at poll closing. This is far fewer than the storage capability of the terminal flash memories. No voting machines contained enough ballot images to fill the terminal flash memory necessitating an emergency shutdown.

6.2.3 Findings About Terminal Closing Processes.

6.2.3.1 Examine Potential Flaws When Transferring Results from Terminal Flash.

Overview. We analyzed the firmware to identify potential flaws in accumulating and extracting results from the iVotronic. Results may be extracted either by writing the terminal flash images (event log and vote images) to an inserted compact flash card or by uploading them through the serial port/modem.

Enabling Technology. Two separate routines are used for reporting terminal flash results to a compact flash card or to the serial/modem port.

(1) In the case that the results are written to a compact flash, one routine is called. This function checks to see that enough space is available on the compact flash card to hold either one terminal flash image (2 megabytes) or all three terminal flash images (6 megabytes). The choice of whether to copy one flash image or all three is made by the user and selected via an administration screen. If enough room is available then the contents of either one or three of the terminal flash images is written to the compact flash card. This operation writes 31 sectors of 128 blocks of 512 bytes per block. The last sector on each terminal flash chip is not written, but this sector contains only utility information not relevant to any audit. The actual data transfer is performed by a COTS library function `po_write()`, which provides a low-level interface to the compact flash.

(2) Reporting flash images over the serial link is performed by a different routine.

These two methods of reporting correctly reflect the contents of the terminal flash memory relevant to accessing vote image and event data. They also serve as a semi-independent check of the functionality of the other.

6.2.3.2 Do Audit Log Functions Record Events Properly?

Overview. We consider whether the audit log functions can fail to record events that they are called to record.

Hypothesis. An event occurs that should be listed in the audit log, such as closing the polls and reopening them, but is not shown when the log is examined. This situation would not cause or explain any undervotes itself, but it would explain how an auditable action that would cause the undervotes might not be recorded.

Enabling Technology. We consider how the audit log subsystem works, focusing on the logging functions. On the iVotronic, the audit log is also known as the event log.

Technical Analysis. The audit logs are stored in terminal flash during the voting. Three copies of the log are kept, and they are written sequentially (that is, the first copy is written, then the second, then the third). Audit log records are stored in an area called the “event queue”, which is stored in specific flash sectors. The bytes in terminal flash memory are bitwise initialized to zero. In what follows, think of the event queue as an array of event records stored in the elements of the event queue.

An event record consists of a numeric event code, the time the event is recorded, the serial number of the PEB involved, and the type of PEB (Supervisor or Voter). When the event log subsystem is initialized, it sets a variable to the beginning of the unused section of the event queue. It assumes events are written sequentially, so if there are events in the queue, it skips over them until it finds the first unoccupied element. This initializes the audit log subsystem.

The routine that records events takes a parameter indicating the event to be logged. The record is constructed and added to the event queue and is written to the event log in terminal flash. If the event queue is full, an “emergency close” routine is called. That routine immediately calls the routine that records events, causing an infinite recursion. The calling stack would grow until a hardware fault occurs. This could overwrite much of memory. It would undoubtedly cause the terminal to crash, freeze, lock up, or cease operating properly.

Mitigating Factors Present in Sarasota. While there were several reports of terminals locking, audit logs did not show improper terminal closing or events that would indicate that this situation occurred. Moreover, event log storage space is sufficiently large that only an extraordinary voter volume could cause memory to fill.

Potential Remedy. The vendor could fix the interaction between the routine that records events and the “emergency close” routine to handle the case of the audit log being full. Also, election officials could check that all terminals are properly closed on Election Day, and that closing is properly reflected in the audit logs.

6.3 Findings Related to Asynchronous Processes

Overview. While the iVotronic has only one main thread of control, it does include hardware interrupt handlers, which read and/or update global variables. When a variable is read or updated concurrently by the main thread and interrupt handlers, there is a risk of timing-dependent errors, usually called “race conditions”. Race conditions are difficult to detect in testing, because the combination of event timings that results in erroneous behavior may be very rare, and may depend on random events and minor variations in hardware tolerances that cannot be directly controlled or reproduced. Therefore, one cannot rule out, a priori, the possibility of timing-dependent errors involving asynchronously updated variables in the iVotronic.

Hypothesis. A timing-dependent error involving interaction between the main program and hardware interrupt handlers might cause erroneous behavior on some machines during the election, that would not show up on other machines or during pre- and post-election testing.

Enabling Technology. We considered the interactions between interrupt handlers and the main thread, through global variables, looking for potential race conditions.

Technical Analysis. We searched the code for indications of multi-threading. While there are comments in a few places that mention “thread” and “multi-tasking”, we were unable to find any indication of multiple threads in the executable code. As far as we can tell, the iVotronic software runs directly on the main processor hardware, with no operating system kernel, and the main program is the only thread of control other than the asynchronous hardware interrupt handlers. Apparently, the main program is reloaded and called each time a new voter session is started.

We reviewed all the sources of hardware interrupts, and all of the hardware interrupt handlers, to understand their interactions with the rest of the iVotronic software. We enumerated all of the global variables read or modified by hardware interrupt handlers or by functions called (directly or indirectly) from hardware interrupt handlers. We then examined the places in the main program and the subprograms called by the main program where references are made to those variables.

We first verified that the asynchronously updated variables are all of a size that permits them to be read and written atomically by the main program; that is, it is not possible for a hardware interrupt handler to execute between the reading/writing of one byte of the variable and the reading/writing of the rest of the variable. All of the asynchronously updated variables passed this check.

We then attempted to verify that all such variables were declared as “volatile”, so that the compiler would not perform unsafe optimizations (e.g., suppression of apparently-redundant load and store operations) on them. Most of the asynchronously updated global variables were not declared to be volatile, but we do not believe this mattered with the particular compiler used on the iVotronic software. That is, with there being so many cases, if the compiler performed optimizations of the kind that would be unsafe on these variables: (a) the results would probably have been detected in testing; (b) the probability of failure would have been uniform over time, affecting all races with equal probability; (c) the failures would be exhibited in ways other than just undervotes.

We next classified the uses of the asynchronously updated global variables, according to usage. Most of the uses conformed to one of the following generally-safe paradigms:

(1) Count-down timers. A software count-down timer is a global variable that is decremented periodically, in these cases by the hardware timer interrupt handler, until it reaches zero. The main

thread uses a count-down timer to delay for a given length of time, by setting the timer to a positive count (usually a count of milliseconds) and then looping until the timer value has reached zero. This usage pattern is generally free from dangerous race conditions, so long as the variable is of a size that can be read atomically by the main thread, and only the main thread sets the value of the timer. If an interrupt handler may also reset the timer, it is possible for the main thread to delay for a longer or shorter time than expected. The iVotronic software contains several variables of this type, though we believe the code could be simplified by consolidating some of these timers.

(2) Counters. A software counter is a global variable that is incremented periodically, in these cases by an interrupt handler. The main thread uses a counter similarly to a count-down timer, by initializing the counter to zero, and then looping until the value passes some limit. This usage pattern is generally free from race conditions, so long as the variable is of a size that can be read atomically by the main thread, the code that increments the counter stops before the variable can overflow, and either the main thread uses “>=” or “>” (rather than “=”) to check the timer, or the incrementing code stops at some moderately small value. The iVotronic software contains several variables of this type. They appeared to be used correctly. However, the code could be simplified and made more readable by consolidating some of the counters, and by adopting a more uniform policy of using just the count-down or just the count-up paradigm, rather than the present apparently arbitrary alternation.

(3) Read-only state variables. A read-only state variable is updated by the interrupt handler and read by the main thread. This usage pattern can be safe if the size of the variable allows for it to be read atomically by the main thread, and the logic of the main thread takes into account the volatility of the value of the variable. The iVotronic software contains many variables of this type, including those that keep track of the device model and serial number (presumably not changing, once set), whether a PEB is currently inserted and the type of PEB inserted (changing, but not ordinarily changing during the casting of a single ballot), and the X and Y coordinates of the last event on the touch screen (changing rapidly). While we did not find any specific errors in the usage of such variables, we did find that the need to continually poll for changes in these variables made the logic of the main thread difficult to follow.

We also verified that the interrupt handlers were either coded in a re-entrant-safe fashion or took steps (e.g., disabling interrupts) to ensure that they would not be called re-entrantly. We also examined all code that disabled interrupts for a lengthy period of time; no problems were detected.

A characteristic of this software architecture, in which the main program polls for changes made to global state variables by interrupt handlers, is that there may be variable delays in the responses to external events, depending on what the main program is doing when the event occurs and how soon after the event it checks the corresponding global state variable. In the worst case, an event may fail to be detected entirely, if the main thread does not check the corresponding global state variable before it is again modified by a subsequent event.

For example, when a voter touches a location on the touch screen, an interrupt handler records the fact that the screen has been touched in a global state variable, and also records the X and Y coordinates of the touch. If the main program does not check these variables before the voter touches another location, the first touch will be ignored. This is consistent with observed behavior of the iVotronic, i.e., if a person touches two locations on the touch screen in rapid succession the system will ignore the first touch. There is no problem in this case, since the voter can see whether each touch was registered by whether a corresponding “X” that appears on the screen. In fact, this behavior may be desirable, since the last touch point would normally be the one the voter intends.

Finally, we examined whether the various libraries we did not read (see Section 5.6) may have interrupt handlers or sections where they disable interrupts. We considered this possibility highly

unlikely for three reasons (1) We did not see any functions performed by library calls that would logically require an interrupt handler. (2) The library code is a generic, off-the-shelf product intended for embedded applications. It would put too large a burden on customers to design systems that use interrupts if the users did not have visibility of all interrupt handlers. To avoid IRQ number conflicts, the application would need to be involved in setting up the mapping from IRQ number to handler entry point. (3) In the section of code that sets up interrupt handling vectors, we did not find any references to function entry points not present in the code we reviewed.

6.4 Findings Related to Election Audits

6.4.1 Suggestions to Improve Audits

Overview. During this review we realized that certain enhancements to the iVotronic audit logs could have made the code review and audit easier and/or more complete. Based on our experiences in this work, we believe that there are opportunities to augment voting systems in ways that would significantly enhance our ability to perform meaningful election audits after the fact. We present these observations here.

Paper Trail. A paper trail would have served to confirm that votes were not altered after they had been recorded. In this case, the code review to check that ballot images were not altered after they had been recorded was fairly easy, if we assume the absence of malicious activity. If some voters verified that the paper trail was an accurate record of their intent before casting their ballot, then the number and contents of spoiled paper records would provide additional evidence to an audit regarding how many voters reached the review process without selecting a candidate in CD13 and how many successfully voted in CD13 thereafter. However, there is no reason to believe that a paper trail would have prevented the anomalous undervote. If many voters did not check the review screen, it seems likely that, all else being equal, many voters would also fail to check the paper trail. All in all, a paper trail might have provided some additional information to an audit, but likely would not have prevented the high undervote rate and likely would not have eliminated the controversy.

Voter Action Log¹. If the audit logs had been expanded to record all user interactions with the system, this would have permitted a more detailed analysis of the cause of the CD13 undervote. This expansion appears to be feasible, since the storage capabilities of modern voting machines far exceed the requirements for logging screen touches and screen contents.

Such a system would have two major advantages and one minor advantage not found in existing touch screen audit mechanisms. The first is that issues of voter confusion of the ballot structure or machine interactions can be studied at the conclusion of the election. This can provide valuable feedback for improving the specifications for ballot designs and for the operation of future voting systems.

The second is that a full log of all user interaction might reduce our reliance on code review and enhance confidence in the results of any audit. The most complex code in the iVotronic is the user interface where selections were made and displayed. The undervote question involves whether the voter selection was an accurate reflection of what the voter saw on the display. The complexity of the user interface code made it difficult to answer this question with confidence. A log of all user interaction would provide a way to sidestep this difficult code review problem. Auditors could inspect the log to examine voter actions for evidence to infer display accuracy rather than studying

¹ This idea originated in conversations between David Wagner and Steven Bellovin unrelated to this report.

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the code to try to predict whether the code will always display the appropriate information under all possible foreseeable circumstances.

The third advantage, admittedly minor, is that a full event log containing all user interaction enables a semi-independent way of tallying the votes assuming the ballot used is known and the voting terminal displayed the ballot properly. An independent system can read the event log and, using only that information, can count the votes for each candidate in each race. While this does not help to verify that the votes were recorded correctly in the first place, it might provide a way to check that the tabulator summed up the votes correctly. The system or systems calculating votes from voter logs can be developed by a different company than the electronic voting machines, or by multiple different developers.

One problem is that there are significant unsolved vote secrecy problems with this mechanism. A full log of all user interactions creates a covert channel through which a voter could transmit evidence of how she cast her vote. This enables the voter to sell her vote or to be coerced, and, of course, such an interactions log would have to be stored in a way that does not compromise the privacy of the voter.

7 Security-Related Findings

As one component of the code review, we analyzed the security of the iVotronic firmware to determine whether fraud or computer intrusion could have caused or contributed to the CD13 undervote. This section details our findings about the security properties of the system that might be relevant to the CD13 undervote.

We discovered several software vulnerabilities in the firmware. We are convinced that none of them were exploited in Sarasota in a way that would have caused or contributed to the CD13 undervote. We present these threats as pertinent to this report under the Statement of Work because we cannot absolutely rule them out as a possible contribution to the undervote.

Our security findings relate to external data in four areas: PEBs, Compact Flash cards, modem operations, and password handling. External communications are natural targets that intruders might try to attack. While our analysis of modem operation did not reveal any software vulnerabilities, we discovered software security vulnerabilities in the other three areas. It is our assessment that none of them were exploited in Sarasota. We give our reasoning in more detail below.

There is a natural inclination to try to represent the following attacks with a probabilistic model that identifies a list of preconditions that would be necessary before an attack is possible and then treat each of these preconditions as independent events. If each such event is unlikely and the events are independent, then the probabilities multiply, yielding an attack likelihood that is statistically insignificant or even indistinguishable from zero. For instance, if we identify 10 such events, each occurring with probability $1/2$, then the total probability of a successful attack is less than one in a thousand.

While this argument is intuitively appealing, it is also inherently flawed. There are two problems. First, these events are not independent. Often, if we assume a sufficiently motivated and skilled adversary, many or even all of the preconditions may pose no problem for such an attack.

Second, there is no way to scientifically or systematically assign probabilities to the events. This is true for many reasons, but we give two here. First, there are no current or historical records upon which to found an estimate of these probabilities. We can prognosticate about the likelihood that someone can, for example, steal a voting terminal from a controlled space, but prognosticating is the best we can do and different prognosticators may predict dramatically different values with no scientific way to reconcile the difference.

Finally, attacks are not random. Attacks are deliberate human acts, not acts of nature. This makes the presence or absence of attacks hard to predict and limits the usefulness of probabilistic models based on random behavior. Further, we are not aware of any Byzantine models that capture the particular features of this situation.

In Table 1, we identify conditions that would have to occur for an attack to be successful. However, as argued above, the number of conditions found in Table 1 cannot be used as a measure of the ease or difficulty of attack; instead, a more nuanced analysis is necessary.

Table 1 is a simplification, and it disregards factors that may influence the difficulty of exploiting these vulnerabilities. For instance, source code for the iVotronic firmware would certainly facilitate development of the attacks described below, though it is probably not a necessary precondition. In any given circumstance, other items or knowledge may be necessary or helpful to execute an exploit.

Conditions to Exploit a PEB Virus
Must be a malicious, sophisticated intruder
They must acquire:
- one or more voting terminal(s)
- one or more PEB(s)
The virus must:
- be effectively injected
- propagate
- execute its designed attack
- delete any trace
Accomplish all of this undetected
Table 1. Virus Conditions

7.1 The Virus Threat

We identified several buffer overflow vulnerabilities that in a worst case scenario may allow an attacker to take control of a voting machine by corrupting data on a PEB. These create the possibility of a virus that propagates by exploiting the buffer overflow vulnerability. Viruses pose a serious threat to computer system integrity. Procedural and physical security defenses may reduce or mitigate virus risk but cannot guarantee attack prevention. Unfortunately, the testing procedures that are standard practice in the elections community are unlikely to discover these vulnerabilities or the presence of a virus. The vulnerabilities might be found through careful analysis of the voting machine's source code (as we have done). While it may also be difficult for a prospective attacker to discover these weaknesses, their presence opens a door for attack.

If these vulnerabilities were exploited, it would be possible to hide their existence. A cleverly constructed virus can cover its tracks so that infected machines could not be detected by ordinary means and an appropriately programmed virus could self-destruct and erase all its tracks.

It is possible that an outsider could trigger an attack and that once one machine is infected, the virus would spread from machine to machine through removable storage media without further attacker involvement. We give a detailed description of potential virus exploits in Appendix B.

7.2 Vulnerability Verification

Buffer overflow vulnerabilities are well understood, both practically and in the literature. There is no doubt that the bugs that allow buffer overflow attacks to occur are present in the iVotronic firmware. However, we did not implement exploits for any of these vulnerabilities. Moreover, in what we believe to be unprecedented cooperation, the vendor (Election Systems & Software (ES&S)) offered to provide us with iVotronic equipment and technical analysis so we could implement these exploits for demonstration purposes. We declined their invitation for two reasons. First, we are confident that we could implement a rudimentary attack in a reasonably short period of time, but we believe such a simple exploit is not revealing. Several laboratory attacks, e.g. [11, 12] provide convincing evidence that academically identified buffer overflows in voting systems can be

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exploited in laboratory environments. Thus, there is little scientific benefit in constructing another elementary attack. Alternatively, we considered attempting to construct a more sophisticated attack, with all the features that a real attacker might implement. In the end, the team decided that such an effort was not necessary for our analysis. Nonetheless, we appreciate the vendor's willingness to provide the resources we would have needed.

7.3 Buffer Overflow Overview

A buffer overflow is a computer attack that results from copying more data than the destination area can hold, which results in writing over other data. Any buffer overflow bug constitutes a potentially dangerous defect. In the absence of malicious intent, it can produce unpredictable program behavior, but when the data being copied is carefully constructed, it can allow an attacker to transfer program control to her own malicious code. Once this happens, the attacker controls the machine.

Buffer overflows result from trust that the software places, inappropriately, in data from an external source. In the iVotronic firmware, the software implicitly trusts that the election definition file in the terminal's flash memory was generated by a legitimate entity. This assumption is not universally justified.

Not all buffer overflow defects are exploitable. Input filters, operational procedures, and even good fortune may establish an environment where a buffer overflow cannot be exploited to take control of the machine.

7.4 Propagation Mechanisms

Viruses that can infect only a single machine or a few machines are rarely dangerous. It is well known that viruses can propagate through removable storage media. The two prospective removable media on the iVotronic each have software security vulnerabilities.

7.4.1 Compact Flash (CF) Cards

The CF card stores an election ID file and a set of audio (.WAV) files that support various election functions. The code that reads one of these files from the CF card exhibits a classic buffer overflow vulnerability. It reads a variable-length string from the CF card and stores it into a fixed-size array in memory without size or other validity checks. If a malicious party embeds the data on the CF card, an overly long string can overwrite the return address on the stack and cause execution to jump to malicious code that was loaded into memory from the CF card.

To assess the risk associated with the CF vulnerability, we contacted Florida election officials, Sarasota County election officials, and vendor employees to understand how CF cards are handled during election administration. Here is our understanding of the processes in use in Sarasota County. (Any errors in this description are our responsibility. We thank election officials for their assistance in understanding election processes.)

Before the election, the election is set up on the election administration server at a central county location. A single CF card is written with the files needed for the election, from this server. This card serves as a master copy. The data on the master CF card is then duplicated, using CF duplication equipment, onto hundreds of CF cards, one for each iVotronic machine. Only four highly trusted permanent employees of the Sarasota County elections department have access to the elections administration server and to the master CF card before duplication. Before the election, a duplicated CF card is inserted into each iVotronic machine and the case is sealed with a tamper-evident seal by county election workers. Consequently, all CF cards contain exactly the same data before the start of the election, since they were duplicated from the same master copy.

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The iVotronic machines are transported to the polling place with the tamper-evident seal intact. In ordinary operation, poll workers never need to disturb the tamper-evident seal. After the election is over and the machines are returned to the county warehouse, two county election workers verify that the seal is intact on every machine before removing the CF card. Consequently, the tamper-evident seal protects the CF card from the time the CF card is inserted by county workers until the time when the CF card is removed by county workers. Any attempt to gain access to the CF card before then will presumably be detectable because it would involve breaking the tamper-evident seal. After the election, the CF cards are inserted into a CF reader attached to a laptop or server at the county warehouse, the contents of the CF cards are uploaded to the election administration server and archived, and the CF cards are stored for reuse in a subsequent election.

This process seems excellent from a security point of view. Each CF card is associated with a single iVotronic machine. CF cards are not shared between machines, so there is no likelihood that they would form a route for infection to spread. The contents of CF cards are erased between elections, so even if a CF card were to come to contain malicious data during the course of one election, that malicious data would be overwritten before the CF card is inserted into another iVotronic machine for the next election.

For these reasons, assuming the above procedures were followed, we believe that the CF cards posed a very low risk of spreading viruses in Sarasota County. Given that the above procedures were followed, we do not see any way that an outsider could have injected a virus and caused it to spread among Sarasota machines using CF cards. It is to Sarasota County's credit that their procedures regarding the chain of custody and security protections for CF cards are able to defend against even unanticipated security threats such as this one.

7.4.2 The Insider Threat

The greatest security threat to any computer system is the insider threat. This certainly applies to voting systems.

We illustrate the hypothetical insider impact by discussing the master CF card. The master CF card is a critical item. If that card contains malicious data when it is duplicated, then the malicious data will be duplicated onto all CF cards, which might then cause the infection of all iVotronic machines. If the election administration server is compromised, the CF card could be loaded with malicious software at its source. Alternatively, if someone were able to swap the legitimate master CF card for an illegitimate CF card that had been prepared in advance, they could arrange that the illegitimate CF card contained malicious data. Thus, the procedures for handling of the master CF card before it is duplicated are critical. CF cards are small devices, about the size of a postage stamp. This would make it easy to conceal a replacement card.

One significant mitigating factor in this case is that under Sarasota County procedures, only four highly trusted individuals are authorized to access the election administration server and the CF cards. This reduces the risk because it limits the number of people with an opportunity to exploit this vulnerability.

It was outside the scope of this report to perform a comprehensive review of the physical and operational security of the Sarasota County elections department.

7.4.3 The Potential for a PEB Virus

In a second removable media vulnerability, the PEB is also a potential virus propagation vehicle. Once a device (terminal) is infected by a PEB, that terminal may infect other PEBs inserted into it. Thus, if PEBs move between devices within a precinct, the virus could spread from machine to machine and from PEB to PEB. If terminals move from precinct to precinct, the virus can propagate

throughout the county over time. Though the vulnerability that we discovered depends upon what operations are invoked on the machine (see Appendix C), it is still possible for a PEB virus to propagate if those operations are triggered with sufficient frequency. For example, triggering the voting operation with a malicious PEB will not propagate a virus, but opening the polls or printing reports on an iVotronic may pass on a virus.

This is a critical point in analyzing a potential virus exploit in the CD13 race, because an infected PEB cannot propagate the virus unless a terminal with that PEB inserted executes an unsafe operation. We detail this mitigating factor in paragraph 7.5.2.

Thus, an attacker may need to target a Master PEB in order to improve propagation likelihood. The Master PEB is important because it is used to open every terminal in a polling place, and the process of opening the polls is an unsafe operation. Thus, an infected Master PEB might infect every terminal in a polling location, though the virus could only spread to other precincts during a subsequent election.

A sophisticated virus attack might also attempt to infect a supervisor terminal. Supervisor terminals are a central point of risk, since an infected supervisor terminal can infect many PEBs prepared for a given election. We emphasize the need to carefully guard access to supervisor terminals and limit the operations that are performed on PEBs that are inserted into them.

The PEB vulnerability arises from an architectural flaw in the iVotronic source code design. During our source code analysis, we found many PEB-related security bugs that could be used by a virus. These bugs were similar in nature and are instances of the same architectural flaw. Significant additional discussion about PEB viruses appears in Appendix B.

7.5 Mitigating Factors

7.5.1 Supervisor Terminals in Sarasota

We noted above that supervisor terminals make excellent virus attack targets because they can have a much wider impact than voting terminals. The procedures in Sarasota mitigate the risk to some extent. For example, in Sarasota, supervisor terminals are stored in the secure Data Acquisition Reporting Center (DARC room) within the Supervisor of Elections office. Sarasota maintains fifteen supervisor terminals and uses only a subset of them for each election. For example, in the November 2006 election, Sarasota used six supervisor terminals. While infecting one supervisor terminal would be damaging, this policy would likely localize the impact.

7.5.2 Propagation Limited by PEB Operations

As we mentioned above, terminals can only be infected by corrupted PEBs if certain operations are executed while those PEBs are inserted.

It is important to note that the hypothesized PEB virus cannot be passed during the most frequent, and in many cases exclusive PEB operation: voter initialization. That is, the voter initialization operation is *safe*.

Also, an attacker might find it difficult to build a PEB that exploits all unsafe operation without noticeably interfering with the safe operations. If this were the case, it could complicate construction of a virus or slow its spread. We have no specific reason to believe this to be the case, but because we have not implemented a working exploit for the reasons stated above, it is hard to know what difficulties a virus writer might face.

7.5.3 PEB Handling Procedures

Removable media virus propagation properties are well understood and are easily estimated when we can assume random assignment of machines and media and machine to polling places. In our initial analysis, we generated a simulation that assumed such random behavior. Using that data, we estimated that a PEB virus would take four to six elections to propagate throughout the county. Closer evaluation identified PEB and terminal handling procedures that mitigate this threat. Specifically, PEBs do not move between precincts between primary and general elections. Thus, even if all PEBs in a particular precinct became infected during the primary, they would not be distributed among other precincts so the virus could not propagate further via PEB distribution between the primary and general elections.

Of course this does not prevent propagation since infected terminals can also spread a virus. In Sarasota, terminal distribution is less uniform, but definitely non-random. Specifically, terminals are stored on pallets in the county warehouse between elections. If after a primary each terminal from an infected precinct were assigned to a different precinct for the general election, the number of terminals in that precinct is the upper bound on the possible number of propagated precincts. More realistically, we were told that Sarasota stores terminals in the warehouse in such a way that they naturally retain a temporal clustering. While they may not be reassigned to the same precinct in the next election, they are likely to be removed from the warehouse and assigned to polling places in the next election in an order that is correlated to the order in which terminals were collected in the last election, causing a clustering effect. This kind of clustering would slow the propagation rate.

7.5.4 PEB Inventory Control

We were informed that, in Sarasota, PEBs are bar-coded and carefully inventory controlled. During non-election periods, they are stored behind three-tier locks, within the supervisor's office, inside the security controlled DARC room, and locked in cages. Of course an attacker may obtain a PEB from somewhere other than Sarasota County, but it is noteworthy that Sarasota strongly protects their PEBs between elections.

7.5.5 No "Shrink-wrap Effect"

One factor facilitating the spread of viruses on the modern Internet is "the shrink wrap effect", where many users use the same software and where attack mechanisms are well known and are even published on the Web. Because shrink-wrapped software is in widespread use, there are many potential targets and there are many people able to acquire the information and skills necessary to create such a virus. The iVotronic architecture is not subject to the shrink wrap effect. It is special purpose hardware and software whose architecture and implementation details are protected from wide distribution. Only sophisticated attackers with specific goals could exploit these vulnerabilities and they could only confidently perpetuate the spread of such a virus with extensive preparation and perhaps a bit of luck.

7.5.6 Virus Developer's Tradeoffs

While virus writers may exercise an immense variety of attacks and deception techniques, these techniques are subject to tradeoffs. For instance, if an attacker chooses to propagate a virus from machine to machine, she introduces the possibility that the virus could be detected by someone who knew how to look for it. FLDoS conducted such an integrity check during the ongoing audit process. In their test of six iVotronics terminals used during the election, FLDoS extracted the removable iVotronic firmware EPROM chips, placed them in a commercial EEPROM reader, and saved the firmware image into a bit-image file. They compared these extracted images to an image

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from the software's secure build process conducted by the federally approved independent testing authority that certified the iVotronic and they were identical. This provides strong evidence that no virus was resident in these iVotronics after the election and therefore strongly suggests that no virus was present on Sarasota terminals after the election.

Conversely, if virus writers elect to cover their tracks and destroy all evidence after they accomplish their task, they limit their impact by limiting their ability to perpetuate themselves.

7.5.7 Controlled Hardware and Software

The PEB is a special purpose device that is not available off the shelf. While limited availability does not provide strong systematic security, it does eliminate the shrink wrap vulnerability.

Additionally, a prospective attacker would almost certainly need to acquire one or two voting terminals for use in preparing the virus, likely through theft or fraud. The attacker would need to prepare the attack well in advance, easily taking weeks or months of technical work to create such a virus. These factors significantly reduce the potential attacker population.

7.5.8 A Sophisticated Intruder or an Insider

Some activities we describe are most easily accomplished by trusted insiders. However, insiders accept risk of suspicion as well. Additionally the number of insiders with the access and opportunity to mount this kind of attack is limited and their identities and responsibilities are well-known.

A virus-based attack by an outsider would certainly require considerable technical sophistication and preparation. Such an attack certainly could not be mounted by the average person on the street, by the average computer user, or probably even by the average software developer. The attacker would need to be skilled in computer programming and in the exploitation of computer security vulnerabilities, with broad and deep understanding of computer software and reverse engineering.

7.5.9 Margin for Error

One challenge facing any would-be attacker is the low margin for error in mounting this kind of attack, and software developers well know that perfect software, including attacking software, does not exist. If the virus contains a bug or programming error that causes it to behave in a way different from how its creator intended, that bug might have effects that could disable the attack, cause it to be detected by election officials, or expose the attacker's identity and methods to forensic analysis.

Just as all application code has defects, attacker code is also subject to defects. Moreover, it would be difficult for an attacker to test virus operation rigorously in the lab before injecting it into the wild, so an attacker would have to be concerned about the possibility of bugs in her code. There is no clear way for an attacker to influence or control the virus after it has been introduced into the system, so if she wants to remain undetected, the attacker must plan to succeed on the first try. Even with the most careful precautions, complex first try attacks are not guaranteed to succeed.

7.5.10 Temporal Proximity

Another significant mitigating factor is that, because of the delay in the spread of the virus, unless the attacker has special insider access, the attacker would need to prepare the attack in advance and inject the virus well before the election that has been targeted for attack. For instance, if an outsider wanted to manipulate the November 7, 2006 general election, the attacker would have had to fully prepare and program the virus well in advance: at a minimum, because of the complexity of the attack, we believe that the virus would have to have been introduced before or during the August 2006 primary election and probably earlier, thus could not be candidate-specific. The virus would be a "fire-and-forget" weapon: the attacker probably could not change its programming or targeting

after it was introduced. This means that the attack would need to be highly premeditated and well planned. An attacker could not mount this kind of attack on the spur of the moment or on a whim.

7.5.11 Decentralized Election Administration

An additional mitigating factor is that because each county ordinarily administers its own elections and counties do not share equipment, a virus would not spread outside the boundaries of a single county. An attacker who wanted to influence the election in multiple counties would have to inject the virus in each targeted county, and introducing the virus requires some kind of physical presence. This cannot be performed by someone living in some other country on the other side of the world or even someone in a neighboring county because these devices are not connected (for example, by a network). The attacker would have no way of knowing whether their attack would successfully change the outcome of the election.

7.6 Assessing the Factors

Taking into account all of the factors examined above, we judge there are strong reasons to believe no such virus was present during the November, 2006 election. To explain the observed undervote rate in Sarasota, Charlotte, and Lee Counties [8] (also see Section 8.1) all being caused by a virus, we would have to assume that the attacker separately attacked each of these three counties, at a corresponding increase in risk of getting caught. Also, as the discussion above highlights, these attacks would require substantial technical sophistication and extensive advance preparation. If an attacker had the capability to mount such an attack, the attacker could have exploited this capability in a far less noticeable way (e.g., by silently switching votes from one candidate to another instead of creating a high, attention-grabbing undervote rate). It is not clear what would motivate an attacker to use these capabilities in this way. Furthermore, there are other plausible explanations for the CD13 undervote that do not require such unlikely assumptions.

Finally, we found absolutely no evidence of any attack in Sarasota County that caused or contributed to the CD13 undervote, although we acknowledge that a highly sophisticated, perfectly executed attack might leave no evidence.

7.7 Modem Communications

We also investigated whether a virus might be able to spread by modem. After the polls are closed at the end of Election Day, an iVotronic may be connected to an extra “communications pack” device. The communications pack contains a modem that can transmit the election results to the county’s central server’s Data Acquisition Manager (DAM) over the phone. After examining the iVotronic source code, we could not see any way that a virus could spread from the Unity server to an iVotronic machine. Very little data is transmitted from the Unity server to the iVotronic machine, and that data is handled by the iVotronic code in a safe way. We did not see any buffer overruns or other security vulnerabilities in the code that handles data received from the Unity server. Consequently, we believe there is no way to infect an iVotronic machine over the modem.

Moreover, Sarasota collection procedures do not involve connecting iVotronic machines to modems. Rather, PEBs are transported to four regional sites where they are entered into a laptop computer through a PEB reader and the results are reported via modem connection to the election central. The modem connection is manually synchronized via a separate phone connection.

7.8 Fixing the Virus Vulnerabilities

The misplaced trust in PEB data gives a prospective attacker several optional exploits that existed in the code during the CD13 election. It was beyond the scope of this review to identify an exhaustive list of all places in the code that may be vulnerable, since much of the firmware was not executed in Sarasota. All vulnerabilities must be eliminated or mitigated before the software could be considered secure.

Fixing these vulnerabilities is likely to be non-trivial because it requires fixing a flaw in the architecture and architectural flaws tend to be more difficult to fix once they are implemented. The software needs to avoid trusting inputs from untrusted sources. This would require introducing input validation and defensive programming through much of the code.

7.9 Procedural Defenses to Remediate These Vulnerabilities

Until the iVotronic firmware is modified to fix these vulnerabilities, there are a number of procedural defenses that election officials could use to defend against the virus threat.

1. Each terminal and each PEB should be assigned to a single precinct. This assignment should never be changed or rotated among precincts and should remain fixed for the lifetime of the equipment.
2. Master PEBs should be strictly controlled using procedures similar to those applied to paper ballots. They should be constantly under lock and key during the voting day, with sign-out and sign-in procedures to maintain the chain of custody at all times.
3. Polling place procedures should minimize PEB cross-pollination: i.e., minimize the number of terminals that any particular PEB is ever inserted into and minimize the number of PEBs that are ever inserted into any given terminal. For instance, officials might set an upper bound of 5, specifying that no PEB be used with more than 5 terminals and no terminal be used with more than 5 PEBs. Optimally, a poll-worker with a PEB would be assigned a set of terminals, no other PEBs would be used on those terminals, and that PEB would never be inserted in any other terminal.
4. Supervisor terminals should be rigorously controlled. No unsafe operation should ever be performed on any supervisor terminal, if it possibly can be avoided. (See Appendix C for a list of safe and unsafe operations.)
5. Numbered tamper-evident seals should be used to deter tampering with the CF card slot. Logs should be kept of all seals applied and/or removed, and two-person controls should be applied when election workers handle CF cards.

Many of these procedures are in place in Sarasota County and their practices inspired some of our suggestions.

7.10 Passwords

A general security review is beyond the scope of our task. However, we detected significant password weaknesses that may allow an intruder to inject a virus into a terminal if they are given unsupervised access. We could not construct any scenario where password exploit could have caused the undervote symptoms without injecting a virus into the system. See Appendix D for further discussion of the password issues.

7.11 Security Summary

Our security analysis revealed several software defects that could allow an attacker to introduce a virus into the voting system that spreads through removable storage devices. We cannot absolutely

rule out the possibility that an attack was mounted during the November, 2006 general election. It is in principle possible to mount an attack that would leave no trace after the election is over and it is impossible (by definition) to detect such an attack. However, we found no evidence of an attack and there are strong reasons to believe that these vulnerabilities were not exploited in a way that caused or contributed to the CD13 undervote.

8 Analysis of Hypotheses

Team members and others have proposed numerous hypotheses that might explain the observed undervote. This section of the report deals explicitly with these hypotheses.

8.1 Assumptions.

We make the following assumptions based on information furnished by the Secretary of State concerning tests and activities not performed by our team. We did not independently verify them. We give textual names to each assumption for ease of reference.

SOURCE MATCH. The software used on the subject DREs was generated from the same source code that was examined by the team.

CVR CORRESPONDENCE. No discrepancy was observed among the following: (1) the summary tape generated on Election Day at the close of polls on individual machines; (2) the individual cast vote records (“CVRs,” or “ballot images”) recorded by the machines; and (3) the totals that were accumulated and reported by Unity.

OBJECT MATCH. The software present on the machine's internal EPROM after the election was the software originally certified.

TEST CONFIRMATION. No behavior was observed during the Secretary of State's testing that would have caused any valid selection in CD-13 to be altered or recorded as an undervote [10].

CHARLOTTE and LEE UNDERVOTE. Charlotte County observed an undervote of approximately 26% in the statewide race for Attorney General, and Lee County had a similar though slightly lower undervote rate in the Attorney General race. In Charlotte and Lee Counties, the layout of the Attorney General race was similar to the layout of the CD13 race in Sarasota County [8]. Other contests without the multiple-contest-per-page format did not have a high undervote rate.

If we hypothesize that the CD13 undervotes were caused by deliberate fraud, not by human factors considerations, then our hypothetical scenario has to include an explanation for why the Attorney General race in Charlotte and Lee Counties had such a high undervote rate. In other words, such a hypothesis has to assume that the attack was not limited to just Sarasota County, but also affected Charlotte and Lee Counties.

FLORIDA UNIQUENESS. We are unaware of any other jurisdictions in the United States that used the same iVotronic version that reported undervote percentages of the Sarasota and Charlotte Counties' magnitude.

8.2 Relevant findings from our source code review

The following definitions reflect observations made by the team based on source code review. We investigated these issues in a systematic and structured fashion and found no evidence to contradict any of these properties.

COMPLETE BALLOT. We observed no evidence during our code review of any defects in the code that would cause anything less than the complete ballot to be presented to the voter.

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PROPER DISPLAY. We observed no evidence during our code review of any defects in the code that would cause the display screens presented to the voter to inaccurately reflect the ballot from the PEB or the selections made by the voter.

ACCURATE VOTE DATA. We observed no evidence during our code review of any defects in the code that would cause the ballot images recorded to terminal flash when the voter casts her ballot to incorrectly reflect the selections made by the voter.

FULL RECORDING. The preceding three properties necessarily imply that when voters pressed the vote button, the CD-13 race was present on the ballot and, if the voter did not make any selection in the CD-13 race, the screen for that race showed no vote for either candidate, and the review screen displayed the message “NO SELECTION MADE” in the CD-13 race. We note that our observations are consistent with the explanation that ballot design combined with the absence of a prominent undervote warning led to the high undervote.

NO MALWARE. We saw no sign of any malicious logic deliberately introduced into the code to rig the election by falsely recording undervotes.

NO SERIAL RACE EFFECT. No evidence was found that a selection (or lack of a selection) in any race affected any other race or question on the ballot in any way. That is, selecting (or failing to select) a candidate in race X did not affect the presence or absence of race Y on the ballot presented to the voter or the presentation of candidates in race Y, and did not affect the proper recording of the voter’s selections in race Y or the appearance of the review screen in race Y. See Sections 4.1.7, 4.1.8, and 6.2.1.3 for further analysis.

NO SERIAL VOTER EFFECT. No evidence was found of any serial effect between voters. That is, as far as we can tell, the behavior of the machine for voter $n+1$ was not affected by any act performed or not performed by the previous voters 1 through n , assuming that voter n completed the act of casting a ballot.

NO TIME-SENSITIVE CODE. There is no indication of any time-sensitive code that would cause the machine to behave differently on Election Day than at any other time. We examined all of the source code that reads the clock and all of the code that uses any value based on a clock reading (directly or indirectly), and it was all innocuous. The amount of code in this category was limited enough that we were able to exhaustively analyze all of it, and we are confident that this code could not have contributed to an undervote.

NO VOTE PEB EFFECT. No condition giving rise to an “Invalid vote PEB” log event (of which 308 were recorded during the election) would cause the CD-13 race not to be displayed to the voter, cause a selection to be altered, or cause a valid selection to be recorded as an undervote. See Section 6.2.1.2 for further analysis.

NO SUPER PEB EFFECT. No condition giving rise to an “Invalid super PEB” log event (of which 48 were recorded during the election) would cause the CD-13 race not to be displayed to the voter, cause a selection to be altered, or cause a valid selection to be recorded as an undervote.

NO NETWORK EFFECT. No “networking” effects were observed, namely any condition occurring on machine B networked to machine A that would cause any ballot alteration or undervote on machine A.

NO PEB CLUSTER EFFECT. No “PEB cluster” effects were observed. That is, the fact that machines A and B in the same polling place were activated with the same PEB had no effect on any race on either machine or any other machine on which such PEB was used. In Sarasota, the PEB is removed from machine A before the voter votes, so no “state” caused by the voter can be transferred to machine B.

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8.3 Malicious Software Hypothesis

If the software used on the subject DREs was not generated from the same source code that was examined by the team, then the team's observations from examining that source code would be irrelevant. If the software on the machines was different, it must have been altered before or during the election, the altered version used during the election, and the altered software must have been subsequently replaced by the original certified version since this is the version that is now resident in the machines.

If the undervote was caused by malicious logic deliberately introduced into the source code, we did not find any evidence of such malicious logic in the source code examined by the team.

8.4 Hypotheses Summary

8.4.1 Machines dropped selections made in the CD13 race, creating an undervote.

Contraindications: (see Section 6.2.1.6)

- TEST CONFIRMATION
- FLORIDA UNIQUENESS. If the claimed behavior were present in the certified iVotronic software, one would expect that it would have been observed in other jurisdictions using the same software.
- FULL RECORDING

8.4.2 Votes were validly cast in the CD-13 race but were erroneously reported as undervotes.

Contraindications: (see Sections 6.2.2.1 and 6.2.3.1)

- TEST CONFIRMATION
- FLORIDA UNIQUENESS
- FULL RECORDING

8.4.3 No selection made in the CD13 race, but the review screen showed a vote, creating an undervote.

Contraindications: (see Section 6.2.1.6)

- TEST CONFIRMATION
- FLORIDA UNIQUENESS
- FULL RECORDING

8.4.4 Machine did not display the CD-13 race to some percentage of voters

Contraindications: (see Section 2.5.4 and 6.2.1.5).

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- FLORIDA UNIQUENESS
- FULL RECORDING (especially PROPER DISPLAY)

8.4.5 The particular ballot style used in Sarasota County caused the machine to behave abnormally.

Contraindications:

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- FULL RECORDING

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8.4.6 Some dynamic error not easily visible in the source code, e.g. buffer overflow or data left from previous voters caused the anomalous undervote.

Contraindications: (see Section 7)

- TEST CONFIRMATION. The error did not occur in testing, but would have had to occur with great frequency during voting.
- CHARLOTTE and LEE UNDERVOTE. Why did the problem occur in Sarasota, Charlotte, and Lee Counties, but nowhere else?
- FLORIDA UNIQUENESS

8.4.7 The touch screens were miscalibrated to prevent voting in the District 13 race.

Contraindications:

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- A very large number of machines would have exhibited the problem, and could not have been recalibrated before post-election testing. Thus, the problem would have been observed in testing.
- The undervote would have been much higher.
- Other races on other screens would have been affected but were not.

8.4.8 The touchscreens were miscalibrated so that the hotspot and corresponding candidate box were misaligned.

Contraindications:

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- A large number of machines would have exhibited the problem and could not have been recalibrated before post-election testing. Thus, the problem would have been observed in testing.
- Other races on other screens would have been affected but were not.

8.4.9 The touchscreen smoothing filter caused the undervote.

A smoothing filter is a mathematical procedure for damping transient touch screen effects such as the voter altering the position of her finger or changing the pressure exerted by the finger on the screen. The allegation has been floated on Internet newsgroups that the iVotronic touch screen filter could have caused the undervote. No explanation has been offered how the effect would confine itself to a single race on a single screen. The touch screen filter does not act differently on different screens.

Contraindications:

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- FULL RECORDING
- FLORIDA UNIQUENESS
- Other races would have been affected but were not.

8.4.10 A “controlling contest” specification linked CD-13 to a vote in a different race, thus affecting the voter’s selection in CD-13.

Contraindications: (see Section 6.2.1.3)

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- TEST CONFIRMATION
- CVR CORRESPONDENCE
- NO SERIAL RACE EFFECT
- The Sarasota County ballot styles did not contain any controlling contests (Section 4.1.8).
- No voter complaints about controlling contest messages (Section 6.2.1.3).

8.4.11 A “straight party” specification linked CD-13 to a vote in a different race, thus affecting the voter’s selection in CD-13.

Contraindications: (see Section 6.2.1.4)

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- NO SERIAL RACE EFFECT
- The Sarasota County ballot styles did not enable straight-party voting (Section 4.1.7).

8.4.12 A “special event,” such as a write-in or ADA voter, triggered an anomaly for this or subsequent voters resulting in the CD-13 undervote.

Contraindications:

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- FULL RECORDING
- FLORIDA UNIQUENESS
- Too few special events occurred to account for the undervote.
- Non-ADA machines also showed high undervote rates.

8.4.13 The actions of a voter in a race other than CD-13 affected the CD-13 race.

Contraindications:

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- FULL RECORDING
- NO SERIAL RACE EFFECT
- FLORIDA UNIQUENESS

8.4.14 Returning to a contest from the review page caused the CD-13 undervote.

Contraindications:

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- FULL RECORDING
- NO SERIAL RACE EFFECT
- FLORIDA UNIQUENESS
- Why would only CD-13 be affected?

8.4.15 A special language voter caused the CD-13 undervote.

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- FULL RECORDING
- FLORIDA UNIQUENESS
- Too few special language voters to account for the undervote.

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8.4.16 A mishandled interrupt changed the state of the machine and caused the CD-13 undervote.

Contraindications: (see Section 6.3)

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- FULL RECORDING
- FLORIDA UNIQUENESS
- A mishandled interrupt bug would have had to have affected the majority of machines to cause the observed CD-13 undervote rate, which means it must have occurred with fairly high frequency on the election; but the fact that no problem was observed during testing means that it would could only have occurred with low frequency during testing.

8.4.17 There was an error writing from RAM to the terminal memories causing valid votes in CD-13 to be recorded as undervotes.

Contraindications: (see Section 6.2.2.1)

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- FULL RECORDING (especially ACCURATE VOTE DATA)
- CHARLOTTE and LEE UNDERVOTE
- FLORIDA UNIQUENESS

8.4.18 Having multiple contests on the same ballot page caused changes depending on the order in which the contests were voted.

Contraindications:

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- FULL RECORDING
- NO SERIAL RACE EFFECT
- FLORIDA UNIQUENESS
- Why would only CD-13 be affected? In Sarasota County, there were other ballot pages containing multiple races, but there are no signs that those other races were similarly affected.

8.4.19 Variables holding information about voters were initialized to incorrect values or not initialized at all.

Contraindications:

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- FULL RECORDING
- FLORIDA UNIQUENESS
- Why would only CD-13 be affected? In Sarasota County, there were other ballot pages containing multiple races, but there are no signs that those other races were similarly affected.

8.4.20 An extra ballot style without CD13 was present on the supervisor terminal and large numbers of voters received a defective ballot.

Contraindications:

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- TEST CONFIRMATION
- CVR CORRESPONDENCE. The CVRs show that the race was present on all ballots displayed to the voters.
- FULL RECORDING
- Large numbers of voters would have reported this problem

8.4.21 The machine software made an error in determining where to write a ballot image, thereby overwriting parts of images previously written and deleting votes in CD-13.

Contraindications: (see Section 6.2.2.1)

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- FULL RECORDING (especially ACCURATE VOTE DATA)
- FLORIDA UNIQUENESS
- We studied the source code that is responsible for recording ballot images. That code was simple, clean, and well-structured. The amount of code in this category was limited enough that we were able to exhaustively review all of it. We are confident this code has no error that would cause previously recorded ballot images to be overwritten. See Section 6.2.2.1 for further analysis.

8.4.22 The actions of one voter affected the ability of the next or a subsequent voter to have a CD-13 vote recorded.

Contraindications:

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- FULL RECORDING
- NO SERIAL RACE EFFECT
- NO SERIAL VOTER EFFECT
- FLORIDA UNIQUENESS

8.4.23 Time-sensitive code was present on the machines to affect CD-13, but only during actual voting and was untestable before and after the elections (see Section 7).

Contraindications:

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- FULL RECORDING
- NO TIME-SENSITIVE CODE
- FLORIDA UNIQUENESS

8.4.24 An error caused electronic vote totals generated from ballot images to be written incorrectly to the closing PEB.

Contraindications: (see Section 6.2.3.1)

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- FULL RECORDING
- FLORIDA UNIQUENESS

8.4.25 Insertion of an invalid PEB (either vote or supervisor PEB) into the machine caused CD-13

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to be affected.

Contraindications: (see Section 6.2.1.2)

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- FULL RECORDING
- FLORIDA UNIQUENESS
- NO VOTE PEB EFFECT
- NO SUPER PEB EFFECT

8.4.26 The networking of multiple DREs together in the same polling caused CD-13 to be affected.

Contraindications:

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- FULL RECORDING
- NO NETWORK EFFECT
- FLORIDA UNIQUENESS

8.4.27 The use of the same PEB or set of PEBs among machines in the same polling place caused CD-13 to be affected.

Contraindications:

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- FULL RECORDING
- NO NETWORK EFFECT
- NO PEB CLUSTER EFFECT
- FLORIDA UNIQUENESS

8.4.28 The machines were tampered with after the election to erase the CD-13 votes on a high percentage of ballots.

Contraindications:

- CVR CORRESPONDENCE. The machine memories after the election (and presently) agree with the tallies produced and printed out at the precincts on election night. Therefore, the intrusion would have to have been made county-wide during the election and there is no evidence of such a widespread attack.

8.4.29 Firmware in the machines was tampered with to drop votes from the District 13 race and then erase itself before or at the close of polls, so no subsequent testing would reveal the intrusion.

Contraindications:

- CHARLOTTE and LEE UNDERVOTE. Any such attack should have been duplicated in Charlotte and Lee Counties, too.

8.4.30 Malware not present or visible in the source code was inserted into the machines in advance of the election to cause the CD-13 undervote.

Contraindications:

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- TEST CONFIRMATION. Any such malware would have had to have erased itself before the testing.
- CHARLOTTE and LEE UNDERVOTE. Any such attack would have had to have been duplicated in Charlotte and Lee Counties, too.

9 Conclusions

There is no topic that compares to electronic voting with regard to diversity of security demands, inherent complexity, and the intensity of emotions it elicits in society today. Voting systems demand the highest integrity standards. Everyone wants them to be perfect, but every method of software verification and validation has limitations that leave the possibility of undetected faults. Software code review has been proven to be one of the most effective methods of recognizing and identifying faults, but no software review can claim to provide absolute assurance that software is entirely fault free.

This report presents the background, organization, process, findings, and opinions of our firmware code review. We conclude with the following summarizing statements.

9.1 We are confident that no iVotronic firmware bug contributed to the CD13 undervote.

9.2 Independent audits benefit from cooperation from vendors, election officials, and developers.

9.3 Our analysis suggests several important points regarding electronic voting software.

9.3.1 Electronic voting code review demands technical specialists and is resource intensive.

9.3.2 Strong standards and standards enforcement are essential to effective audit.

9.3.3 Statistical analysis can contribute to election auditing, but it cannot replace code review. Statistical analysis and code reviews, used in combination, can be more effective than either method on its own.

9.4 Electronic voting software needs to be secure. While properly implemented procedures can mitigate many threats, neither election procedures, code reviews, paper trails, rigorous testing, advocacy group oversight, nor any other mitigating factor can systematically ensure voting system integrity where faulty electronic voting system software is employed. Secure software, written to exacting and enforced standards, and carefully constructed election system procedures are necessary to provide electronic voting system integrity.

10 Acknowledgments

Due to this project beginning and continuing through the holiday season and the new year, we owe a debt of gratitude to several FSU staff and students for their support efforts *above and beyond the call of duty*. Leo Kerms, Jon Nilson, Louis Brooks, Tina Suen, Kenny Zahn, Randy Langley, Yu Wang, Rick Bessey, Greg Thompson, and Edwina Hall responded to our calls well beyond anything we could have expected and we thank them for their efforts.

As part of our work we used Fortify Source Code Analysis (SCA), made by Fortify Software, in order to assist with the code review process. Fortify Software donated the tool to us free of charge for use on this project and we thank them for their contribution. We note that two members of the team (Bishop and Wagner) are on Fortify Software's Technical Advisory Board.

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11 Team Endorsement



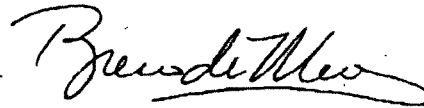
Ted Baker



Matt Bishop



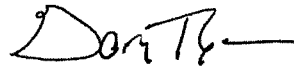
Michael Burmester
Co-Principal Investigator



Breno de Medeiros
Co-Principal Investigator



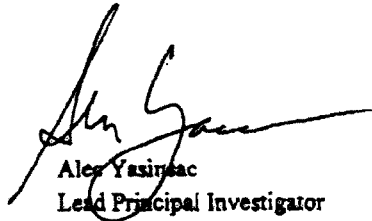
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Gary Tyson



David Wagner

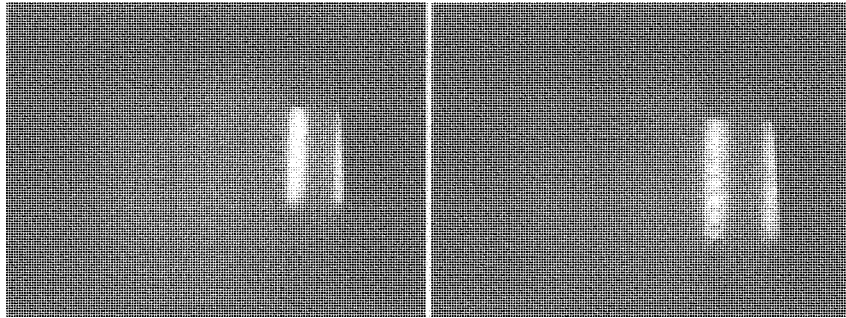


Alex Yasirac
Lead Principal Investigator

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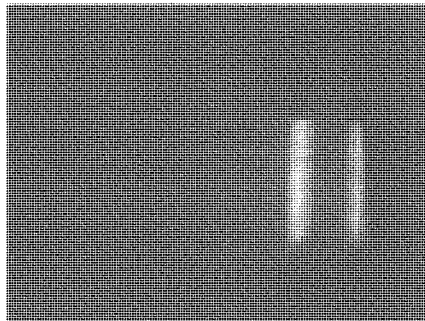
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- 12 Ariel J. Feldman, J. Alex Halderman, and Edward W. Felten, "Security Analysis of the Diebold AccuVote-TS Voting Machine", Center for Information Technology Policy and Dept. of Computer Science, Princeton University, September 13, 2006

Appendix A **CD13 Screenshots**



1st Ballot Page, US Senate Race Only

2nd Page: US Congress CD13 & Florida Governor



CD13 Re-vote Page

Appendix B Technical Analysis of the PEB Virus Threat

1 Creating an Attack Scenario

We are not aware of any plausible scenario under which an outsider could introduce a virus in the days before a general election and cause it to spread rapidly enough to infect many or most of the machines before the end of election day. Consequently, an attacker without special inside access would have to introduce the virus months in advance if they wanted to influence some particular race.

1.1 Introducing the Virus

An attacker might be able to inject the virus into a single machine by breaking into a polling place where the machines are stored unattended before election day. Or, the attacker could volunteer as a poll worker and inject the virus during a quiet lull on election day. Injecting the virus into a single machine could take only seconds, if the attacker is highly sophisticated and prepared in advance, and would not necessarily require any kind of suspicious-looking activity.

The virus spread rate depends upon many variables, on how the virus is programmed, the details of the operational processes used by county election workers, how the machines are used, and other details that one would not expect to have any effect on system security. We cannot confidently estimate how rapidly or slowly such a virus would spread without additional detail about Sarasota election management procedures. The full range of possibilities is analyzed later. The virus might propagate from election to election, taking half a dozen or so elections before the majority of machines are infected. In this scenario, a virus introduced at one point by an outsider might not have the capacity to cause large-scale influence until years after it was introduced.

Alternatively, a virus introduced by an outsider in one election might spread to all of the machines before the next election. For instance, in this scenario, a virus introduced by an outsider during the primary election might propagate rapidly enough to infect all of the machines used in the subsequent general election.

We call an iVotronic machine infected if the virus is resident in that machine's firmware. A PEB contains non-volatile storage, which is used to store the election definition file and other data. An infected machine can overwrite the election definition file with maliciously chosen data. If that happens, we say that the PEB has been infected. Due to a flaw in the iVotronic code, when the iVotronic reads the election definition file from a corrupted PEB, the iVotronic machine may become infected. If so, the virus could take up residence in the iVotronic firmware, replace the running code of the machine, and remain resident there.

The specific vulnerability is that the iVotronic software copies a variable-length nul-terminated (C-style) string from the ballot definition file into a fixed-size stack-allocated buffer. If the string in the ballot definition is too long, this will overflow the bounds of the fixed-size buffer and overwrite other parts of memory. An attacker could use well-known techniques to exploit this bug, inject malicious code into the address space of the iVotronic machine, and cause the processor to begin executing that malicious code. At this point, the attacker has complete control over the iVotronic: the iVotronic is infected.

We found numerous instances of this type of bug. Misplaced trust in the election definition file can be found throughout the iVotronic software. We found a number of buffer overruns of this type. The software also contains array out-of-bounds errors, integer overflow vulnerabilities, and other security holes. They all arise due to the fundamental architectural flaw of misplaced trust.

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A security expert might call this a failure of input validation. Standard advice in computer security is to “validate” all inputs, i.e., to check that their values fall within expected ranges and satisfy the relationships one expects, without making any assumptions that these conditions will necessarily hold until they have been explicitly checked. The architectural flaw is that the needed input validation is missing from the iVotronic software.

Finding and exploiting this vulnerability would require technical sophistication and dedication. We found these vulnerabilities by inspecting the source code. With more effort, an attacker may find these vulnerabilities without access to source code. The biggest barrier is that a would-be attacker would need access to an iVotronic machine for experimentation. Given this, a technically competent attacker may be able to, with sufficient time and motivation, discover these vulnerabilities. An attacker with the patience to reverse-engineer and disassemble the firmware would probably discover these flaws, but simpler methods would probably also suffice to reveal the vulnerability. For instance, applying a fuzzing tool to an existing election definition file would likely reveal the existence of stack-based buffer overruns, and at that point standard exploit methods might suffice.

1.2 Developing the Virus

Once the details of the vulnerability are known to the attacker, developing an attack seems likely to be straightforward if tedious. Ultimately, our best guess is that discovering this attack would be a matter of technical competence, tedium, and hard work, and it would require considerable motivation, but it would not require genius-level skills. A highly motivated and skilled lone individual could probably do everything needed to exploit the vulnerability. Consequently, the threat cannot be ignored.

Once the attacker has control of a machine, they would still need to develop a virus that automatically spreads from machine to machine. This virus could work by writing the exploit code onto every PEB that is inserted into an infected machine. Developing a working virus would require further work, but is likely within reach of a technically skilled programmer.

2 A Hypothetical Scenario: A Day in the Life of a Virus

To pull the pieces together, we illustrate one example scenario of how a virus might work by identifying what might happen in a step-by-step fashion:

1. The attacker obtains a voting machine for testing and a PEB. Of course these are controlled items and possessing them places the attacker at risk of discovery and prosecution. Stealing these items would be risky and illegal. Nonetheless, if the attacker can obtain these items, she could use these to develop malicious data and malicious code that, if placed on a PEB, can exploit the vulnerabilities and replace the running code of machines that use the PEB.
2. The attacker volunteers to serve as a poll worker. In many jurisdictions, the need for poll workers is so great that it is easy to become a poll worker simply by volunteering far enough in advance. In the worst case, the attacker might be installed as the chief poll worker in a polling place.
3. The attacker prepares an infected PEB. For instance, if PEBs are provided to chief poll workers before election day, then the attacker might take the master PEB and “infect” it by writing the malicious data and code that he prepared earlier onto the PEB. At this point, the PEB is “infected.” In a worst case scenario, if the attacker is able to use this PEB to open the iVotronic machines, then all of the machines in that polling place are infected. The attacker’s job is now done; the virus will spread without any further help from her.

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4. At this point, the virus has been introduced into circulation within this one polling place. If only one machine is infected, it can infect any PEB that is inserted into it by writing the same malicious data and code onto that PEB.
5. By the end of the day, many of the PEBs in that polling place may have become infected. Also, at least one machine in that polling place is infected, and possibly all of them.
6. At the end of the election, the machines and PEBs are returned to election headquarters and are later returned to storage.
7. During normal procedures before the next election, the PEBs are cleared, which erases the viral content on them and returns them to an uninfected state. The terminals are also cleared, but a sophisticated attacker can write the virus to prevent the clear operation from removing or detecting the virus.
8. The machines are reassigned to polling places and distributed before the next election. Some of those machines may still be infected, so some polling places in the new election will receive infected machines.
9. When opening the polls, if one of the machines in the polling place is infected, it can infect the PEB used to open it and all other machines subsequently opened with that PEB will become infected. For each polling place that started out with one infected machine, we can expect the virus to infect about half of the machines by the end of the day, on average.
10. At the end of the day, we now have a larger population of infected machines. These machines are returned to the elections warehouse and then reused in another election. Because the number of infected machines only increases and never decreases, the infected population will grow over time. Under worst case conditions, we can expect exponential growth in the number of infected machines.
11. After some number of elections, most of the machines in the population are infected.
12. Up until now, the virus might have done nothing other than spread. At some point, the virus's payload might be activated (e.g., if it is triggered to activate after a certain date). At that point, all infected machines are controlled by the attacker, and will behave as directed by the attacker program. For example, the virus may flip votes for a selected party in selected contests or may change votes into undervotes. At some pre-determined date, or after it has accomplished its goal, if its creator has programmed it to do so, the virus might self-destruct, erase all indications of its presence, and return all iVotronic machines and PEBs to their factory state.

This is one example scenario. Many variations are possible, each with their own strengths and weaknesses. There are many ways to introduce the virus initially. Also, as we shall see below, there are other ways that viruses might spread.

2.1 Hypothetical Propagation Speed

One obvious question about such a scenario is: How fast can such a virus spread?

2.1.1 Bottom-up Propagation Speed and Limits

Since propagation is only accomplished via shared media, media sharing restrictions can control propagation from the bottom up (i.e. PEB to terminal to PEB). As we noted earlier viruses are highly unlikely to spread across county lines because counties generally do not share media and equipment. If no media are routinely shared, the virus could only propagate via policy violation, human error, or illegal activity. Moreover, voting is a safe operation, so inserting a PEB into a terminal to initiate a voting session cannot infect the terminal.

Thus, the media sharing policies within counties control the propagation potential. We constructed a simulation to evaluate the propagation speed in a hypothetical environment where machines and PEBs are randomly distributed. This simulation suggested that the number of infected machines grows exponentially with the number of elections and, under these assumptions, the virus would spread to infect most machines within about five elections. However, as discussed in Section 7.5.3, these randomness assumptions do not reflect the practices in place in Sarasota County, so we reference this result only as a baseline, pessimistic scenario. Even in this case, comprehensive propagation would take three election cycles on average so an attacker who wanted to infect most of the iVotronic machines by injecting a virus into a single machine would need to prepare the virus and introduce it into circulation several election cycles in advance.

This also shows how implementing a process that consistently places terminals and PEBs in the same precinct in every election can prevent virus propagation. Again, this leverages the decentralized nature of election management to enhance security protections.

2.1.2 Supervisor Terminal

If a Supervisor terminal were infected, the process of preparing PEBs for the next election could cause every prepared PEB to become infected. The subsequent poll-opening process at each polling place with these infected PEBs would cause all of the voting terminals to become infected. This means that the Supervisor terminal is a single, central point of vulnerability.

There are three primary threats to the supervisor terminal. The first is an insider attack, which is straightforward. The second is compromise via illegal activity, essentially where an intruder breaks into the office holding the Supervisor terminal.

The third threat relates to how PEBs are handled after they are returned from the polling place. If an attacker can infect one or more PEBs after the election and return them to circulation, they may be able to infect the Supervisor terminal during preparations for the next election.

The detailed process used to handle such PEBs in Sarasota County would have a major impact on how quickly a virus would spread. For instance, if Sarasota County workers ordinarily insert every PEB into the Supervisor terminal and invoke the Clear Supervisor PEB Vote Totals operation (from the Election Central Applications menu) after the election is over, then the risk of a virus is pronounced: an attacker would just have to introduce a single infected PEB to infect the Supervisor terminal. As another example, if Sarasota County workers ordinarily perform the Qualify PEB(s) operation (from the Supervisor terminal's Service menu) on every PEB before performing any other operation on that PEB, then the risk would be significantly reduced, since this operation clears the contents of the PEB before it has a chance to infect the Supervisor terminal.

3 Ineffective Defenses Against the Virus Threat

We examined many security features of the system to see if they would be able to ward off viruses. Our analysis is as follows:

Proprietary file formats are not an effective defense against viruses. The election definition file, as stored on the PEB, is in proprietary format. This format includes several version fields, magic constants, and other values that must be correct, or else the iVotronic machine will reject the election definition file as invalid. However, this will not prevent the spread of a virus. First, it would not be difficult for a sophisticated attacker with access to an iVotronic machine to reverse-engineer these constraints. Second, these constants and version fields are the same for every iVotronic machine across the country, so they cannot be treated as cryptographically secure secrets. Third, the part of the file where the virus would be inserted does not contain any of these magic constants or

version fields. Therefore, all an attacker would need to do is to take an existing election definition file and overwrite only the portion needed to hold the virus.

- Checksums cannot prevent viruses. The iVotronic election definition file format contains an unkeyed 8-bit checksum (the sum of the bytes modulo 256). This checksum is a reasonable way to detect random errors (e.g., hardware bit flips), but it is not an effective defense against malicious activity. This kind of unkeyed checksum does not prevent malicious tampering with the contents of the election definition file while in transit, because an attacker can arrange for his change to leave the checksum field valid, or can modify the election definition file and then overwrite the checksum with a correct checksum value. The PEB also uses a CRC16 checksum to check for random errors in stored data, but this will not detect or deter malicious attacks for the same reason.
- The Election Qualification Code (EQC) does not prevent viruses. The EQC is a 32-bit election-specific secret code that must be present on a PEB; otherwise, the PEB will be rejected by the iVotronic machine. (See Appendix D for more details.) Unfortunately, this does not prevent the spread of viruses. The EQC is the same for all iVotronic machines and all PEBs in a county, for any one election. As long as the virus takes care to leave the EQC field in the PEB undisturbed, the EQC will not limit virus propagation. Also, the EQC will not prevent virus introduction. The EQC is stored in the clear, not cryptographically protected on a PEB, so a malicious poll worker who gains unsupervised access to a PEB before the end of an election could overwrite the data on the PEB, leaving the EQC undisturbed, and re-introduce it into circulation before the end of the election.

We conclude that though these mechanisms may deter or complicate an attack, they would not pose an effective defense against viruses. This is not surprising, as security is not their designed purpose. It does not indicate a flaw in those mechanisms; it is well known that mechanisms intended to improve reliability and detect random errors generally are not sufficient to prevent malicious attack. We emphasize that we do not allege that the checksums or file formats or EQC mechanisms are flawed in any way, merely that they do not serve as an effective barrier to viruses.

Appendix C Safe and Unsafe Operations

We note that the mere act of inserting an infected PEB into an iVotronic will not infect the machine. Infection can spread only if one invokes vulnerable operations while a PEB is inserted. We analyzed nearly all available operations and reflect the results in the tables below. If performing an operation while an infected PEB is inserted can cause an iVotronic machine infection, then we call that operation *unsafe*. If performing that operation cannot infect the iVotronic even in the presence of an infected PEB, we call that operation *safe*. In some cases we were not able to identify from the code whether the operation is safe or not; in that case, we labeled it as *unknown*. We assume that the iVotronic machine is initially uninfected and ask only whether invoking that operation can cause the iVotronic to become newly infected.

We note that the results for Voter terminals (ordinary iVotronic machines, typically used for voting) differ for Supervisor terminals. Also, in some cases the results vary according to the machine mode. We also distinguish between operations that are ordinarily performed by poll workers under normal operation (e.g., opening or closing the polls), operations that can only be invoked via the Service menu (which is only accessible using a special password), and operations that can only be invoked via the Elections Central Administration menu (which requires yet another special password). The latter two menus are normally only used by county election workers or technicians; they are not normally accessible to poll workers or voters. Our analysis for the latter two categories are presented in separate tables.

Lastly, in some cases the results depend upon whether a Supervisor or Voter PEB is inserted into the machine. Because Sarasota County uses Pollworker-activated Mode, which only uses Supervisor PEBs, we did not analyze any of the code that was associated with Voter PEBs.

The “Qualify PEB(s)” operation (accessible via the Service menu) deserves special comment. This operation clears PEB contents and erases any data previously stored on it. Therefore, not only is this operation safe to perform on an infected PEB, it also cleans infected PEBs.

There is a subtlety associated with “Qualify PEB(s).” Suppose that we have a PEB whose firmware (software that operates infrared communications) has been replaced by the attacker. The “Qualify PEB(s)” operation sends commands to the PEB instructing the PEB to erase all of its data and leaves it up to the PEB to do so. If the PEB’s firmware has been replaced by malicious code, then the PEB might ignore these instructions to erase itself. In short, if the attacker has had the chance to physically tamper with the PEB, then we cannot rely upon “Qualify PEB(s)” to erase and disinfect the PEB. On the other hand, for PEBs that have not been under the physical control of the attacker and that contain only malicious data—not malicious firmware—“Qualify PEB(s)” will indeed erase all malicious data present. We did not analyze whether there was any way for a malicious iVotronic machine to attack or corrupt the firmware or code on the PEB, as this was outside the scope of our analysis.

We note that while these virus vulnerabilities are dangerous, the number of unsafe operations is a bit misleading relative to the actual threat that they pose. Many of these operations are rarely performed so are unlikely to infect a large number of PEBs. Moreover, while there are many unsafe operations, each may require a distinct exploit and it may not be possible to exploit more than one operation with a single PEB. It may also be true that preparing a PEB for exploit may corrupt it for normal operation, thus exposing it to detection or surreptitious removal from service.

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1 Ordinary operation, Voter terminal, Supervisor PEB

This describes the ordinary functions of a Voter terminal when used in Poll worker-activated mode. (Voter-activated mode was not analyzed.)

Operation (mode)	Safe/unsafe to perform with an untrusted PEB inserted.
Opening the polls (BLANK)	<i>unsafe</i>
Voting (OPEN)	safe
Closing the polls	<i>unknown</i>
Printing reports, modem vote results on a-closed terminal (CLOSED, EMERGENCYCLOSED)	<i>unsafe</i>
everything else	<i>unknown</i> (not analyzed)

2 Ordinary operation, Supervisor terminal, Supervisor PEB

This describes the ordinary functions of a Supervisor terminal when used with Supervisor PEBs. (Operation with Voter PEBs, i.e., Voter-activated mode, was not analyzed.)

Operation (mode)	Safe/unsafe to perform with an untrusted PEB inserted.
Prepare Voter PEB	not analyzed (only used for Voter-activated mode)
Opening the terminal for voting (BLANK, LOADED)	<i>unsafe</i>
Closing the terminal (OPEN)	<i>unsafe</i> if performed before the designated time for closing the polls
Printing a late zero tape (OPEN)	<i>unsafe</i>
Printing reports, modem vote results on a-closed terminal (CLOSED, EMERGENCYCLOSED)	<i>unsafe</i>
Unlocking a locked terminal (LOCKED)	safe
everything else	not analyzed

3 Service menu

The following comments apply to both Voter and Supervisor terminals, except where noted.

Operation	Safe/unsafe to perform on an untrusted PEB?
Clear And Test Terminal	safe
Set Time and Date	safe
Qualify PEB(s)	safe
Upload PEB to Compact Flash	<i>unknown</i>
Upload 3 Flash Memories to Compact Flash	safe
Test Printer	safe
Test Modem	<i>unsafe</i> in every mode
Upload Firmware	safe
Load System Files (Text Ballots)	safe
Enable Audio ballot on Unit	safe
Set Volume	safe
Force Coded Ballot Entry	safe
VOTE Button Configuration	safe
Enable Receipt Printing	safe
Select Progress Bar	safe
Logic And Accuracy Test	<i>unsafe</i> , if L&A testing is enabled (i.e., mode isn't OPEN or CLOSING and public count is zero), depending upon which option the user subsequently selects; see Logic and Accuracy Test menu below for details and full analysis
Enable Zoom Selection Screen	safe

3.1 Elections Central Applications menu, for Voter terminals

Operation	Safe/unsafe to perform on an untrusted PEB?
Upload Terminal Audit Data Serial	<i>Unknown</i>
Upload Terminal Audit Data to CompactFlash	<i>Unknown</i>
Print Report to Screen	<i>unsafe</i> if polls have not yet been opened (i.e., BLANK or OPENING mode); safe otherwise
Print Report To The Printer	<i>unsafe</i> if polls have not yet been opened (i.e., BLANK or OPENING mode); safe otherwise
Print Event Log	not analyzed
Print Vote Summary With Write-Ins	safe
Print Vote Summary Minus Write-Ins	safe

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3.2 Logic and Accuracy Tests menu

This menu provides several options for L&A testing. The following comments apply to both Voter and Supervisor terminals, except where noted otherwise.

Operation	Safe/unsafe to perform on an untrusted PEB?
Vote For One Test	<i>unsafe</i> in every mode
Multi Vote Test	<i>unsafe</i> in every mode
Vote Selected Ballot Test	<i>unsafe</i> in every mode
Print L And A Vote Totals to Screen	<i>unsafe</i> if polls have not yet been opened (i.e., BLANK or OPENING mode), for Voter terminals; <i>unsafe</i> in every mode, for Supervisor terminals; otherwise, <i>unknown</i>
Print L And A Vote Totals to Printer	<i>unsafe</i> if polls have not yet been opened (i.e., BLANK or OPENING mode), for Voter terminals; <i>unsafe</i> in every mode, for Supervisor terminals; otherwise, <i>unknown</i>
Transfer Results To PEB	<i>unsafe</i> if polls have not yet been opened (i.e., BLANK or OPENING mode), for Voter terminals; <i>unsafe</i> in every mode, for Supervisor terminals; otherwise, <i>unknown</i>
Clear And Test Terminal	safe

3.3 Elections Central Applications menu, for Supervisor terminals

Operation	Safe on an untrusted PEB?
Prepare PEB for Polling Location	Safe
Test Vote	Safe
Clear Supervisor PEB Vote Totals	<i>unsafe</i>
Prepare PEB for Serial Audit	Safe
Prepare PEB for CompactFlash Audit	Safe
Prepare PEB for Clear And Test	safe
Upload PEB Vote Results	<i>unsafe</i>
Print Report To Screen	<i>unsafe</i>
Print Report To The Printer	<i>unsafe</i>
Start Election Qualification Trail	safe
Color Option Numbers	safe
Print Event Log	safe
Print Vote Summary With Write-Ins	<i>unsafe</i>
Print Vote Summary Minus Write-Ins	<i>unsafe</i>

Appendix D Passwords

We analyzed the access control mechanisms in the iVotronic software to determine whether they ensure that only authorized users are able to invoke sensitive functions on the machines. The iVotronic uses password protection to control access to sensitive functions. Therefore, we analyzed all uses of passwords in the iVotronic.

We found several passwords, used for different purposes:

- The Service Menu password is used to control access to the Service Menu, which provides functions that would ordinarily only be needed in the county warehouse. The Service Menu is not normally used by poll workers.
- The ECA password controls access to the Elections Central Administration menu. This menu provides additional functionality over and beyond the Service menu. The ECA menu is only accessible from the Service menu; therefore, reaching the ECA menu requires knowledge of both the Service password and the ECA password.
- The Clear and Test password is used to control access to the clear and test operation. The clear and test operation erases all votes stored on the iVotronic machine and prepares it for use in the next election. Because this operation can irreversibly delete votes, this is a sensitive function that must be protected from unauthorized individuals.
- The Election Qualification password is used to prepare a machine for a new election.
- The Upload Firmware password is used to control the ability to upgrade the executable software resident on the iVotronic's internal flash memory. This is an extremely sensitive operation, because it allows replacing the iVotronic's software. If this were invoked by a malicious individual, they could use it to install malicious software on the iVotronic machine or to infect it with a virus. This operation is available as a menu option in the Service menu. Therefore, invoking this operation requires knowledge of both the Service password and the Upload Firmware password.
- The Override password is used to control certain exceptional conditions that should not normally arise. For instance, if the user tries to close the polls on an iVotronic machine before the official time when the election is due to end, the machine requires the user to enter an override password before proceeding.
- The modem password is used by the iVotronic machine to transmit results back to the Unity Data Acquisition Manager (DAM) system at the county headquarters. When the iVotronic machine connects to the Unity server over the telephone, it first sends the modem password over the phone. While we do not have access to the Unity server source code to check how the Unity server uses this password, it would be logical to presume that the Unity server checks that the proper password has been sent before allowing the connection to continue. The modem password does not need to be known by any human.

Typically, the override password would be the only password divulged to poll workers; the other passwords would not be revealed to poll workers, and would be told only to county election workers.

Next, we analyze password security strength to determine if they can be guessed by an ill-intentioned individual. The modem password can be set at the Unity server when the election is configured. It is included in the election definition file. It is listed in the clear in the election definition file found on every PEB and, eventually, on every iVotronic machine. It is the same for

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all iVotronic machines within a county. If it is not set, there is a default value hard-coded into the source code; this default is the same for all iVotronic machines across the nation. It is up to election officials to choose this password in a way that ensures it is unguessable, to change this password frequently (e.g., after every election), and to control who knows the password. Those are operational questions that are beyond the scope of a source code review.

Like the modem password, the override password can also be set at the Unity server when the election is configured. It too is included in the clear in the election definition file found on every PEB, and it is the same for all iVotronic machines within a county. It is selected and managed by election officials, so the management of this password is beyond the scope of a source code review.

Each of the other passwords mentioned above is fixed and hard-coded into the source code. They are the same for all iVotronic machines in the country, and likely to be known to every election official who manages elections on an iVotronic machine. They can never be changed, without changing the firmware on the iVotronic machine. This represents poor practice.

The Service Menu password, Clear and Test password, ECA password, and Upload Firmware password are three-letter case-insensitive passwords. Each one is chosen to be mnemonic and easy to remember. The problem is they are also likely to be fairly easy to guess. They follow a memorable pattern. Someone who knows one of these passwords can probably guess what the other ones are without too much difficulty. These passwords provide very little security.

The Election Qualification password is a five-letter case-insensitive password that is chosen to be easily memorable. It does not follow the same pattern as the other passwords.

The weakness of the Upload Firmware and Service passwords are of primary concern, because someone who knows those two passwords can replace the software on the iVotronic with malicious software that switches votes from one candidate to another, that turns valid votes into undervotes or deletes them entirely, that infects the machine with a virus, or that otherwise compromises the integrity of the election. These functions should be better protected.

Our judgment is that the password mechanisms on the iVotronic are poorly conceived and poorly implemented. The consequence is that the passwords by themselves do not do a good job of preventing unauthorized individuals from accessing critical system functions.

Finally, these passwords can all be bypassed using a special type of PEB, called a Factory Test PEB. When a PEB is inserted, the iVotronic machine queries the PEB to ask it what kind of PEB it is, and the PEB returns a single byte indicating what type of PEB it is. A Factory Test PEB identifies itself by returning a special single-byte value. This special value is hard-coded into the iVotronic code. Anyone who knows the special single-byte value, has access to a PEB and is able to program the PEB could construct a PEB that identifies itself as a Factory Test PEB. When a Factory Test PEB is present, all password checks are bypassed: in places where the user would normally need to enter a password, the password check is bypassed, the machine functions as though the correct password had been entered, and a log entry is appended to the event log as though the user entered the correct password. This undocumented backdoor poses a risk of unauthorized access to critical system functions, because it provides a way that a malicious individual could bypass the password checks by tampering with a PEB.

Greenberg Traurig

David T. Hickey
Tel. 703.749.1305
Fax 703.714.8375
HickeyD@gtlaw.com

April 6, 2007

VIA HAND DELIVERY

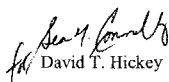
The Honorable Lorraine C. Miller
Clerk of the U.S. House of Representatives
U.S. Capitol, Room H154
Washington, D.C. 20515

Re: Congressman Vern Buchanan's Motion to Dismiss Election Contest

Dear Clerk Miller:

Enclosed please find a Supplemental Appendix in support of Congressman Vern Buchanan's Motion to Dismiss Election Contest previously filed with your office.

Sincerely,


David T. Hickey

SMC

Enclosure

Cc (w/enclosure):
VIA HAND DELIVERY

Congresswoman Juanita Millender-McDonald
Chair, Committee on House Administration
U.S. House of Representatives, 1309 Longworth House Office Building
Washington, D.C. 20515

111
23
11

ALBANY
AMSTERDAM
ATLANTA
BOCA RATON
BOSTON
BRUSSELS*
CHICAGO
DALLAS
DELAWARE
DENVER
FORT LAUDERDALE
HOUSTON
LAS VEGAS
LONDON*
LOS ANGELES
MIAMI
MILAN*
NEW JERSEY
NEW YORK
ORANGE COUNTY
ORLANDO
PHILADELPHIA
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The Honorable Lorraine C. Miller
April 6, 2007
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Congressman Vernon J. Ehlers
Ranking Member
Committee on House Administration
U.S. House of Representatives
1313 Longworth House Office Building
Washington, D.C. 20515

Congressman Charles A. Gonzalez
Chair, Task Force Investigating Possible Voter Rights Violations Regarding the
13th District of Florida Election
1309 Longworth House Office Building
Washington, D.C. 20515

IN THE

United States House of Representatives

CHRISTINE JENNINGS,

Contestant,

v.

VERN BUCHANAN,

Contestee.

**MEMORANDUM RESPONDING TO THE HONORABLE CHARLES A. GONZALEZ'S
APRIL 3, 2007 LETTER REGARDING THE INVESTIGATION OF THE ELECTION
FOR REPRESENTATIVE IN THE ONE HUNDRED TENTH CONGRESS
FROM FLORIDA'S THIRTEENTH CONGRESSIONAL DISTRICT**

**Contest Filed Under the Federal Contested Elections Act
on December 20, 2006**

KENDALL COFFEY
COFFEY BURLINGTON
2699 So. Bayshore Drive, PH1
Miami, FL 33133
(305) 858-2900

MARK HERRON
MESSER, CAPARELLO & SELF, P.A.
2618 Centennial Place
Tallahassee, Florida 32308
(850) 222-0720

DONALD B. VERRILLI, JR.
SAM HIRSCH
JESSICA RING AMUNSON
JENNER & BLOCK LLP
601 Thirteenth Street, N.W.
Washington, DC 20005
(202) 639-6000

April 13, 2007

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**EXPLANATION OF APPENDICES, EXHIBITS,
AND SUPPORTING MATERIALS**

Ms. Jennings has lodged with the Clerk and with the Panel six volumes of supporting materials with this Memorandum. These materials consist of the following:

SUPPORTING MATERIAL

CITATION FORM

Appendix to Emergency Petition for a Writ of Certiorari.

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This two-volume appendix was lodged with Florida's First District Court of Appeal on January 3, 2007, in connection with Ms. Jennings's appeal from the state trial court's order denying her requests for discovery. The appendix consists entirely of filings and transcripts from the trial-court proceedings. The table of contents to this two-volume appendix appears at Exhibit F to this Memorandum.

Supplemental Appendix.

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This two-volume appendix has been prepared for the Panel. It consists primarily of more recent filings in the First District Court of Appeal, as well as additional materials not originally included in the Appendix to Emergency Petition for a Writ of Certiorari. The table of contents to this two-volume appendix appears at Exhibit F to this Memorandum.

Documentation of Voting Machine Malfunction.

By Volume

This two-volume appendix has been prepared for the Panel. It consists of sworn affidavits submitted by voters to the Jennings campaign concerning the failure of Sarasota County's electronic voting machines, as well as a sampling of Election Day "Zone Tech Log Sheets" completed by Sarasota County technicians; Sarasota County Supervisor of Elections Incident Report Forms; Jennings campaign Incident Report Forms; e-mails from voters; and Poll Watcher Incident Report Forms. The table of contents to this two-volume appendix appears at Exhibit F to this

Memorandum.

In addition to these six volumes, Ms. Jennings has attached the following exhibits directly to this Memorandum.

Exhibits

Professor Dan S. Wallach and Professor David L. Dill, <i>Stones Unturned: Gaps in the Investigation of Sarasota's Disputed Congressional Election</i> (April 13, 2007)	Ex. A
Letter from ES&S to Florida Users of iVotronic Voting Machines (August 15, 2006)	Ex. B
Voter Affidavits	Ex. C-xx
List of Proposed Items for Panel Subpoenas	Ex. D
Proposed Protective Order and Nondisclosure Agreement	Ex. E
Tables of Contents to Appendices	Ex. F

**INTRODUCTION AND
SUMMARY OF ARGUMENT**

On November 7, 2006, Christine Jennings and Vern Buchanan competed in the general election to represent Florida's Thirteenth Congressional District in the House of Representatives. The official vote totals showed Mr. Buchanan prevailing by 369 votes, but nearly 18,000 ballots cast on the paperless electronic touchscreen voting system in Sarasota County, Ms. Jennings's home base, turned up blank for the congressional race.

Although Ms. Jennings filed an election contest within hours after the certified election results were announced, five months later her case is still languishing in the state courts. Not only have the courts failed to resolve the question of what caused these 18,000 undervotes; but to date, they have refused even to provide Ms. Jennings with access to the most fundamental evidence in the case — the hardware and software (including the source code) for Sarasota County's "iVotronic" electronic voting machines manufactured by Election Systems & Software, Inc. ("ES&S").

The task of getting to the bottom of what happened to these 18,000 electronic ballots is long overdue. And because the Florida state courts have proved themselves unwilling or unable to accomplish that task, the House must now take up its constitutional duty to investigate this matter and to reach a prompt,

but fair, conclusion about which candidate is entitled to sit as the Representative in the 110th Congress from Florida's Thirteenth District.

There are powerful reasons to believe that Christine Jennings is that candidate. Although the state-court litigation has gotten thoroughly bogged down with bogus claims of trade secrecy preventing access to the iVotronic hardware and software, it has accomplished one thing: The political-science and statistical experts for both sides have reached a consensus that the great bulk of Sarasota County's 18,000 undervotes were unintended and that, had those voters' intended votes been properly counted, Ms. Jennings would have beaten Mr. Buchanan by about 3,000 votes.

Those facts alone should resolve this case. After all, the whole point of an election contest — whether litigated in state court under state law or in the House of Representatives under the Federal Contested Elections Act (FCEA), 2 U.S.C. §§ 381-396 — is to effectuate the will of the electorate. *See Roush v. Chambers*, H.R. Rep. No. 87-513, at 22 (1961); *Boardman v. Esteve*, 323 So. 2d 259, 269 (Fla. 1975). As every expert to have studied this election to date has concluded, Christine Jennings, not Vern Buchanan, was the candidate preferred by the majority of the electorate. She therefore is entitled to the seat.

The nearly 700,000 residents of Florida's Thirteenth District — and especially the 18,000 Sarasota County voters whose congressional ballots were

recorded as blank — deserve to know why they are not being represented by the candidate of their choice. And the people of the entire Nation — forty percent of whom also vote on paperless electronic voting machines, many of which were built and programmed by the same manufacturer, ES&S — deserve to know how they can safeguard their right to vote and ensure that they never fall victim to a debacle like Sarasota County's. For our democratic system to function properly, Americans must have confidence that their votes will be cast as they were intended and will be counted as they were cast.

Properly investigating what went wrong with Sarasota County's touchscreen voting system inevitably will lead to one of two conclusions: either, as Ms. Jennings contends, the voting machines malfunctioned or, as Mr. Buchanan contends, the voters malfunctioned. Ms. Jennings alleges that votes cast for one candidate or the other were rejected by the machines and misrecorded as undervotes, probably due to a software "bug" not unlike the programming glitches people routinely encounter on their home or office computers. Mr. Buchanan alleges that voters, particularly Sarasota's senior citizens, never actually cast their intended congressional votes, as allegedly poor ballot design led them simply to overlook Ms. Jennings's and Mr. Buchanan's names on the electronic touchscreens, and then overlook the race again when they got to the summary

screen at the end of the ballot, and then miss the warning, in bright red letters, saying “No Selection Made.”

Promptly resolving this dispute is very much in the public interest. It is only a matter of time until similar or identical malfunctions in electronic voting machines corrupt yet another election. And the next botched election could determine control of a congressional chamber or even the presidency. Decisive resolution of this dispute will serve our Nation well.

Therefore, it is imperative that this Panel commence the investigation that the Florida state courts have stymied. Under the Constitution and the FCEA, the Panel has not only the authority, but also the responsibility to do so, and to do so expeditiously.

Part I of this Memorandum addresses the Panel’s question of whether potential state remedies give the Panel “compelling reasons . . . not to proceed with an investigation at this time.” The answer is a resounding No. The Florida courts have proved incapable of giving this case the expedited treatment it deserves, as an election contest for an office whose term is only 24 months long. Remarkably, when Chairwoman Millender-McDonald took the initiative, in the very first week that she chaired the Committee on House Administration, to send the Florida court a letter urging the full and speedy development of the factual record, the court took just six days to inform her that it would pay no attention to the Committee’s

request, refusing even to enter the Chairwoman's letter on the court's docket.

Ninety-nine days later, there is still no ruling from the court on the most basic issue of Ms. Jennings's access to the evidence needed to develop the factual record, and certainly no hope that such development will be speedy.

Furthermore, the defendants in the litigation have ceased to take their state-court discovery obligations seriously. That fact came into stark relief when it was recently revealed that three sets of defendants who repeatedly have vouched for the iVotronic system's "100% accuracy" — the state election officials, the county election supervisor, and the voting-machine manufacturer ES&S — all had concealed from Ms. Jennings and from the trial court contemporaneous documents proving that they were aware of serious problems with the electronic touchscreens back in August 2006, *three months before Election Day*. These documents fell squarely within Ms. Jennings's and her co-plaintiffs' discovery and public-records requests, yet none of these defendants produced them. The futility of resolving this election contest in Florida's state courts has become unmistakably clear.

Part II of this Memorandum addresses the Panel's question of whether it can "rely and if so, to what extent, on the tests conducted by Florida authorities and their experts." The answer once again is a resounding No. The Florida election authorities not only have concealed evidence, but have undertaken an extended public campaign to exonerate themselves, as they are of course the same officials

who previously certified the defective iVotronic system for use throughout Florida. Since the 2006 election, these officials have purported to conduct extensive “tests” absolving the iVotronic system, but those tests do not even begin to address the core problems that plagued Sarasota County’s voting machines. As explained in detail below, even before the results of the Jennings-Buchanan election were known — indeed, during the two-week early-voting period that preceded Election Day — reports of malfunctioning touchscreens began to pour in to the county election supervisor’s office and the Jennings and Buchanan campaigns. Even Mr. Buchanan’s wife reported difficulty voting for her husband, apparently pressing the “Vote” button three times before her vote would register. And these hundreds of eyewitness accounts of touchscreen malfunction are now bolstered by the expert statistical analyses of the election returns, on a machine-by-machine basis, which show that the undervote problem was worst on touchscreens that were set up and “calibrated” on days when the county election staff was busiest. Yet the State deliberately structured its post-election “testing” regime to avoid confronting these very issues. It allowed only 5 of the County’s more than 1,500 touchscreens to be tested in a “mock” election and did not allow *any* of the 1,500 touchscreens to be inspected by the special panel of computer scientists that the State assembled to “study” the undervote’s causes. The mismatch between what the State tested for and what the voters complained about is striking.

By contrast, a serious investigation of Sarasota County's iVotronic system would place both the hardware (a sizeable sample of the 1,500 machines) and the software (including both the system's generic "source code" and the "ballot definition files" that Sarasota County election staffers programmed for the November 2006 election) in the hands of computer scientists and engineers who work in tandem with one another, so that bugs involving the *interaction* between the hardware and the software would not easily escape detection. In outlining the contours of a proper investigation, Part II of this Memorandum also answers the Panel's question about the "need for [and nature of] additional testing."

Part III of the Memorandum then answers the Panel's question about what discovery should be authorized under the FCEA, setting forth a specific, step-by-step program by which this Panel could oversee a serious, comprehensive, and timely investigation. The proposed program would rely heavily on the two parties' experts, who would be asked to analyze the key evidence and produce reports (and counter-reports), under oath, all within 45 days. But the program also would give the Panel itself the means to assess those expert reports and, if necessary, to conduct its own specific, targeted investigations into particular aspects of the hardware and software. The first step in this program would be for the Panel to subpoena the relevant hardware, software (including source code), and documentation from the county and state election officials and the voting-machine

vendor, ES&S. As explained below, federal law and House election-contest precedents provide ample authority for such subpoenas.

Finally, Part IV of the Memorandum answers the Panel's question about how it can "protect the proprietary interests of the voting machine vendor/ manufacturer, should discovery entail an examination of trade secrets." It puts to rest the concerns about trade secrecy that have served, in the state-court litigation, primarily to shield the defendants from a full and fair investigation of what really happened in Sarasota County. As in state court, to expedite the process and to avoid lengthy battles over what is or is not a trade secret, Ms. Jennings is perfectly willing to have her experts sign nondisclosure agreements and abide by a protective order prohibiting them from disclosing any proprietary information. Violations of that protective order of course would be punishable as criminal contempt of Congress. Although the vendor's (and the vendor's codefendants') cries of "trade secrecy" ring hollow, Ms. Jennings's willingness to subject her experts to stringent protective measures should be more than enough to allay any legitimate concerns about the vendor being injured unfairly by its business competitors.

I. THERE IS NO COMPELLING REASON FOR THE PANEL TO POSTPONE ITS INVESTIGATION.

More than five months after the election for Representative in Congress from Florida's Thirteenth District, the district's voters are still unrepresented by

the candidate of their choice. And voters across the country are looking to Florida's Thirteenth District and wondering about the security of the votes they have cast on paperless electronic voting machines, such as the ES&S iVotronic system used in Sarasota County. Contestant Christine Jennings has used every tool at her disposal to resolve the issues before this Panel as quickly and fairly as possible in litigation filed in state court under Florida's election-contest statute. But she has been thwarted at every turn by the defendants in that action and by the Florida courts.

Given the tremendous public interest in ensuring that the voters of Florida's Thirteenth District are actually represented by the person they elected, the time has come for the House of Representatives to fulfill its constitutional and statutory responsibilities to investigate this matter. As then-Judge Scalia stated: "The pressing legislative demands of contemporary government have if anything increased the need for quick, decisive resolution of election controversies." *Morgan v. United States*, 801 F.2d 445, 450 (D.C. Cir. 1986). That is what is needed from this Panel.

A. The House Has the Constitutional and Statutory Responsibility to Proceed with This Investigation.

Under Article I, Section 5 of the United States Constitution, "[e]ach House shall be the Judge of the Elections, Returns and Qualifications of its own Members." U.S. Const. art. I, § 5. The House of Representatives therefore bears

the ultimate constitutional responsibility to judge the disputed election in Florida's Thirteenth Congressional District. The House generally employs the procedures outlined in the FCEA, 2 U.S.C. §§ 381-396, to discharge its constitutional responsibilities. Although the House has sometimes deferred to state-court proceedings, it has done so only when there is a compelling constitutional reason for deference, such as permitting a state recount to run its course, allowing a state criminal investigation to conclude, or waiting to see how a state court applies state election laws. Moreover, in cases in which the Committee has waited for state proceedings to conclude, they have concluded much more quickly than the proceeding at issue here.

1. The House Has the Constitutional Responsibility to Judge This Election.

When it comes to judging elections for Members of Congress, the Constitution provides not just that "each House 'may judge' these matters, but that each House 'shall be *the* Judge.'" *Morgan*, 801 F.2d at 447 (emphasis in the original). Under the House Rules, this responsibility to act as the judge is delegated in the first instance to the Committee on House Administration, which "pursuant to the House's constitutional authority under Article I, Section 5, clause 1, has broad power and authority to conduct an examination of an election, election procedures, and ballots in a contested election case, and to establish uniform standards and guidelines for the counting of ballots to determin[e] voters'

intentions. This authority is independent of . . . any proceedings under the FCEA.” Jack Maskell & L. Paige Whitaker, American Law Division, Congressional Research Service, *Procedures for Contested Election Cases in the House of Representatives*, at 14-15 (Jan. 4, 2007) [hereinafter “CRS Report on Contested Elections”]. Further, the Committee’s “constitutional responsibility to fairly judge the elections and returns of members is not limited by state law or state judicial decision.” *Anderson v. Rose*, H.R. Rep. No. 104-852, at 17 (1996).

Because the Constitution also vests responsibility in the States to prescribe the “Times, Places and Manner of holding Elections for Senators and Representatives,” U.S. Const. art. I, § 4, the Committee on House Administration has sometimes deferred undertaking an investigation into a federal contested election until after state proceedings have concluded. It has done so, however, only when constitutional deference to the State’s authority to regulate the “Times, Places and Manner of holding Elections” is appropriate. There are three main instances in which the Committee defers. **First**, the Committee typically waits until the State’s statutory procedures for canvassing and recounts have been concluded. *See, e.g., Carter v. LeCompte*, H.R. Rep. No. 85-1626, at 3-4 (1958) (taking jurisdiction of contest only after concluding there was no provision for a recount under state law). **Second**, the Committee might defer involvement when a state court is considering a novel application of its own state election laws to a

dispute. *See, e.g., Federal Contested Elections Act*, H.R. Rep. No. 91-569, at 2 (1969) (noting that “where the highest court of a State has interpreted the State law, the House has concluded that it should generally be governed by this interpretation but does not consider itself bound by such interpretation” (citations omitted)). **Third**, and consistent with principles of federalism, the Committee typically defers when the State is conducting a criminal investigation into violations of state election laws. *See, e.g., Wilson v. Leach*, H.R. Rep. No. 96-784, at 2 (1980) (delaying the task force’s consideration of a contest action “[i]n order not to interfere with the ongoing criminal proceedings” in which contestee was indicted by a grand jury for vote buying but eventually acquitted).

None of these reasons for constitutional deference is present here. **First**, all of Florida’s canvassing and recount procedures have been exhausted. In this case, recounting the iVotronic votes was a meaningless exercise because there was no voter-verifiable paper trail. Thus, all that could be “recounted” were electronic “ballot-image logs,” which reflect only what the computer program says the voter did, as the individual voters had no opportunity to verify those logs before leaving the polling place. Not surprisingly, “recounting” these machine logs reproduced precisely the enormous undervote caused by machine malfunction. **Second**, there are no issues regarding novel applications of state election law. Rather, the only issue currently pending before the state courts is Ms. Jennings’s access to the

ivotronic hardware and software she needs to prove her case. This does not require the Panel to interpret or apply any state election laws, nor even to apply state discovery laws or procedures, since the Panel has its own constitutional and statutory power to conduct discovery. *Third*, there is no criminal investigation underway and therefore no need to delay action on this account.

In sum, there is simply no compelling reason that the House should not take up its constitutional responsibility now. Even if the Florida courts were to determine tomorrow (consistent with every expert who has analyzed the election) that Ms. Jennings was the rightful winner of the election in Florida's Thirteenth District, the House would still have the constitutional responsibility to judge this election. "The House is not only 'Judge' but also final arbiter." *McIntyre v. Fallahay*, 766 F.2d 1078, 1081 (7th Cir. 1985). The House is perfectly able to carry out its constitutional responsibilities while a state proceeding is still ongoing, and it has done so in the past, as discussed below.

2. The FCEA Calls for Expedited Review of Election Contests.

As the legislative history of the Federal Contested Elections Act demonstrates, the FCEA was designed to "provide efficient, expeditious processing of the cases and a full opportunity for both parties to be heard." *Federal Contested Elections Act*, H.R. Rep. No. 91-569, at 3 (1969). The Act was passed with the recognition that "[e]lection contests affect both the integrity of the elected process

and of the legislative process” and it is therefore “essential that such contests be determined by the House under modern procedures.” *Id.* Significantly, the House will not “penalize contestants who cannot fully support their credible allegations because the proof of their claims is in the hands or minds of those who have committed the errors or violations at issue.” *Anderson v. Rose*, H.R. Rep. No. 104-852, at 6-7 (1996).

When a candidate files a notice of contest, “[j]urisdiction over contested elections is given to the Committee on House Administration by the House rules; and the responsibility for hearing contested election cases falls on the Committee on House Administration.” 2 LEWIS DESCHLER, *DESCHLER’S PRECEDENTS* ch. 9 § 5 (1976) [hereinafter “DESCHLER”]. The Committee may not escape this responsibility by delegating it to state courts or state fact-finding processes. It is entirely reasonable for a contestant to seek the materials she needs to prove her case by proceeding along parallel tracks in state and federal contest actions. *See, e.g., Young v. Mikva*, H.R. Rep. No. 95-244, at 9 (1977) (dissenting view of Rep. Stockman) (“The contestant should be allowed the opportunity to have access to the materials he needs to present his case *either through action of the courts or this committee pursuant to the Federal Contested Elections Act.*”) (emphasis added). And history shows that the Committee has not hesitated to move forward with a parallel investigation while state proceedings are ongoing.

For example, a contest action brought against Representative Mikva in the 95th Congress was in a similar procedural posture as Ms. Jennings's case now when the Committee took up the case. *See Young v. Mikva*, H.R. Rep. No. 95-244, at 3 (1977). The contestant in that case had filed in Illinois state court a contest action, which was dismissed by the trial court. The contestant then petitioned for the Supreme Court of Illinois to take the appeal from the trial court directly and to hear it on an expedited basis. The Supreme Court granted that motion and scheduled oral argument. However, nine days before the scheduled oral argument in the Illinois Supreme Court, the House Committee held its own hearing on the federal election contest. Just over a month later, the Committee resolved the federal contest. In its report, the Committee noted that “[a]s of this date, there has been no decision rendered by the Illinois Supreme Court.” *Id.* The fact that an appellate decision was pending did not keep the Committee from intervening and even resolving the case. Here, all that Ms. Jennings asks is that the Panel intervene to begin its investigation.

More recently, in a contest action brought against Representative Charlie Rose in the 104th Congress, the House Committee investigated and resolved the federal contest despite the fact that a state action was still pending in North Carolina. *See Anderson v. Rose*, H. R. Rep. No. 104-852, at 17 (1996) (finding that “neither the [State Bureau of Investigations] or the [State Board of Elections]

nor any state court has issued a formal review of the results of the election at this time”). In that case, the Committee found that because the contestant filed his state complaint a month before his federal notice of contest was submitted and the state investigation “was not completed until long after the deadline for filing a contest under the FCEA,” the contestant “properly chose to proceed along two tracks.” *Id.* Moreover, the Committee stated that while it is “generally willing to defer to state electoral rules and investigations,” it does not accord this deference when the state “fail[s] to take several important investigatory steps” because this “cast[s] serious doubt on the conclusiveness of the [State’s] report.” *Id.* at 12. Here, just as in *Anderson*, no deference is necessary to a state investigation that has failed to take so many important investigatory steps, as discussed *infra* in Part II.

When the Committee has waited for state proceedings to conclude before conducting its own hearings and investigations, those proceedings typically have moved much more quickly than the one at issue here. In *McCuen v. Dickey*, H.R. Rep. No. 103-109 (1993), the contestant filed a complaint in Arkansas state court three days after the canvass showed he had lost the November 1992 election by 8,266 votes. *See id.* at 3. He sought a protective order for the voting machines, which he alleged had malfunctioned during the election. The judge immediately entered a protective order, and followed this with an order three weeks later permitting the parties and their experts to open and inspect 35 voting machines.

After the contestant filed a notice of contest with the House, the state judge dismissed the complaint, claiming a lack of jurisdiction over a contested House election. All of this was completed by December 14, 1992 — within six weeks of the election. The House Committee then took up the federal contest action on February 4, 1993, and was able to use the findings from the parties' inspection of the voting machines to resolve the federal contest. *See id.*

As Chairwoman Millender-McDonald's January 4, 2007 letter to the Florida appellate court makes clear, "state proceedings ordinarily enhance the ability of the House to evaluate the merits of any pending election contest." SA-1. Unfortunately, that has not been the case here. Had the trial judge here done what the trial judge in *McCuen v. Dickey* did and permitted the parties to inspect the voting machines, the need for this election contest might have been avoided entirely. Instead, Ms. Jennings is coming to the Panel more than five months after the election with little to show, through no fault of her own, for the time she has spent in state court.

In the Florida state-court action, the defendants have maintained, and the trial judge has accepted, the premise that Ms. Jennings must prove her case of machine malfunction *before* being given access to the evidence she needs in order to prove her case of machine malfunction. To quote the Republican Members of the Committee on House Administration in the 95th Congress: "The only

adjective which aptly describes the process whereby a person is denied an opportunity to prove his case on the ground that he has not already done so is ‘bizarre.’” *Paul v. Gammage*, H.R. Rep. No. 95-243, at 2 (1977) (dissenting views). Ms. Jennings therefore requests that this Panel rectify the bizarre situation in which she finds herself.

B. The Panel Can Expeditiously Resolve the Discovery Issues that Have Held Up the State-Court Litigation.

Although Ms. Jennings has used every tool at her disposal to expedite the state-court litigation, she has been thwarted at every turn by the defendants and the Florida courts. On every possible occasion, Ms. Jennings has sought to advance the litigation as quickly as possible. And on each of those occasions, she has been met with nothing but recalcitrance and resistance. As the timeline below demonstrates, Ms. Jennings has made every attempt to resolve this matter expeditiously.

1. Chronology of State-Court Litigation.

- ***November 20, 2006: Ms. Jennings Files Her Complaint to Contest the Election.***¹ Under Florida law (Section 102.168, Florida Statutes), a candidate may not file an election-contest proceeding until after the election has been certified by the State. Ms. Jennings filed her complaint to contest the election in state court on November 20, 2006,

¹ Ms. Jennings’s complaint was later consolidated with a second election-contest action brought by a bipartisan group of eleven individual voters. *See* A-204.

within hours of the State's certification. She named the state and county election officials as defendants and further named Mr. Buchanan, as the statute required. As this Panel is well aware, the grounds for Ms. Jennings's complaint to contest the election was the massive and unexplainable undervote on Sarasota County's iVotronic machines manufactured by ES&S. *See* A-1.

- ***November 20, 2006: Ms. Jennings Files a Motion for Expedited Discovery.*** Along with her complaint, Ms. Jennings moved for expedited discovery and requested access to the ES&S hardware and software (including the source code) in the possession of the State and County. Ms. Jennings requested an immediate hearing on her motion, citing the contest statute, Section 102.168(7), Florida Statutes ("Any candidate, qualified elector, or taxpayer presenting such a contest to a circuit judge is entitled to an immediate hearing."). *See* A-122.
- ***November 21, 2006: The Trial Judge Denies Ms. Jennings's Motion for Expedited Discovery.*** Florida Circuit Court Judge William L. Gary held a brief hearing on November 21, 2006, at which he largely denied Ms. Jennings's request for expedited discovery and instead granted the state and county defendants 15 days to respond. *See* A-178. Judge Gary also stated that ES&S, the manufacturer of

the iVotronic system, must be given “an opportunity to be heard” before he would consider granting any request for access to the system’s source code (despite the fact that the source code was in the State’s possession). *See* A-174.

- ***November 30, 2006: Ms. Jennings Files an Amended Complaint to Contest the Election.*** In accordance with Judge Gary’s request to give ES&S an opportunity to be heard, Ms. Jennings amended her complaint on November 30, 2006, to add ES&S as a defendant. *See* A-206. That same day, she served ES&S with the discovery requests previously served on the state and county defendants. *See* A-114.
- ***November 30, 2006: Ms. Jennings Files a Motion to Compel Production of the Source Code from the State Defendants.*** Along with her amended complaint, Ms. Jennings filed a motion to compel production of the source code from the State, reiterating that although ES&S may have an interest in the litigation, the discovery she sought was in the State’s possession. *See* A-232. To expedite matters, Ms. Jennings took two unusual steps. First, she conceded for purposes of her motion that the materials she had requested were trade secrets, thereby relieving ES&S of the burden of proving that the broad range of materials for which it claimed the privilege were actually trade

secrets.² Second, she proposed that she and her experts would be bound by a stringent protective order that would accommodate any interest ES&S might have in protecting its proprietary information, while ensuring that Ms. Jennings could access the evidence she needed to prove the allegations of her complaint. *See* A-241.

- ***December 5-6, 2006. All Defendants Refuse to Permit Discovery.*** Predictably, the state and county defendants used the full 15 days granted them by Judge Gary before responding to Ms. Jennings's discovery requests. The state and county defendants objected to producing the vast majority of the materials requested by Ms. Jennings (including all of her requests for hardware, software, and source code), claiming that these were trade secrets belonging to ES&S. *See* A-254, 260. ES&S asked for an additional 15 days to respond to Ms. Jennings's requests for production and requested an evidentiary hearing on Ms. Jennings's need for discovery. *See* A-271.

² ES&S claimed the trade-secret privilege over virtually everything Ms. Jennings requested, including even manuals and training materials disseminated to poll workers. *See* A-486-87. It is highly unlikely that ES&S would actually be able to prove the applicability of the trade-secrets privilege to much of the material for which it claimed the privilege, were Ms. Jennings to put ES&S to the test.

- ***December 6, 2006: Ms. Jennings Files a Motion to Compel Production of Hardware and Software from the County.***

Anticipating that the defendants would refuse discovery on the basis of an alleged trade-secrets privilege, Ms. Jennings immediately filed a motion to compel access to the iVotronic hardware and software. *See* A-299. She also opposed ES&S's baseless request for an additional 15 days to respond to her discovery requests, pointing out that ES&S had received the same amount of time afforded all other defendants to respond. *See* A-352.
- ***December 7, 2006: Ms. Jennings Requests a Case-Management Conference and Priority Status.*** Given that a month had passed since the election and Judge Gary had shown little inclination to expedite proceedings despite the express provisions in the Florida election-contest statute calling for speed, Ms. Jennings moved for a case-management conference, requested the prompt entry of a scheduling order, and asked that the case be given priority status in accordance with the Florida Rules of Judicial Administration. Ms. Jennings proposed an expedited schedule whereby responses to all discovery requests would be due within seven days of the request, fact discovery would close by January 5, 2007, expert depositions would be taken

between January 8 and 12, 2007, and trial would commence by late January 2007. Ms. Jennings conferred with the defendants, who agreed with some aspects of the schedule, but proposed a trial date in mid-February 2007. *See* A-403.

- ***December 8, 2006: The Trial Judge Denies Ms. Jennings's Requests.*** In response to Ms. Jennings's request for a case-management conference, priority status, and entry of a scheduling order, Judge Gary simply stated "we don't do that." A-417. As of this date, the trial court has never held a case-management conference, never entered a scheduling order, and never considered whether this case should be given priority status under the Florida Rules of Judicial Administration.
- ***December 8, 2006: The Trial Judge Grants ES&S's Requests.*** Judge Gary granted ES&S's request for an evidentiary hearing to determine Ms. Jennings's need for the hardware, software, and source code that she had requested through discovery. *See* A-484. ES&S joined the other defendants in asserting that these materials were protected by the Florida trade-secrets privilege, Section 90.506,

Florida Statutes.³ See A-486. ES&S correctly stated that the test for determining whether trade secrets should be disclosed is “whether the information is sufficiently relevant and necessary to the Plaintiff’s case to outweigh the harm disclosure would cause to the person from whom he is seeking the information.” A-490.

- ***December 19-20, 2006: The Trial Judge Holds an Evidentiary Hearing.*** On December 19 and 20, the trial court held an evidentiary hearing to consider the applicability of Florida’s trade-secrets privilege to the iVotronic system materials requested by Ms. Jennings. Ms. Jennings presented one expert on undervotes and statistical analysis of election data — Professor Charles Stewart III, the chair of the Political Science Department at the Massachusetts Institute of Technology (MIT) — and one expert on electronic voting technology — Professor Dan S. Wallach of the Computer Science Department at Rice University. Neither Mr. Buchanan nor the governmental defendants who were the targets of Ms. Jennings’s motion to compel presented any witnesses. ES&S presented one expert on elections and

³ Section 90.506, Florida Statutes, states: “A person has a privilege to refuse to disclose, and to prevent other persons from disclosing, a trade secret owned by that person if the allowance of the privilege will not conceal fraud or otherwise work injustice. When the court directs disclosure, it shall take the protective measures that the interests of the holder of the privilege, the interests of the parties, and the furtherance of justice require. The privilege may be claimed by the person or the person’s agent or employee.”

voting patterns — Professor Michael C. Herron of the Government Department at Dartmouth College.

Professor Stewart testified that the undervote rate in Sarasota County was not normal, that Ms. Jennings would have won the election had the undervote rate been normal, and that machine malfunction had likely altered the outcome of this election. *See* A-531-41. Professor Wallach testified that machine malfunction was the likely cause of the undervote rate and described an investigation of the hardware and software that would be necessary to prove or disprove that machine malfunction was the cause of the undervote. *See* A-558-64. Professor Herron testified — without ever having examined the hardware or software, and with no computer expertise whatsoever — that poor ballot design was the sole cause of the elevated undervote. *See* A-620-21; 630-31. Professor Herron agreed with Professor Stewart that Ms. Jennings would have won the election had the undervote rate been normal. *See* A-623; *see also* Michael C. Herron *et al.*, Ballot Formats, Touchscreens, and Undervotes, at i, *available at* <http://www.dartmouth.edu/~herron/cd13.pdf> (accessed Apr. 12, 2007) (concluding that “there is essentially a 100 percent chance the 13th

Congressional District election result would have been reversed in the absence of the large Sarasota County undervote”).

ES&S also introduced into evidence a Parallel Test Summary Report, which the state defendants produced on the eve of the evidentiary hearing. *See* A-652. The report described a test of ten iVotronic machines conducted by the State following the election (five of the machines had not even been used during the election). The report concluded that the “parallel tests were successful in demonstrating 100% accuracy in recording the vote selections as indicated on the review screens.” A-659. The report was introduced over Ms. Jennings’s objection that it was hearsay and that she should be allowed the opportunity to cross-examine its author.

- ***December 29, 2006: The Trial Judge Denies Ms. Jennings’s Discovery Requests.*** On December 29, 2006, Judge Gary issued an order denying Ms. Jennings’s requests for access to the hardware, software, and source code for the iVotronic system. The court stated that granting Ms. Jennings’s motions to compel “would require [it] to find that it is reasonably necessary for the Plaintiffs to have access to the trade secrets of [ES&S] based on nothing more than conjecture

and would result in destroying or at least gutting the protections afforded those who own the trade secrets.” A-808.

- **January 3, 2007: Ms. Jennings Files an Emergency Petition for Certiorari and a Motion to Expedite.** Working through the holiday weekend, Ms. Jennings filed an immediate appeal of the trial court’s ruling via an emergency petition for a writ of certiorari in Florida’s First District Court of Appeal. *See* SA-6. Ms. Jennings also filed a motion to expedite, asking the appellate court to accelerate its consideration of the emergency petition. *See* SA-67. On January 4, 2007, the appellate court ordered the defendants to show cause within 20 days why Ms. Jennings’s petition should not be granted. *See* SA-75.
- **January 5, 2007: ES&S Files Motion to Strike.** Despite the fact that the appellate court had already ordered ES&S to show cause why Ms. Jennings’s petition should not be granted, ES&S filed a frivolous motion to strike her petition on January 5, 2007. *See* SA-76. ES&S filed this motion knowing that it would toll the clock for filing its response to Ms. Jennings’s petition.

- ***January 9, 2007: The Appellate Court Rejects Chairwoman Millender-McDonald's Correspondence.*** On January 4, 2007, Chairwoman Millender-McDonald sent a letter to the appellate court expressing concern that the “lower court had declined to order the requested access to the hardware and software (including the source code) needed to test [Ms. Jennings’s] central claim [of] voting machine malfunction” because “state proceedings ordinarily enhance the ability of the House to evaluate the merits of any pending election contest.” SA-1-2. The Chairwoman noted that “Florida law will facilitate the evaluation of the election contest pending before the House to the extent that it provides access to relevant and critical evidence.” *Id.* On January 10, 2007, the Clerk notified the Chairwoman and the parties that the Chairwoman’s correspondence would not be docketed or considered by the panel of judges deciding the case. *See* SA-90.
- ***January 24, 2007: The Appellate Court Grants Ms. Jennings’s Motion to Expedite and Denies ES&S’s Motion to Strike.*** Almost three weeks later, the appellate court granted Ms. Jennings’s motion to expedite the petition and denied ES&S’s frivolous motion to strike it.

This finally restarted the original 20-day clock for the defendants to respond to Ms. Jennings's petition. *See* SA-92.

- ***February 20, 2007: The Appellate Briefing Is Finally Completed.***
Predictably, ES&S waited until the eleventh hour to file its response to Ms. Jennings's petition for a writ of certiorari. *See* SA-93.
Although the appellate court had granted Ms. Jennings a full 15 days to file reply briefs to each of the defendants' responses (*see* SA-93, 153, 191), Ms. Jennings filed just one brief and did so nearly a week ahead of the deadline. *See* SA-211.
- ***Awaiting Ruling.*** Despite the fact that the appellate court granted Ms. Jennings's motion to expedite consideration of the petition, and despite the fact that the petition has been fully briefed by all parties for nearly two months, the court has not yet issued any ruling nor indicated any date by which such a ruling may be forthcoming.

2. Withholding of Evidence.

As the foregoing chronology demonstrates, the defendants have repeatedly attempted to stall the litigation process, presumably hoping that the longer this proceeding drags on, the less willing Ms. Jennings will be to pursue it. The defendants' stonewalling is not limited to procedural maneuvers, however. They

have also withheld substantive evidence from Ms. Jennings that casts serious doubt on the claims they made before the trial court that the iVotronic machines “performed as they were designed and accurately recorded the votes which were input into them.” A-763.

Just recently, Ms. Jennings learned of a letter sent by ES&S in August 2006 to Florida election officials, including Sarasota County’s Supervisor of Elections Kathy Dent and State Chief of the Bureau of Voting Systems Certification David Drury, that warned of a flaw in the software of the iVotronic machines and stated that ES&S would seek certification from the State to fix the problem before the November 2006 general election. That letter is attached hereto as Exhibit B. The letter noted that iVotronics of the same make and model used in Sarasota County were experiencing a “delayed response time” as a result of a “smoothing filter” that had been added to the software. *Id.* ES&S admitted that the malfunction “may vary from terminal to terminal and also may not occur every single time a terminal is used.” *Id.* The letter recommended that “to avoid any potential issues at the polls” during the primary election, the County should train its poll workers and inform its voters to “expect this slightly delayed response time for their highlighted selections.” *Id.*

When this letter first came to light, Supervisor Dent reacted by claiming that it “wasn’t any big deal.” *See* SA-238. And indeed, her actions demonstrate that

she treated it as no big deal. She completely ignored ES&S's warning that she should train poll workers and educate voters to expect a delayed response time. And she failed to follow up with ES&S about the problem despite ES&S's promise that it would have a fix certified in time for the November 2006 election. *See Ex. B.* Apparently neither Supervisor Dent nor the State questioned ES&S about the status of the problem despite ES&S's promise to keep them posted on its developments as it worked through the necessary phases of implementing the fix. *See id.* Supervisor Dent's reaction to the letter is in stark contrast with the reaction of then Pasco County Supervisor of Elections and now Secretary of State Kurt Browning, who identified the defective iVotronic machines and refused to use them on Election Day. *See SA-238.* As of this date, the iVotronics in Sarasota County have never been fixed.

The letter was indeed a "big deal," contrary to Supervisor Dent's contention, and an equally "big deal" was that this issue never came to light despite Ms. Jennings's and her co-plaintiffs' repeated public-records and discovery requests to the State, County, and ES&S for information regarding any potential malfunction with the iVotronic system. For example, on November 8, 2006, Ms. Jennings sent a public-records request to Supervisor Dent asking for "[a]ny and all documents including, but not limited to, correspondence, e-mails, notes, reports, memoranda, and/or all other similar documents received in your office and/or generated by or

within your office (including, but not limited to, internal documents), from January 1, 2006 to the date of production, evidencing complaints or concerns about actual or alleged problems with the electronic voting equipment and its components.” *See* SA-242. Supervisor Dent produced some materials in response to this request, but neither the ES&S letter nor any reference to it was included in these materials. Also, Ms. Jennings’s co-plaintiffs requested from ES&S reports of any voting-system malfunction and all correspondence between or among ES&S and election officials regarding any reported voting-system malfunction. *See* SA-248-49. ES&S responded by stating that it had “no documents showing that the voting system did not record or may not have accurately recorded a voter’s vote, that the voting system exhibited anomalous or unexpected behavior, or that the voting system failed to properly perform any function for which it was certified under state or federal law.” *See* SA-258.

As is now evident, the claims of the State, County, and ES&S that the machines worked perfectly and that there was no evidence of any malfunction were inaccurate and untrue. These parties were aware of a malfunction and chose not to share that information with Ms. Jennings or her co-plaintiffs. Supervisor Dent now claims that the information was not provided because she had “misfiled” ES&S’s letter. *See* SA-261. The State first claimed that it had received the letter, then later reversed itself. *See* SA-265, 267. And ES&S claimed that Ms.

Jennings's discovery requests had not been specific enough for it to provide the letter.

All of these parties touted the supposed "100% accuracy" of the iVotronics by citing the parallel-test report in the state-court action despite knowing that there was a malfunction with the iVotronics that may not have manifested in parallel testing given that ES&S described the malfunction as varying from terminal-to-terminal and occurring only intermittently. *See* Ex. B. Based on this withholding of evidence, the trial court has been asked to reconsider its order denying the plaintiffs access to the hardware and software necessary to test for the malfunction. *See* SA-269. Today, the trial judge issued an order summarily denying that motion, even though the defendants had not even bothered to respond to it.

C. The Voters Are the Ultimate Party in Interest.

The right of voters to cast their votes effectively has long been "rank[ed] among our most precious freedoms." *Williams v. Rhodes*, 393 U.S. 23, 30 (1968). As the Supreme Court has explained: "No right is more precious in a free country than that of having a voice in the election of those who make the laws under which, as good citizens, we must live. Other rights, even the most basic, are illusory if the right to vote is undermined." *Wesberry v. Sanders*, 376 U.S. 1, 17 (1964). The Florida Supreme Court is in accord, noting that there is "no doubt that the purpose of the statutes permitting election contests is to prevent the thwarting of the will of

the electors either by fraud or by common mistakes honestly made.” *Barber v. Moody*, 229 So. 2d 284, 286 (Fla. 1969). Yet five months after the election, not only hasn’t this case been resolved to the satisfaction of the voters, the parties are still at a standstill as to the threshold issue of access to the evidence necessary to determine how the will of the voters was thwarted.

Even if the Florida intermediate appellate court were to issue a ruling tomorrow granting Ms. Jennings access to the evidence she seeks, the state-court action would still be months away from resolution. The intermediate appellate court’s ruling would no doubt be appealed by the defendants to the Florida Supreme Court, which then would remand the case back down the ladder until it eventually returned to the trial court. And further proceedings in the trial court will be fraught with the same difficulties Ms. Jennings has encountered thus far — a trial judge who is unwilling to hold a case-management conference, issue a scheduling order, or accord the case priority status, and defendants who appear hell-bent on preventing Ms. Jennings from accessing the hardware and software she seeks, even by withholding evidence. Given these issues, there is no guarantee whatsoever that this state-court proceeding would be resolved before the term of office expires for the 110th Congress. That certainly is not in keeping with the Committee’s call for “efficient, expeditious processing of [election contest] cases and a full opportunity for both parties to be heard.” *Federal Contested Elections*

Act, H.R. Rep. No. 91-569, at 3 (1969). The voters of Florida's Thirteenth District deserve answers to their questions, and this Panel is in the position to provide those answers. It should begin the process now.

II. THE PANEL CANNOT RELY ON THE TESTS CONDUCTED BY THE STATE AND SHOULD ALLOW MS. JENNINGS AND MR. BUCHANAN TO PERFORM THEIR OWN TESTS.

Following the massive undervote in the congressional race, the State of Florida announced that it would be conducting an audit of Sarasota County's voting system and attendant procedures. This audit had three parts: (1) a "parallel test" conducted on ten iVotronic machines on November 28 and December 1, 2006; (2) a "software review and security analysis" of the ES&S iVotronic software; and (3) an examination of Sarasota County's election conduct, procedures, and results. All three parts of the audit were conducted or overseen by the State Division of Elections. Ms. Jennings's experts were permitted to observe, though not to participate in, the first part of the audit — the parallel tests. Ms. Jennings and her experts were excluded from the second and third parts of the audit.

A. The State's Self-Interest Renders All of Its Testing Suspect.

It is critical to note that all aspects of the audit were conducted or overseen by a self-interested actor that is a defendant in the state-court litigation — the Florida Division of Elections. Florida does not rely on federal standards to certify

its voting systems. Rather, Florida has its own voting-system standards and the Florida Division of Elections is responsible for certifying that voting equipment used in every Florida county complies with these standards. Thus, the very same people who originally certified that the equipment in Sarasota County met the required standards of achieving the “maximum degree of correctness, impartiality, and efficiency . . . [in] counting, tabulating, and recording votes” (Section 101.015(3), Florida Statutes), were charged with investigating whether the equipment had malfunctioned.

This is akin to permitting a defendant to be the judge in his own trial. For the reasons set forth below, each aspect of the audit conducted by the State was fatally flawed.

1. The Parallel Tests Were Flawed in Both Design and Execution.

As noted above in Part I of this Memorandum, when ruling against Ms. Jennings’s discovery requests, the Florida court placed great emphasis on the so-called “parallel testing”⁴ conducted by the state defendants. The parallel-test report was entered into evidence over Ms. Jennings’s hearsay objection and without giving Ms. Jennings the opportunity to cross-examine its author. Had Ms. Jennings been given that opportunity, she could have exposed the numerous flaws

⁴ A true “parallel test” occurs on Election Day using voting machines chosen at random that would otherwise have been used for the election. A better name for the testing conducted by the State is a “mock election.”

in the testing that render the report's sweeping conclusions about the accuracy of the iVotronic system utterly unjustified.

Most importantly, the parallel tests were designed with the specific purpose of *not* recreating the undervote. As described by the State's report: "The parallel tests focused on the iVotronic touchscreen's ability to accurately record a voter's selections *as presented to the voter on the touchscreen ballot review pages.*" A-653 (emphasis added). Thus, the testing was meant only to ensure that the votes on the final ballot-review pages were the votes ultimately cast and counted. The State effectively redefined "accuracy" as a machine's ability to make a correct electronic copy of a review screen. Machines were deemed "accurate" when those machines displayed the wrong information on the review screen, so long as the machines faithfully copied the incorrect review screen to the machine's memory.

Moreover, this definition of "accuracy" ignores the most pervasive problem reported by hundreds of voters — that they voted for Ms. Jennings, but their votes did not appear on the ballot review page and they therefore had to go back to the page with the congressional race and attempt to record their votes again. *See generally* "Documentation of Voting Machine Malfunction Appendix." These voters generally reported that the second or third time around, the ballot review screen showed their votes for Ms. Jennings and they therefore cast their votes. *See id.* But likely thousands of people did not catch the malfunction of the iVotronic

system that resulted in a failure to record their intended votes on the review screen the first time. The State's report blatantly admitted that its tests were not designed to address the problems these voters reported in making their vote selections. As the State put it: "Although a number of these voters indicated a problem with their initial and final selection for the 13th Congressional District race, the primary focus of the parallel tests is the review screens." A-658; *see also* A-659 ("[T]he process of selecting one's choices is not a matter of the voting device's accuracy. Accuracy is relevant to the information presented to the voter on the review screens and ultimately captured as a ballot cast."). In other words, tough luck to those voters whose machines malfunctioned and caused their votes not to show up on the review screen.

While this major testing design flaw is enough to call into question the entirety of the State's parallel test, there were also several other defects with the way the testing was conducted, as outlined below.

- ***Unrepresentative "Mock Voters."*** The State used only Division of Elections employees as "mock voters" during the parallel tests. This was unacceptable for at least three reasons. ***First***, each of the testers had a conflict of interest as each was employed by, and accountable to, the very state agency that certified a defective voting system. ***Second***, the testers were hyper-sensitized to the high-profile issue of

touchscreen malfunction and therefore consciously or unconsciously inclined to try to cast their test ballots very, very carefully. *Third*, the State did not try to ensure demographic balance, or representativeness, among the testers. Especially egregious was the State's failure to account for the high percentage of retirees in Sarasota County when choosing mock voters from among those employees who volunteered.

- ***Misplacement of the Touchscreens.*** On Election Day (and during early voting), the touchscreens in Sarasota County were horizontal. But during the parallel testing, they were vertical. Altering the screen angle is potentially a very significant alteration, as it largely, if not entirely, prevents a mock voter from accidentally touching two parts of the screen simultaneously and greatly reduces the chance that the voter touches the screen at a point slightly off-center from his or her intended target.
- ***Unnatural "Vote Patterns."*** The test scripts were derived from the actual votes cast on the machines, but used highly unnatural vote patterns that a real voter was extremely unlikely to have followed. Moreover, the mock voters made no attempt to execute vote patterns at varying speeds. As anyone who regularly uses a computer knows, the chance of a computer "freezing" or otherwise malfunctioning

often is related to the speed at which one uses the keyboard and mouse. The mock voters uniformly moved slowly and methodically through each screen. (And on the occasions when one of them did move faster, a video taken of the testing shows that her selections were not being properly registered, forcing her to go back and press the screen again repeatedly.)

- ***Too Few Machines.*** The State's parallel testing simply did not use enough machines to provide a reliable sample. It tested only five machines actually deployed on Election Day, and only four of those were tested using actual voter scripts derived from the machine's own ballot-image logs. These four machines combined recorded only 157 votes for Ms. Jennings or Mr. Buchanan. They thus represent ***less than one-sixth of one percent*** of all Jennings and Buchanan votes recorded by Sarasota County's iVotronic system. That is far too small a sample size for a thorough and exacting audit.
- ***No Touchscreen Calibration Testing.*** The State made no attempt to test touchscreen calibrations, despite numerous reports from voters that the touchscreens were not accepting their votes or required great pressure or an extended touch to record votes. Calibration issues are not even mentioned in the State's report.

Ms. Jennings noted many of these issues after her experts were permitted to observe the first day of parallel testing. She brought them to the State's attention in the hope that the State would correct these issues before the second day of parallel testing, which took place half a week later. *See* SA-352. Unfortunately, the State ignored the vast majority of Ms. Jennings's suggestions. *See* A-659-60.

In sum, the Parallel Test Summary Report relied upon by the Florida trial judge to deny Ms. Jennings's discovery requests cannot be relied upon by this Panel for at least three reasons. **First**, the testing was designed only to ensure that a voting machine accurately captured the information on the ballot review screen, ignoring that hundreds of voters (including even Mr. Buchanan's wife, *see* SA-368) reported problems getting their votes for the congressional race to register and show up on the review screen. **Second**, the testing used a statistically insignificant number of machines and was conducted in a manner that did not faithfully replicate actual Election Day conditions and voters. **Third**, the testing was conducted by the very people who had a vested interest in proving that the machines they certified for use in Sarasota County performed "accurately." For all these reasons, the Panel and both parties' experts must conduct their own investigation into these issues and not rely on the State's flawed conclusions.

2. The Software Review and Security Analysis Was Woefully Inadequate.

The State also commissioned a group of academic computer scientists through Florida State University to analyze the source code to the ES&S iVotronic machines. *See* SA-369. The ostensible purpose of the analysis was to determine whether a software bug caused the undervote in Sarasota. Unfortunately, the analysis was woefully inadequate as the team commissioned by the State failed to perform the most basic test of all — a “dynamic” test that looked at how different parts of the source code and software manifested themselves on the iVotronic touchscreen machines actually used in Sarasota County. Rather, these academics performed a simple “static” analysis — reading the source code without ever seeing it executed on one of Sarasota County’s iVotronic machines. *See* SA-371 (noting that the academics were “commissioned to conduct a static software code review”).

Dr. Edward Felten, a renowned Professor of Computer Science at Princeton University, declined the State’s invitation to participate in this static study when “it became clear [to him] that the study they wanted to commission was far from the complete, independent study [he] had initially thought they wanted.” SA-436. As Felten noted: “The biggest limitation on the study is that [the State] is withholding information and resources needed for a complete study. Most notably, they are not providing access to voting machines. You don’t have to be a rocket scientist to

realize that if you want to understand the behavior of voting machines, it helps to have a voting machine to examine.” *Id.*

Even with just a static analysis, however, the State’s experts found numerous serious problems with the iVotronic system. But the general public will never know the details of these problems as they were described in secret appendices released only to the State and ES&S. *See* SA-372. The State claims that none of these problems caused the undervote in the congressional race, but they provide no answer as to what did cause the undervote. The State simply requests that Ms. Jennings and the voters take the State’s word for it that the “iVotronic firmware, including faults that we[re] identified, did not cause or contribute to the CD13 undervote.” SA-371. It is difficult, however, to accept the State’s word for it when the testing and report ignored or glossed over some of the most serious issues, as described below.

- ***Smoothing Filter.*** Florida State University Professor Alec Yasinsac, who led the team of academics studying the source code, recently stated that his “team looked into the slow response time after seeing a copy” of ES&S’s August 15, 2006 letter regarding the smoothing-filter issue. SA-239. But the smoothing-filter issue was not even mentioned until page 48 of the State’s report and was described only as an “allegation” that had been “floated on Internet news groups.”

SA-416. The report never mentioned that ES&S had alerted Sarasota County to the smoothing-filter problem, nor that ES&S had promised it would have a fix to this problem by the November election, nor that ES&S had never delivered the fix. Indeed, the entire issue of smoothing filters and slow response times was disposed of in just four sentences with no explanation whatsoever of whether the team examined this issue in any detail or studied the source code for the smoothing filter. The report simply concluded that the filter could not have caused the undervote because the “touch screen filter does not act differently on different screens.” *Id.* That conclusion blatantly ignores ES&S’s own admission that the “delayed response to touch may vary from terminal to terminal and may not occur every single time a terminal is used.” Ex. B. It is quite likely that the smoothing filter caused voters’ genuine presses on the screen to be ignored, yet the report never even addressed this issue.

- ***Touchscreen Calibration Errors.*** As anyone who has ever used an ATM knows, calibration errors are a common problem with touchscreen machines. Yet the state report dismissed the possibility of calibration errors without even studying it. Instead, the State claimed that if this were the problem, it would have manifested itself

in the parallel tests. *See* SA-416. As discussed above, the parallel tests used only five Election Day machines, and calibration errors could not have been thoroughly analyzed from such a small sample. The State's failure to examine calibration issues is especially suspect given the strong statistical correlation MIT political-science Professor Charles Stewart found between a machine's undervote rate and the date that a machine was set up for the election. *See* Section II.B.2 *infra*. This set-up procedure typically included calibrating the touchscreens. Nowhere in its report did the State address Professor Stewart's findings.

- ***Source-Code Matching.*** The team of academics never performed any tests to determine whether the source code it was examining corresponded to the object code actually running on the iVotronic system used in Sarasota County. Again, because the reviewers were prohibited from performing any "dynamic" testing on the machines actually used by voters in Sarasota County, they simply assumed that there was no error in translating the source code from its original, human-readable form to the machine-readable software actually running in Sarasota County.

These and other errors in the State's testing are more fully explored in a paper just released by Dan S. Wallach, Professor of Computer Science at Rice University, and David L. Dill, Professor of Computer Science at Stanford University. As Professors Wallach and Dill conclude: "Press reports and summaries of the State's findings have created a public perception that the investigation was thorough and that the voting machines have been exonerated of contributing to the undervote. Based on our evaluation of the investigation, this perception is not justified." Their report is appended hereto as Exhibit A.

Just as the Parallel Test Summary Report ignored the problems reported by hundreds of voters in getting their votes to register, so too the report by the Florida State University-commissioned computer scientists simply glossed over the most likely cause of the undervote — the interaction among the software, the hardware, and the voter. In particular, by performing only a "static" analysis of reading the source code and never even looking at the machines actually used in Sarasota County (much less performing a "dynamic" analysis by running tests on them), the State left a gaping hole in its supposed examination of the undervote in Sarasota County. It is no wonder that one of the country's most respected computer scientists refused to participate in this whitewash. For the reasons outlined here, as well as the reasons explored more fully in the report of Professors Wallach and Dill appended hereto as Exhibit A, this Panel cannot rely on the software review

and security analysis performed by the Florida State University-commissioned computer scientists.

3. The State's Examination of Sarasota County's Procedures Omits Major Issues.

The third part of the State's audit report was an examination of Sarasota County's election conduct, procedures, and results. *See* SA-437. There is little of note in what is included in the report. What is notable is what is missing. For example, the report discussed the State's examination of the iVotronic system in Sarasota County to ensure that all the equipment used by the County had been certified by the State. *See* SA-442-44. Yet, the report conveniently failed to mention that ES&S was seeking state-level certification as early as August 15, 2006 for a software "update" to fix the issue of slow response times due to the smoothing filter. Ex. B. The report also included a brief mention of the 455 incident reports received by Sarasota County Supervisor of Elections Kathy Dent regarding problems with the iVotronic machines. *See* SA-453. But the report conveniently failed to mention that Supervisor Dent was well aware of these problems with the iVotronic machines during the early-voting period and did nothing to fix them. *See* SA-480. In fact, Ms. Jennings wrote to Supervisor Dent on November 2, 2006, regarding the many reports she had received from voters who encountered difficulties with the iVotronics during early voting. Ms. Jennings presciently expressed her concern that "if we are already receiving this level of

complaints during the period of early voting from a majority of the designated polling places, there is the prospect that these issues will only be magnified on Election Day.” SA-484.

Chronicling the many omissions in the report would take more time and space than we have here. Overall, the report is emblematic of the State’s entire approach to the study of the undervote — blame the voters, not the machines. The report ends with a call for further study of “human factors in the voting process.” SA-456. This is in keeping with the State’s earlier inquiries into supposed “human factors.” In interrogatories propounded to the individual voter plaintiffs who also brought a contest action in Florida state court, the State inquired of each:

Do you wear glasses, contact lenses, or hearing aids? If so, who prescribed them, when were they prescribed, when were your eyes or ears last examined, and what is the name and address of the examiner?

Did you consume any alcoholic beverages or take any drugs (prescribed or not) or medications within 12 hours before the time you voted in the November 2006 general election? If so, state the type and amount of alcoholic beverages, drugs (prescribed or not), or medication which were consumed, and when and where you consumed them.

SA-501. The State has consistently sought to obscure or ignore the real issues here — that hundreds of voters reported problems with the iVotronic machines, that the problems reported are consistent with the smoothing-filter issue identified by ES&S in its August 15, 2006 letter, and that this issue was not fixed by the State,

the County, or ES&S prior to the election, despite the fact that each was aware of it. Thus, the State's examinations and reports simply cannot be trusted.

B. None of the State's Testing Has Explained the Undervote.

Despite the State's supposedly rigorous analysis and its pages and pages of reports, it is more than five months after the election and we are still no closer to finding out what caused the undervote in Sarasota County. The experts who have analyzed this election, however, have agreed on certain things. *First*, every expert has concluded that about 3,000 more voters in Florida's Thirteenth District intended to cast their ballots for congressional candidate Christine Jennings than for her opponent, Vern Buchanan. *Second*, every expert agrees that the "undervote is abnormal and unexpected and that it cannot be explained solely by intentional voting." SA-375. *Third*, the experts agree that something went very wrong in the interaction between the voters and the ES&S iVotronic touchscreen machines.

1. The Voters Cannot Be Ignored.

None of this expert analysis is a surprise to the voters of Sarasota County. What is a surprise to them is that the State, the County, Mr. Buchanan, and ES&S have concluded that it is they, the voters, and not the machines, that are to blame for the undervote. One need only to look through the materials Ms. Jennings has submitted with this Memorandum, however, to see that this is patently untrue. In the two-volume appendix that Ms. Jennings has provided entitled "Documentation

of Machine Malfunction,” the Panel will see the hundreds of sworn affidavits from voters attesting to the pervasive difficulties they had in recording their votes for Ms. Jennings on the iVotronic machines. *See* Volume I of Documentation Appendix. The Panel will also see that hundreds of poll workers submitted incident reports to the Supervisor of Elections’ Office documenting these problems. *See* Volume II of Appendix. Campaign workers also submitted incident reports showing that all was not well with the iVotronic machines on Election Day. *See id.* Sarasota County’s own technicians reported ongoing difficulties with the machines. *See id.* And after the election, the Jennings campaign and the Sarasota County Supervisor of Elections were flooded with e-mails from voters saying, in effect, “I thought it was just me until I read about it in the paper.” *See id.*

The State, the County, ES&S, and Mr. Buchanan discount these voluminous voter accounts as some form of mass hallucination. In an e-mail she sent early on Election Day, Supervisor Dent showed the esteem in which she held her county’s voters by exclaiming to a former colleague that these were “voter errors!” and lamenting that ever since the local Sarasota paper had reported on the problems with the iVotronics in early voting, voters had “come out of the woodwork” to complain. SA-504. It is somewhat surprising that Mr. Buchanan has not taken these voter complaints more seriously given that his own wife had difficulty voting for him on the iVotronic touchscreen. *See* SA-368. It is less surprising that the

State seeks to minimize or ignore these voter reports since it certified the iVotronics for use throughout the State of Florida. And of course, ES&S answers only to those who hold the purse-strings, not to the voters themselves. But these voter eyewitness accounts should not be minimized, ignored, or scoffed at as they have been by the defendants in the state-court action. These accounts present a compelling case that it was the machines and not the voters that malfunctioned in the congressional election. Following, and appended to this Memorandum at Exhibit C are just some of these accounts:

- “I went through the ballot making my selections on the iVotronics touch screen voting machine and took my time making sure that I voted in every race. I am certain that I cast a vote for Christine Jennings. When I reviewed the ballot at the end of the voting process, I noted that the race for the 13th congressional district . . . indicated that I had made no selection. I double-touched the 13th Congressional District race and again cast my vote for Christine Jennings. . . . I have more than 15 years experience in selling computer systems, five of those years are in selling touch screen systems. Based on my experience, I believe there was a software bug in the voting machine software causing the software not to register the touch.” Ex. C-160.

- “When I voted on the iVotronics machine I was being very methodical. When I voted in the Buchanan-Jennings race, I specifically voted for Christine Jennings and checked to make sure that the box was checked before I went to the next page. When I got to the review screen it reflected no vote was cast for the Congressional race, but both candidates’ names were shown. All of my other selections were properly recorded. I touched where it said no vote had been cast and it took me back to the Buchanan-Jennings race. I then re-voted for Christine Jennings and carefully rechecked the review page three times. I then pushed the vote button. No report was made to the poll worker. Prior to voting, the poll worker recommended that I check the review page before casting my final ballot. I am a registered Republican and I believe these machines failed democracy.” Ex. C-444.
- “I took a sample ballot, which I had previously filled out and my intention to vote in every race. I believed that I voted for Christine Jennings but I came to the review screen it said I had not cast a vote in the Congressional race. . . . I used the back arrow and it took me back to Congressional race and I recorded a vote for Christine Jennings.” Ex. C-168.

- “When my husband and I voted on the iVotronics touch screen voting machines, I was told by a poll worker to be sure and check the District 13 Congressional race because several voters, even at that early hour, had complained that they had voted for Christine Jennings, but the summary page did not reflect their votes for Christine Jennings.” Ex. C-169.
- “When I voted on the iVotronics touch screen voting machine I touched the screen for Christine Jennings and it showed I voted for Christine Jennings. But when I reviewed the summary page at the end of the ballot, it did not show a vote for Christine Jennings or anyone else.” Ex. C-166.
- “There was no warning or mention of any problems however, I was aware there may be a problem with the Congressional vote based on various media reports. I went through the ballot and specifically remember voting for Christine Jennings. When I arrived at the review screen, there was no candidate selected for the Congressional vote. I called a poll worker over and explained the situation and she told me that I did not ‘press hard enough’ when selecting the vote and I then

returned to the vote screen and recast my ballot, I then confirmed it on the review screen.” Ex. C-455.

- “When I voted on the touch screen voting machine I touched the screen voting for Christine Jennings and when I reached page 15, the summary page, it indicated that I had not voted for Ms. Jennings. I immediately called this to the attention of a poll worker who showed me how to go back and vote for Ms. Jennings. I followed her instructions and again voted for Ms. Jennings. It did appear on the summary screen this time and I hope was duly registered.” Ex. C-467.
- “When I voted on the iVotronics touch screen voting machine I touched screen and voted for Christine Jennings for U.S. Congress Florida District 13. When I reviewed my ballot before hitting the red button and actually voting, I saw the review screen did not show a vote for Christine Jennings. I was afraid I would lose my other votes if I tried to go back and correct the problem, so I then went ahead and cast my ballot without confirming that the machine had registered my vote for Christine Jennings.” Ex. C-484.

- “I attempted to vote for Christine Jennings in the District 13 race and experienced the following difficulties: I was well-aware of the difficulties in the early voting in District 13 race and so I carefully voted in each election on the ballot, including that race. When I got to the review page, my vote for Christine Jennings was not reflected. I called out to a poll worker to alert them that my vote in the District 13 race had not been recorded. The poll worker who came to assist me informed me that the same thing had happened to her when she had voted earlier. She guided me back to the District 13 page and I pressed the touch screen again to reflect my vote for Christine Jennings. The poll worker then guided me back to the review page where my vote in the District 13 race was reflected and I then pressed the vote button.” Ex. C-90.
- “When I voted on the iVotronics touch screen voting machine, I went through the ballot to vote. I was being careful because I seemed to have to press hard for my votes to register. In addition, I knew to be careful because my wife had been to vote previously and had overheard some women who had a problem voting discussing their problems with the machines. They were different machines. A neighbor also told me that she had encountered six different people

who had a problem with the voting machines. When the review sheet came up it said that I had not voted in the Congressional race even though I knew I had voted for Christine Jennings. I went back and registered my vote again and this time it indicated that I had voted for Ms. Jennings on the review screen.” Ex. C-89.

- “When I voted with the stylus on the iVotronics touch screen voting machine, I am absolutely sure the box for Christine Jennings showed the X. On the Review screen, however, Christine Jennings’ name showed but the box beside her name was blank. I clicked on the review ballot and corrected my vote and it then showed an X beside her name. After that, I registered my vote with the Red button at the top of the screen. After voting, I asked my husband if anything unusual happened when he voted (on a different machine). He told me that when he reviewed his ballot, the box by Christine Jennings’ name was blank and he had to correct it. At that time, I reported this to a poll worker named Charlie, who said he would report it.” Ex. C-73.
- “I had heard prior to going to the poll that there were problems with the voting machines. When I went to vote, the poll worker also warned me that there had been problems with the machine registering

the Congressional race. When I voted on the iVotronics touch screen voting machine, I voted for Christine Jennings. The screen indicated I had voted. Yet when I got to the end, the review page indicated that I had not voted in the Congressional race. I went back and voted for Ms. Jennings. This time my vote did register on the voting page.”
Ex. C-447.

- “I voted on the iVotronics machine I took my time to be sure I did not make any errors. When I voted in the Buchanan-Jennings race, I specifically voted for Christine Jennings and checked to make sure the box was checked before I went to the next page. When I got to the review screen it reflected no vote was cast for the Congressional race. All of my other selections were properly recorded. I touched where it said no vote had been cast and it took me back to the Buchanan-Jennings race. I then re-voted for Christine Jennings and I then pushed the vote button.” Ex. C-443.
- “When I voted on the iVotronics touch screen voting machine I touched the screen for Christine Jennings and it showed I voted for Christine Jennings. But when I reviewed the summary page at the end of the ballot, it not only failed to show a vote for Christine Jennings, but the only name to appear on the review page was Christine

Jennings, next to a blank box indicating no vote had been cast. I called a poll worker over and explained what had happened and the poll worker pulled back the page for the Congressional race. I revoted for Christine Jennings, and my vote appeared to register in my second review of the summary screen.” Ex. C-126

- “I had heard earlier media reports and was aware that there were some problems with the machines. When I arrived, I specifically asked if there had been problems and I was told no issue or problems had arisen. I voted for Christine Jennings on a touch screen and when I arrived at the review page the Congressional vote was left blank. I called a poll worker over at that time and she showed me how to move back and I re-cast my vote for Christine Jennings. On the final review page, I confirmed my vote was cast. I approached a poll worker to complain about the situation and filled out a complaint card.” Ex. C-589.

Ms. Jennings strongly encourages this Panel to study the appendix of affidavits, incident reports, technician log sheets, and e-mails that document the numerous problems with the iVotronic machines. As the Panel will see from examining these materials, none of the State’s testing has yet been able to explain the

problems reported by these voters. This was not a mass hallucination. This was a failure of democracy.

2. The Statistics Cannot Be Ignored.

In addition to ignoring the voters, the State's testing also ignored the statistical evidence Ms. Jennings presented in the trial court pointing directly to a failure of the machines, not of the voters. Professor Stewart testified that the date when an iVotronic machine was "cleared and tested" by Sarasota County election workers or their contractors (as reflected by "Event Code 01" in the machine's audit log) correlated strongly with the machine's undervote rate: Machines prepared in the final days before the deadline for completing all such preparations exhibited the highest congressional undervote rates. A-540. And another strong correlation existed between the number of machines "cleared and tested" on a given date and the undervote rate: As the County's staff or consultants got busier, clearing and testing more machines on a single day, the congressional undervote rate climbed. *Id.* Both correlations were statistically significant and both provided "evidence that inattention" or sloppiness in preparing the touchscreen machines "may have driven up the undervote rate." A-541. Because this evidence "goes to the physical preparation of the machines," not to characteristics of the voters, Professor Stewart testified, "it's totally inconsistent with the notion that the high undervote rate is caused by voter confusion." A-541, 553. Thus, Professor

Stewart concluded that machine failure likely “altered the outcome of this election.” *Id.* at 541, 554. None of the State’s reports has even attempted to address Professor Stewart’s findings.

C. Additional Testing Is Necessary.

The authors of the State’s three reports should not be blamed for their failure to identify the cause of the undervote. They were set up to fail by the hyper-compartmentalized structure the State established for its “audit.” In this three-part audit, those who had access to the hardware had no access to the software or source code; those who had access to the software and source code had no access to the hardware; and those who studied the processes and procedures did not look at the hardware, software, or source code. Perhaps most strikingly, no one in any of the three “audit” groups truly took account of the voters and the problems they reported. Apparently, the State never even bothered to interview a single voter about the problems he or she reported.

Ms. Jennings proposes to undertake additional testing with a far more integrated and dynamic approach. First and foremost, Ms. Jennings will do what the State has not done — test for the issues reported by voters, most commonly the issue of votes cast but not appearing on the review screen and votes that required great pressure or an extended touch to record. And Ms. Jennings will do this by ensuring that the experts who are studying the source code and other software are

working in tandem with the experts who are studying the hardware. This is an interactive process. When a piece of the source code looks questionable, an expert can use one of the iVotronic machines from Sarasota County to observe how that source-code command might manifest itself. And if an iVotronic machine exhibits anomalous behavior, an expert can look to the part of the source code where that behavior is coded to see what the problem might be.

Because much of the testing is a process of trial and error as the experts work through the various interactions among the voters, hardware and software, it is not possible to identify *a priori* exactly which tests Ms. Jennings's experts will perform. At a minimum, however, Ms. Jennings expects to test for the following issues:

- ***Real Parallel Testing.*** Several different kinds of tests would be used, including systematically testing every entry on the ballot and combinations of votes. There should also be random tests, and impromptu tests by individuals attempting to make the machines misbehave. Testers would explore factors affecting vote selection, including touching parts of the screen for various lengths of time to understand the delays imposed by the smoothing filter, noting whether those delays are consistent with any variations in voter demographics, voter behavior, ballot design, touchscreen calibration, or other related

factors. Special attention would be paid to whether, under any circumstances, delays in updating the displayed selections occur. Any unexpected events would be noted and investigated further by reinspecting the source code to explain any non-deterministic behavior.

- ***Touchscreen Calibration Testing.*** Examination of the source code is important for understanding how the calibration process works internally, and how finger-presses are converted to coordinates. Doing this examination properly would require analyzing the source code as well as instrumentation of the actual iVotronic machines used in Sarasota County to understand the stream of data events that are generated by touches on the screen, particularly with different parts of the finger and pressing at different angles.
- ***Smoothing-Filter Testing.*** Testing would occur on the problem identified by ES&S but never disclosed to Ms. Jennings regarding the smoothing filter. This testing would involve the hardware and software. One major question is if the smoothing filter is implemented purely in software, identical on every iVotronic, why would there be variation in its behavior from one iVotronic machine to the next, or from time to time, as ES&S indicated in its letter.

The testing proposed by Ms. Jennings could be accomplished by a relatively small number of experts in a few weeks' time provided that these experts are given full, unhampered access to the necessary hardware and software (including source code), as more fully detailed in Part III.

III. THE PANEL SHOULD AUTHORIZE DISCOVERY.

The Panel should authorize discovery narrowly focused on the issue of whether pervasive malfunctioning of Sarasota County's paperless iVotronic system caused the bizarrely high congressional undervote rate. To that end, the Panel should subpoena the key evidence (the iVotronic hardware and software, including the source code), divide the evidence among itself and the two parties' expert teams, ask the parties' experts promptly to analyze the evidence and submit reports under oath, assess those reports, and then resolve the case on an expedited basis. Ample House election-contest precedent supports precisely this approach.

A. Discovery Should Be Narrowly Focused to Address the Issues That Remain Genuinely Disputed in This Case.

The Panel should authorize discovery so that the House of Representatives, Ms. Jennings, Mr. Buchanan, and the citizens of Florida and of this Nation can learn, once and for all, what actually happened in Sarasota County in the 2006 congressional election. The key question to be answered by discovery in this case is not *whether* democracy failed the people of Florida's Thirteenth District, but *why*. One side claims that the ballot format confused the voters, who therefore

failed to cast their intended congressional ballots. The other side claims that the voters cast their intended congressional ballots but the machines failed to record them correctly. The only way to resolve this dispute is to allow *both* parties to independently test the iVotronic system's hardware and software, including its source code.

B. A Specific Proposal for Resolving This Case.

Ms. Jennings proposes a specific process for resolving this case. Under this proposal, the Panel would subpoena the key evidence, divide it among itself and the two parties' expert teams, give the parties' experts a month and a half to analyze the evidence and submit reports and counter-reports under oath, assess the parties' expert reports, and then either recommend dismissing the case or continue with the case under the FCEA, preferably on an expedited basis. Here is a concise description of the seven stages of this process:

Step 1. The Panel would subpoena the iVotronic system hardware and software that is essential to expeditiously determining whether machine malfunction substantially contributed to the excess undervote in Sarasota County's 2006 congressional election. The items to be subpoenaed are listed, with specificity, at Exhibit D to this Memorandum.

The Panel would issue three subpoenas. *First*, most of the hardware and some of the software would be subpoenaed from the Sarasota County Supervisor

of Elections' Office. Because the voters of Sarasota County have enacted a county charter amendment barring the County from using this equipment in 2008 and beyond, and because roughly half of the County's voting machines have remained under seal since the November 2006 election (and were not used in the March or April 2007 local elections), this equipment is readily available for discovery in this case. Indeed, almost all of it has been effectively "frozen" by a stipulated agreement that the Florida trial court entered on February 21, 2007. *See* SA-505. **Second**, the source code and related materials would be subpoenaed from the State of Florida's Division of Elections, which is required by law to keep the source code in escrow. (The County does not have access to the source code.) **Third**, some items needed to expedite the review would be subpoenaed directly from ES&S, such as the company's database for tracking "bugs" in the iVotronic system and its software version control repository. *See* Exhibit A (describing these items in detail). Having these items in hand will help all the experts quickly to identify possible leads for their investigations.

Step 2. The Panel would divide the subpoenaed materials into three equivalent sets for expert analysis — one set for Ms. Jennings's experts, a matching set for Mr. Buchanan's experts, and a third set that the Panel would hold in reserve in case it (or its experts or consultants) needs to independently verify or cross-check either party's expert findings. During the next 45 days, the Panel, at

its discretion, could retain experts or consultants to analyze the parties' expert reports and, if needed, to conduct its own independent investigation into any particular aspect of the hardware and software.

Step 3. Upon both parties' experts' receiving their full sets of subpoenaed materials, the parties would have 30 days to file and serve expert reports, under oath, analyzing whether and, if so, how Sarasota County's iVotronic system contributed to the excess undervote in the 2006 congressional election. *Cf.* 2 U.S.C. § 387(c) (permitting witnesses to testify by affidavit).

Step 4. Upon being served with the opposing party's expert report, each party would then have 15 days to file and serve an expert rebuttal report, under oath, analyzing and responding to the opposing party's expert report. *Cf. id.*

Step 5. The Panel would then assess the two expert reports and the two expert rebuttal reports. The Panel could ask its own experts or consultants, if any, to assist in assessing the reports and, if necessary, to check the findings of the parties' experts by independently examining any particular aspect of the hardware and software that was subpoenaed but not distributed to either party.

Step 6. The Panel then would promptly either (1) recommend that the full Committee dismiss Ms. Jennings’s contest; or (2) order Mr. Buchanan to file within 10 days his answer to Ms. Jennings’s December 20, 2006 notice of contest.⁵

Step 7. If the Panel orders Mr. Buchanan to file his answer, service of that answer will trigger the commencement of compelled discovery by the parties under the FCEA. *See* 2 U.S.C. §§ 386-391. If, as seems probable, the exchange and assessment of expert reports have sufficiently narrowed the remaining factual disputes, the scope of permissible compelled discovery could be dramatically limited. *See id.* § 386(b) (permitting discovery of only those matters “relevant” to the “pending” subject matter). Therefore, the Panel might significantly shorten the FCEA’s time limits for compelled discovery and briefing. *See id.* § 386(c) (allowing up to 70 days for compelled discovery — 30 days for the contestant, 30 for the contestee, and 10 for contestant’s rebuttal); *id.* § 392(d)-(f) (allowing up to 85 days for briefing — 45 days for contestant’s initial brief, 30 for contestee’s answer brief, and 10 for contestant’s reply brief).

⁵ At the same time, the Panel could either rule on Mr. Buchanan’s January 19, 2007 motion to dismiss (which he filed in lieu of an answer) or further postpone the motion’s disposition until it hears this case on the merits. *See* 2 U.S.C. § 383; SA-539 (Letter from Chairwoman Millender-McDonald to Ms. Jennings & Mr. Buchanan at 1-2 (Feb. 6, 2007) (postponing disposition of the motion until further notice)).

C. The Panel Has Clear Authority to Subpoena the iVotronic Hardware and Software, Including the Source Code.

There can be no doubt about this Panel’s authority to issue the subpoenas described above. The FCEA’s discovery provisions repeatedly refer to the production of “books, papers, documents, [and] other tangible things,” terms broad enough to encompass the iVotronic hardware and software (including source code). 2 U.S.C. §§ 386(b), 388(e); *see also id.* §§ 390, 392(a). And as the Congressional Research Service (CRS) recently explained, the Panel may “conduct its own investigation, take depositions, *and issue subpoenas.*” CRS Report on Contested Elections, *supra*, at 21 (emphasis added). Specifically, CRS noted the Panel’s authority to travel “to the site of an election” with counsel and GAO auditors and “to impound records, ballots, tally sheets, ballot stubs, poll books, ballot boxes, voting machines or other electronic voting systems, . . . as well as other related materials to investigate the contested election.” *Id.* at 14-15.

Indeed, the Committee and its ad hoc election-contest panels have a long history, stretching back more than a century, of doing exactly that. Just to cite a few examples:

- In 1874, the House Committee on Elections subpoenaed a Louisiana election official to produce election-related documents that were in his possession but that he had refused to provide voluntarily. *See* 1 ASHER C. HINDS, HINDS’ PRECEDENTS OF THE HOUSE OF

REPRESENTATIVES OF THE UNITED STATES § 710 (1907) [hereinafter “HINDS”].

- In an 1883 election contest from Alabama’s Fourth District, after concluding that the statutory predecessor to the FCEA allowed too much time for the parties to engage in compelled discovery under the circumstances, the House empowered a special three-Member panel to travel to the district “without unnecessary delay” and then “send for persons and papers and administer oaths” in order to expeditiously complete its investigation. 1 HINDS § 714.
- In an 1896 election contest from Illinois’ Sixteenth District, the contestant subpoenaed county clerks to produce the ballots, but the county clerks refused to produce them because a state court had enjoined the clerks from opening or removing the ballots. Rather than go to court to uphold the validity of the contestant’s subpoenas, the House Committee simply issued its own subpoena for the ballots, so that it could then examine the ballots itself. *See* 2 HINDS § 1070.
- In a 1904 election contest from California’s Fourth District, the House issued a subpoena to compel San Francisco’s registrar of voters to testify before the Committee on Elections and to “bring with him all

the ballots and packages of ballots cast in every precinct,” so that the House Committee could examine and count them. 1 HINDS § 731.

- The same year, in a case from Colorado’s First District where the contestant alleged that ballot boxes had been stuffed, the Clerk of the House took custody of the ballots and poll books, and the House then hired a handwriting expert to “examine and report upon the handwriting upon all the ballots and in all the poll books.” 1 HINDS § 733. The expert’s findings led the contestee to “frankly acknowledg[e]” that “the contestant [was] entitled to his seat, from which . . . the contestee voluntarily retired without any action whatever by the committee.” *Id.*
- In a 1906 election contest from Missouri’s Twelfth District, the House authorized the Elections Committee to “send for all such persons and papers as it may find necessary” to investigate the integrity of the record. 1 HINDS, § 715.
- In a 1959 election contest from Arkansas’ Fifth District, the House authorized the Committee on House Administration “to send for persons and papers and examine witnesses on oath,” and the Subcommittee on Elections traveled to Little Rock “to take physical

custody of the ballots and other materials.” 2 DESCHLER, *supra*, ch. 9 §§ 5.9, 58.1.

Although these cases predate the FCEA (enacted in 1969), they postdate the FCEA’s predecessor statute (enacted in 1851), which for relevant purposes was similar or identical to the FCEA. Therefore, the FCEA and applicable House precedents clearly establish this Panel’s authority to pursue the approach proposed in this Memorandum, including issuing subpoenas to the county and state election officials and the voting machines’ vendor.

IV. THE PANEL CAN ADEQUATELY PROTECT ANY PROPRIETARY INTERESTS OF ES&S THROUGH A PROTECTIVE ORDER AND NONDISCLOSURE AGREEMENT.

The Panel has asked the parties to address how it can “protect [ES&S’s] proprietary interests” *if* “discovery entail[s] an examination of trade secrets.” Letter from Chairman Gonzalez to Mr. Hirsch at 2 (Apr. 3, 2007). That is a big “if.” Throughout this controversy, ES&S and its codefendants have hid behind the artifice of “trade secrecy” in order to frustrate the efficient discovery of the truth. Although it is conceivable that some aspects of the iVotronic system actually do fall within the parameters of Florida law’s definition of a “trade secret,” that point has never been tested, much less proved.

Since the inception of the state-court litigation in mid-November, Ms. Jennings has been willing to assume, for the limited purposes of expediting access

to this key evidence, that parts of ES&S's iVotronic system are subject to the trade-secret privilege. But ES&S, with the acquiescence of Mr. Buchanan and the other defendants, has offered up blanket claims of privilege that are so broad as to be, frankly, absurd. For example, they have claimed that allowing Ms. Jennings's experts to conduct a videotaped "mock" election on several of the County's machines would somehow invade trade secrets. Since a scientifically valid mock election, as described above, is designed to replicate as closely as possible an actual election, if ES&S's claim of privilege were valid, then every voter in Sarasota County would have invaded ES&S's "trade secrets." That argument is just plain silly.

Even as to the source code, ES&S's trade-secrecy claims are dubious. To sell iVotronic machines in North Carolina, for example, ES&S is required to make its source code available for inspection, merely upon request, to a wide group of potentially interested individuals, including the state chairs of every recognized political party and up to three persons designated by each party chair. *See* N.C. G.S. § 163-165.7(a)(6), (d)(9). That degree of transparency alone likely destroys the trade-secrecy privilege. *See Ruckelshaus v. Monsanto Co.*, 467 U.S. 986, 1002 (1984).

Furthermore, trade secrecy is protected purely as a matter of state law. Congress, in fulfilling its federal constitutional and statutory duties, is under

absolutely no obligation to abide by state-law privileges. See Louis Fisher, American Law Division, Congressional Research Service, *Congressional Investigations: Subpoenas and Contempt Power*, at 7 (Apr. 2, 2003) (noting that “legislative needs” embodied in a congressional subpoena can override a private party’s asserted “need to protect confidential trade secrets”).

In any event, even if we assume for argument’s sake that parts of the iVotronic system that the parties’ experts will need to examine are trade secrets, that is no reason for denying access altogether. As the Supreme Court has noted, “orders forbidding *any* disclosure of trade secrets or confidential commercial information are rare. More commonly, the trial court will enter a protective order restricting disclosure to counsel or to the parties.” *Federal Open Market Comm. of Fed. Reserve Sys. v. Merrill*, 443 U.S. 340, 362 n.24 (1979) (internal citations omitted; emphasis added).

Here, normal protective measures would be more than adequate. Neither the parties seeking access nor their experts are business competitors of the trade secrets’ owner. So there is no risk of direct harm to ES&S. In an abundance of caution, the experts for Ms. Jennings are perfectly willing to sign nondisclosure agreements and to abide by any reasonable protective order that the Panel might impose. Ms. Jennings proposed to the state trial court a standard trade-secrecy protective order for use in cases involving computer software, which is reproduced

at Exhibit E of this Memorandum. Similar or identical measures could certainly be imposed by this Panel.

Furthermore, Ms. Jennings's lead computer-science expert, Rice University's Dan S. Wallach, has testified that he would obey and "comply to the letter with any protective order" entered, as he has done in past cases involving source code designated as a trade secret. A-558, A-564. And Professor Wallach has testified how, in a patent-infringement case, he was entrusted, without incident, with "Microsoft source code that is considered so sensitive that only a handful of employees within Microsoft are given access" to it. A-558. In this case, he and his team members would be subject to the House's power to hold persons in criminal contempt of Congress under 2 U.S.C. §§ 192, 194, making it all the more certain that ES&S's trade secrets, if any truly exist, would remain confidential and safely protected.

CONCLUSION

Ms. Jennings respectfully requests that this Panel, to fulfill its constitutional and statutory responsibility to investigate this contested election and to expeditiously report its findings and recommendation to the full Committee on House Administration, promptly proceed by authorizing discovery under the FCEA in accordance with the plan proposed in this Memorandum.

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Respectfully submitted,

CHRISTINE JENNINGS

Date: April 13, 2007

By: *Sam Hirsch*

DONALD B. VERRILLI, JR.
SAM HIRSCH
JESSICA RING AMUNSON
JENNER & BLOCK LLP
601 Thirteenth Street, N.W.
Washington, DC 20005
(202) 639-6000

KENDALL COFFEY
COFFEY BURLINGTON
2699 So. Bayshore Drive, PH1
Miami, FL 33133
(305) 858-2900

MARK HERRON
MESSER, CAPARELLO & SELF, P.A.
2618 Centennial Place
Tallahassee, Florida 32308
(850) 222-0720

ATTACHED EXHIBITS

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EXHIBIT A

STONES UNTURNED: GAPS IN THE INVESTIGATION OF SARASOTA'S DISPUTED CONGRESSIONAL ELECTION

David L. Dill
Dept. of Computer Science
Stanford University
dill@cs.stanford.edu

Dan S. Wallach
Dept. of Computer Science
Rice University
dwallach@cs.rice.edu

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EXECUTIVE SUMMARY

The November 2006 race for Florida's 13th Congressional District resulted in a 369 vote margin of victory for the winning candidate with more than 18,000 undervotes recorded on the ES&S iVotronic touch-screen voting machines used in Sarasota County. Since then, the losing candidate and a coalition of local voters have filed suit against the state and local election officials (among other defendants), seeking a judicial order to rerun the election. A key question is whether a system malfunction may have induced the undervote rate. We evaluate the two major efforts previously undertaken by the State: a mock election, conducted by the State, and an analysis of the iVotronic source code, conducted by academic computer scientists under contract to the State. Press reports and summaries of the State's findings have created a public perception that the investigation was thorough and that the voting machines have been exonerated of contributing to the undervote. Based on our evaluation of the investigation, this perception is not justified.

There are many significant gaps in the tests conducted by Florida and its experts. The defined scope of the mock election specifically excluded examination of the vote selection process, which, based on voter complaints, should have been a major focus of the investigation. The tests were conducted in an artificial setting with the iVotronics mounted vertically, unlike their horizontal orientation in real elections. Furthermore, the State's report claims that there were no anomalies observed during the vote, yet video recordings of the test show occasional vote selections not registering on the machines.

The State's inspection of the iVotronic's software was also incomplete. The State's academic team read the source code but performed limited hands-on experimentation with demonstration machines. They made no attempt to examine whether the hardware functioned properly, nor did they examine iVotronic machines that were used in the actual election. The team performed no analysis based on compiling and executing the software, either on iVotronic hardware or in a "test harness." Such testing is commonly used to identify bugs that may manifest themselves only under obscure conditions. Likewise, the team did not review internal ES&S documents, such as their bug tracking systems or software repositories, which might contain important clues about the problem. For key issues, including how the iVotronic screen is calibrated and how its smoothing filter operates, the final report contained insufficient detail to determine how these issues may have impacted the undervote.

In total, the State's investigations have provided no persuasive explanation for Sarasota's undervotes. We recommend additional testing and analysis of both the software and hardware used in Sarasota. We also recommend analysis of ES&S's internal documents, including their bug tracking system and other versions (earlier and later) of their software. We estimate that this additional investigation could be conducted by an appropriate team of experts with about a month of work.

1 INTRODUCTION

In the November 2006 general election, in Florida's 13th Congressional District (hereafter, "CD13"), Vern Buchanan was the certified winner, defeating Christine Jennings with a 369-vote margin, but with over 18,000 "undervotes" (i.e., cast ballots with no selection in this particular race) in Sarasota County. The unusually high undervote rate led Jennings, as well as a coalition of non-partisan organizations, to mount legal challenges to the election results.¹

	Total Votes	%	Election Day	Early Voting	Absentee	Provisional
Vern Buchanan	58,632	47.24	36,619	10,890	11,065	58
Christine Jennings	65,487	52.76	39,930	14,509	10,981	67
Over Votes	1		0	0	1	0
Under Votes	18,412		12,378	5,433	566	35

Table 1: Official election results from Sarasota County.

This congressional district spans five counties; the controversy centers on Sarasota County and its use of the ES&S iVotronic paperless electronic voting system. Table 1 describes the election-day results published by Sarasota County. 12.9% of the votes cast in Sarasota County for the CD13 were undervoted, in contrast with other races that have much lower undervote rates (e.g., 1.14% in the Senate race, 1.28% in the Governor race, 4.36% in the Attorney General race, and 4.43% for the Chief Financial Officer race). Vote tallies from the surrounding counties in CD13 likewise had low undervote rates.

If the iVotronic votes in Sarasota County are considered alone, the CD13 undervote rate was 14.9%. This contrasts with a Sarasota County CD13 undervote rate of 2.5% on absentee ballots (i.e., centrally tabulated optical scan ballots). Without a doubt, the iVotronic votes in the Congressional race exhibit an anomalously high undervote rate. If a result like this had occurred with punch cards or with hand-marked ballots, the inquiry would certainly have focused on a flaw in the tabulating machinery and would have reexamined the original ballots. Unfortunately, the iVotronic does not produce a voter-verified paper record that can be reexamined, so an investigation must follow other avenues.

The subsequent sections of the paper first describe what would be reasonable priorities for investigation of the Sarasota's undervote rate (Section 2), followed by a discussion of the the actual investigation, focusing on the testing performed by the State of Florida (Section 3), and the source code analysis performed by several academic computer scientists under contract to the State (Section 4), with consideration of where both fell short. We finish with conclusions and recommendations for future investigation (Section 5).

2 PRIORITIES FOR INVESTIGATION

We feel strongly that the CD13 undervote merits more extensive investigation, with many obvious questions remaining open. It may not be possible to answer every question, but until relatively simple and straightforward steps are taken to try to answer the open questions, there will continue to be doubt about whether the outcome of the race represents the will of the electorate, and the same problems may arise in the future because we failed to understand and correct the problems that caused the CD13 undercount. The goal of this paper is to discuss where limited resources for investigation could be best employed to maximize the likelihood of gaining more insight into the causes of the CD13 undervote.

For the sake of this discussion, we operate under the hypothesis that the CD13 undervote is most probably the consequence of an accidental problem associated with the iVotronic voting system. We do not

¹Dill and Wallach are both expert witnesses for plaintiffs in the *Jennings v. Buchanan*-related lawsuits. This document represents our best efforts to present an unbiased consideration of the facts in this case.

propose to investigate whether the CD13 undervote is the result of malicious software or tampering with the votes stored electronically in the iVotronics. While we have no evidence that the latter conjectures are untrue, we also have no evidence in favor of them. Furthermore, if someone had the ability to unduly influence the election outcome, they would be unlikely to choose to create an obviously high undervote rate, rather than making other changes that would be less likely to be noticed. And, most importantly, an effective investigation of malice or tampering would be exceptionally difficult to conduct with limited resources.

Our discussion is divided into two investigative strategies: testing and inspection. The first strategy focuses on the behavior of the systems and their interactions with the voters, while the second focuses on the design and implementation of the iVotronic voting systems. The State of Florida's investigation explored both perspectives, but did so incompletely.

Knowing where *not* to look can save effort. The cause of the undervote is most likely to be found somewhere between when the voters entered the voting booth and when the vote totals were reported by the voting machines. In particular, we consider it unlikely that any vote corruption was introduced through the county's centralized vote tabulation process, a conclusion we base on the success of Sarasota's recount. For each of the approximately 1500 iVotronics, a pair of election workers inserted a "personal electronic ballot" (PEB), to collect the vote totals from that machine. Once all of the machines in a precinct had their votes stored on a PEB, a hand-held thermal printer was connected to the serial port of the last iVotronic from the precinct and that machine was instructed to print the totals. These totals were brought up to a table where they were announced before various TV cameras and election observers.

The final totals, after the two-day recount exercise, were slightly different from the original totals, but the official results indicate that the changes resulted entirely from reconsidering the absentee votes (using optically scanned ballots) and including provisionally cast ballots. The results of the recount greatly reduce the probability that the high undervote rate resulted from some tampering with data after it left the iVotronics, either in transit or in the Unity election management system.² *Therefore, further investigation should focus on the voting machines and their interaction with the voters.*

2.1 Machine behavior and voter interaction

2.1.1 Complaints

An obvious source of clues about the cause of the undervote would be complaints by voters and poll worker incident reports during the election. There were hundreds of complaints, most which point to problems with the interaction between the voter and the voting machines [8]. Many voters complained during the election that their selections registered in the CD13 race screen, but failed to appear on the screen summarizing the voter's selections just before the vote is cast. Others complained that the CD13 race did not appear on the ballot at all. There were also many complaints that the machines were slow to respond, or that the touch-screens had to be pressed for an extended time before they would register a selection.

2.1.2 Smoothing filter

There has been significant press coverage focusing on the software-based "smoothing filter" used by the iVotronic to filter out stray clicks, finger bounces, and other transient effects. ES&S sent a memo in August 2006 to its Florida customers [1] stating:

It has come to our attention after a number of inquiries from several of our iVotronic 12 inch screen users that some of your screens are exhibiting slow response times. After receiving some

²ES&S's Unity election management system runs on a general-purpose PC and performs several functions, including collecting data from individual machines, tabulating votes, and generating reports on the election results.

of these terminals in our Omaha, NE facility we were able to replicate a slow response during testing.

...

We have determined that the delayed response time is the result of a smoothing filter that was added to iVotronic firmware versions 8.x and higher. This smoothing filter waits for a series of consistent touchscreen reads before a candidate name is highlighted on the ballot. In some cases, the time lapse on these consistent reads is beyond the normal time a voter would expect to have their selection highlighted. This delayed responses to touch may vary from terminal to terminal and also may not occur every single time a terminal is used.

The memo then goes on to recommend poll workers be trained to help voters with this condition and describes ES&S's efforts to repair the bug. To the best of our knowledge, Sarasota's iVotronic machines were running the software version with the above-described problem and Sarasota's poll workers were not specifically trained to assist voters with this problem.

2.1.3 Touch-screen calibration

Another common worry about the accuracy of touch-screens over the years has been *calibration error*. On any touch-screen display device, the clear, touch-sensitive layer is separate from the part of the screen that displays the buttons. To ensure that every touchscreen press is accurately mapped to screen coordinates, a calibration step is necessary. This process, familiar to anyone who owns a PDA, involves the machine displaying a series of cross-hairs and asking the user to press on the center of each cross-hair. The machine can then compute the necessary correction to apply to screen presses.

Among other procedures, the technicians who prepared the voting machines in Sarasota County were responsible for calibrating their screens. The ES&S iVotronic is unusual in requiring twenty different calibration targets to be touched as part of this process. For comparison, Palm and Windows XP Tablet owners are asked to touch only four targets.

If calibration is inaccurate, voters' touches are less likely to be registered accurately (they may be missed, or even associated with the wrong candidate). There is some evidence to support the theory that machine miscalibration may have been an issue in Sarasota. Stewart, an expert for the Jennings legal team, found a significant correlation between the "clear and test" times for the voting machines and their undervote rate as well as a significant correlation between the number of machines cleared on a given day and their undervote rate [11, 12] (see also the discussion of screen calibration in Section 3.2). Perhaps, in the process of setting up over a thousand machines, technicians grew more careless with calibration as the days progressed.

A test for this, simple to perform, would be to deliberately miscalibrate iVotronic machines and to carefully observe the behavior of a variety of test voters using those machines with the standard Sarasota ballot. Likewise, a number of the iVotronic machines, still sequestered in a warehouse in Sarasota, could be tested to determine how accurately they were calibrated, and this could be compared with the actual undervote rates on those machines. If poorly calibrated machines were observed to correlate with a higher undervote rate, then calibration effects would warrant increased attention. (Jones [9] raises the possibility that calibration can be thrown off when a voter rests one hand on the screen while pressing it with the other hand. This theory could also be tested experimentally.)

2.1.4 Ballot design

Another theory about the CD13 undervote is that it resulted from the particular layout of the ballot, which put the two-candidate CD13 race at the top of the page, above a much longer list of candidates in the Governor's

race. The Governor's race also began with a prominent "State" heading that, it is hypothesized, distracted voters from the CD13 race (see, e.g., Frisina et al.[7]). This hypothesis has been vigorously debated, and we don't want to repeat the arguments on both sides here, except to note that there were many voter complaints of problems that were not consistent with this explanation. However, it would be *extremely difficult* to prove this hypothesis except by a large-scale user study involving hundreds of voters with different backgrounds, controlling for many different factors, including many of those above (e.g., calibration and user interface timing). Such a study would also need to carefully control for prior awareness by the users of the relevance of the experiment to the CD13 contest.

In addition to demonstrating ballot effects, such a study would have to show that they are of the same magnitude as the CD13 undervote. While such a study would yield valuable results for improving the accuracy of elections, we would only propose it as part of the CD13 investigation if ample resources were available. There are many other important questions that can be studied without requiring such a massive effort.

2.1.5 Surprising effects

Computer systems are so complex that the causes of a problem, when discovered, are often surprising. While investigations must be conducted with specific issues in mind, such as those raised in the voter affidavits, they must also be mindful of the possibility that important clues could come from anywhere, such as unexpected behavior that arises in response to a test. Likewise, weaknesses in the vendor's engineering processes may also lead to unexpected problems in practice. Investigators must be alert for such clues and be prepared to pursue them.

It has been recognized that an important quality of so-called real-time embedded systems is that they should behave *deterministically*, meaning that they should behave predictably in the same way in the same circumstances. The same property would be desirable for voting systems for the same reasons. Non-determinism leads to an explosion of different possible system behaviors, which, in turn, often lead to flaws in programs because the programmers don't anticipate all of the possibilities. Non-determinism also makes systems much harder to test and debug; if the system is deterministic, odd or erroneous behavior is easier to reproduce so that it can be investigated and repaired.

We don't know to what extent the iVotronic was designed to behave deterministically (although the SAIT report [14] mentions specific programming practices that may lead to non-deterministic behavior), but any observed non-determinism should be treated as an indication of the potential for other hidden problems. The discussion above has already mentioned one such case that is worthy of further investigation: the as-yet unexplained variable behavior of the smoothing filter (see Section 2.1.2).

2.1.6 Combined effects

It is quite possible that there was a system failure which resulted from the *combined effect* of voters and software or hardware that behaved in counter-intuitive ways – or contained outright errors. It's possible that unexpected machine behavior could have caused voters to take actions which caused their votes to be unintentionally lost. Historically, many system failures arise from the combined effects of poorly designed software and its interactions with users. It is not appropriate to dismiss such problems as user errors. The end result is a system failure, in this case, an inaccurate vote, and systems must be designed to minimize such failures. In particular, a machine failure or design flaw – such as a program bug that leads to unpredictable timing in the user interface – could lead to inaccurate voting because of the way that voters react to it.

Leveson [10] summarizes the general concept:

... human actions both prevent and contribute to accidents in high-technology systems. Accidents and incidents occur because of human error, machine failure, poor design, inadequate

procedures, social or managerial inadequacies, and the interaction of all these factors. Assignment of blame to operator error alone ignores the multiple causality of accidents and the relationship between human actions and the context in which they occur. ... [A]scriptions of blame to humans for accidents in complex systems is often simplistic and may get in the way of reducing risk through improved engineering and management.

An excellent example to illustrate this point comes from a competing voting system from Diebold, which demonstrates how a software bug may manifest only as a result of the occasional idiosyncratic behavior of a few voters. The Diebold AccuVote-TSx voting system would crash on occasion, seemingly at random. The cause was eventually discovered. In rare instances, a voter would touch the "cast vote" button and then drag his or her finger to another part of the screen, outside the boundaries of the button. This action was interpreted as a "drag and drop" operation by the underlying Windows CE system and would cause the voting machine software to receive an unexpected signal, corrupting the machine's internal state and leading the machine to crash. Only some voters will experience such a problem, and the same voter may experience it some times and not others, without knowing how they caused it. Finding this problem required extensive test voting with a variety of test voters [3].

While this example pertains to a system not used in Sarasota, it represents a significant failure of electronic voting systems that is very difficult to discover with the type of carefully scripted testing performed in the State's investigation. To discover this type of problem, it is better to have a variety of people entering votes, who may do a variety of unexpected things, and to have people acting creatively to produce inputs that the machine's programmers may not have anticipated.

2.2 Inspecting the system design and implementation

The State's investigation included inspecting the "source code" for the system [14]. Source code is the human readable representation of a program that the programmers work with. Of course, there is a lot more to a computer voting system than the source code for the voting application.

To begin, the system doesn't execute source code. It executes binary files, which represent machine instructions as a sequence of numbers. Binary files, needless to say, are more difficult for humans to inspect. These binary files are "built" from the sources by running a series of software translation tools, including compilers and linkers. In a sense, investigating the system by reviewing source code is like investigating the collapse of a building by reviewing blueprints. The blueprints have valuable information but the actual building may differ in subtle but significant ways from its blueprints.

Furthermore, the voting application runs in a larger environment of software, firmware, and hardware that supports it. A malfunction in that environment, or a misunderstanding between the application program and the environment, can cause anomalous behavior. According to the SAIT report [14], the ES&S iVotronic contains several "off-the-shelf" items, including a microprocessor, various controller chips, and several software drivers that were not reviewed at all. Any of these components could have contributed to problems, especially since one of them is the software driver for the touch-screen itself.

Finally, the process by which the system was designed, maintained, and enhanced requires careful consideration. In particular, it is standard practice in industrial software development to maintain databases of reported problems with software and hardware, and to carefully track the design changes made to respond to them. Such logs include the date, time, and the names of those making the changes. Parts of the software that are badly designed or just especially hard to get right will have more bug reports and changes than other parts, as the same general types of problems often arise multiple times. Inspection of these reports and changes could yield valuable clues about the causes of problems.

Of particular note, Florida uses an older version of the iVotronic software than that used in many other states. Bugs have certainly been discovered and repaired by ES&S in their subsequent software releases.

Such bugs would clearly have been present in the systems used in the November 2006 Sarasota election. Obviously, these could be relevant to the CD13 undervote and, as such, the ES&S records should be made available for investigation. (See Section 4.6 for more on this topic.)

These two modes of investigation, testing and inspection, are most effective when they are done in tandem. When unexpected behavior of the system is observed in practice, the design and implementation should be inspected more closely to explain it. Similarly, inspection of the design will generate questions about the behavior of the system. These questions can then be answered by testing real machines to see how they behave in practice.

3 “PARALLEL” TESTING

One of the most important parts of the investigation was the so-called “parallel testing” performed by the State of Florida’s Division of Elections. In truth, the State’s parallel testing is a misnomer, and the testing would more accurately be termed a “mock election.”³

The State conducted its two tests after the election. The first test was conducted with five spare machines, unused in the previous election, but configured as if they would be used for the general election. The second test was conducted using actual machines used during the election. The Jennings and Buchanan campaigns were allowed to specify two machines, each, based on their serial numbers. Jennings selected two machines with notably high undervote rates. Buchanan allowed the State to select two machines at random. A fifth machine was also selected for so-called *ad hoc* tests.

Test scripts were developed based on votes cast in the general election. In each of the two tests, four of the machines received these scripted test votes while a fifth was reserved for *ad hoc* testing, in which test voters followed no particular scripts. The test voters were all staff members of Florida’s Secretary of State’s Office. The whole process was recorded on video.

The summary report, produced by the State, claimed that no significant discrepancies were discovered in either test [5]. A few apparent discrepancies after testing were identified as errors by the people entering the test votes, based on reviewing the video recordings.

While the State’s testing was time-consuming, it failed to address many of the most important questions about the undervote rate. Despite this, the State auditor’s conclusions were quite broad:

[Based on the parallel tests] the audit team concluded that the iVotronic direct recoding [*sic*] devices correctly captured the voters’ selections and accurately recorded the votes cast as displayed to the voters on the review touch screens. ([6], page 2)

This conclusion is not justified, because the testing was not sufficiently thorough, as summarized below.

3.1 Narrow scope

The State’s tests were not designed to discover defects in the voting machine that might be triggered by the variation in different voters’ interactions with the voting system, even though this would be a seemingly obvious area to study. The mismatch between the reported problems and the investigation is evident in the State’s final audit report:

³ The principle of parallel testing, which has been used in California since 2004, is to simulate an election on machines that is so realistic that a machine cannot determine whether it is being tested, or whether it is being used by real voters in a real election. The defining characteristic of parallel testing is that it occurs on a set of voting machines, chosen at random immediately before the election, that would otherwise have been used for real voting. This aspect of parallel testing was intended to prevent potential malicious software in the machines from using the date and time as a cue to detect that they are being tested.

Although a number of these voters indicated a problem with their initial and final selection for the 13th Congressional District race, the primary focus of the parallel tests is the review screens. . . . [T]he primary question concerning the accuracy of the iVotronic touchscreen is whether the review screens as presented to the voter and ultimately verified and cast by the voter is in fact what was stored as the ballot image. ([6], Appendix C, page 7 – or page 38 of the PDF)

The State has effectively redefined “accuracy” in a voting system as making a correct electronic copy of a review screen. This is not an appropriate definition, since it deems as accurate machines that display arbitrarily wrong information on the summary screen, so long as the machines faithfully copy the incorrect summary screen to storage. A more common-sense definition of accuracy is included in the Federal Voluntary Voting Systems Guidelines, Volume 1, paragraph 2.1.2.c:

Record each vote precisely as indicated by the voter and produce an accurate report of all votes cast.

As was pointed out in Section 2.1.6, interactions between users and a system can often lead to inaccurate results, and such interactions may well explain the the CD13 problem. But the State’s report clearly indicates their lack of interest in such problems. For example, if the machine changed a vote and the voter failed to notice the error on the review screen, then the State does not consider it an inaccuracy of the machine, even though the machine (in this hypothetical case) would clearly be at fault. For example, the iVotronic write-in bug mentioned in Section 4.6 does not fall within the scope of problems the State tested for, and would only have been caught during testing by accident, if it were caught at all.

Although the State’s tests were not *designed* to find problems in the vote capture process, it is possible that some problems could have been caught serendipitously. We’ve only been able to identify two sentences in the final audit report directly stating conclusions about vote entry errors. Given this small amount of discussion, it appears that anomalies in behavior did not trigger much curiosity by the State’s investigators.

The parallel tests including a review of the parallel test videos did not reveal or identify any latent issues associated with vote selection or the accuracy of the touch screens’ tabulation of the votes cast. ([6], page 5)

. . . In addition, attempts to replicate the published reports concerning voter difficulties in making or changing their vote selections did not materialize during this test. ([5], page 8)

There is no explanation of which “latent issues” were eliminated from consideration, nor even a detailed discussion of what anomalies may have been found and determined to be inconsequential.

We viewed several hours of test voting on videos taken by the State of their testing. During our observation we noted several instances of vote selections not registering the first time the screen was touched. It is difficult to judge from the videos, but it appears that the time required to touch the screen before a vote registers is not consistent, and it is clear that some of the test voters had more trouble getting their votes to register than other voters; this could have been due to differences in how the voters operated the machines, or it could have been due to differences in the machines, themselves. This was not mentioned as a “latent issue” in the State’s final audit report.

3.2 Test procedure issues

There were several procedural problems with the State’s testing, resulting in a constrained and artificial testing scenario. Insights into the causes of the CD13 undervote may have been missed as a result. Problems could have been missed because the tests failed to reproduce accurately the conditions under which the undervotes could occur.

If the undervote was caused by an interaction between the voters and a machine problem, it may not have been detected during testing because the test voters were casting votes in abnormal ways in an abnormal environment. Likewise, if a system malfunction (such as lost votes in the CD13 race) could only be reproduced under a specific combination of inputs and other conditions, it would be unlikely that the State's tests would have generated that combination of conditions.

The **test scripts** were inappropriate, leading to extremely artificial inputs that bore little resemblance to real voting. The test script for each machine was derived from actual votes cast in the election. However, unnatural "vote patterns" were specified for the CD13 race; the vote patterns were originally specified in the Parallel Test Summary Report [5] and later corrected in the Final Audit Report [6]. There are two patterns for casting Buchanan votes, two patterns for casting undervotes in the CD13 race, and six patterns for casting Jennings votes. In each pattern, an initial selection was made for one of the candidates or no candidate, and then the test voter backed up (in one of two ways) to change the vote to the desired final value.

The actual scripts used to test 8 of the 10 machines are available on the Florida Division of Elections website ("Script and Review Screen Checklists"), but only the first two of the six Jennings patterns were used. In these scripts, *not one test vote started with an initial selection of Buchanan*. All votes, including the Buchanan votes, were cast by first selecting Jennings or by abstaining in the Congressional race. Although Buchanan was selected first in some cases on the *ad hoc* machines,⁴ only a small number of tests could have been performed when Buchanan was selected first.

The **screen calibrations** were not examined. Problems stemming from calibration problems would only have been caught if the few machines tested were so grossly out of calibration that blatant errors happened to occur during test voting (see Section 2.1.3). *The State made no attempt to determine which machines were or were not properly calibrated.*

The **screen angle** was incorrect. ES&S iVotronic machines are unusual, relative to other touch-screen machines, in that the screen is typically mounted flat on a table, parallel to the floor, where other voting machines typically elevate the screen such that it is angled to face the voter more directly. During testing, the iVotronic machines were attached to a wall, hanging vertically. As a direct result, *any effects that may have resulted from the screen angle would not be observed.*

The **test volunteers** were a small group drawn from the staff of the Secretary of State's office. The voters were being video recorded and had a second person assisting and checking their work, so it is likely that they were much more careful in everything they did than real voters. In addition, the same people voted on the machines for many hours, and undoubtedly became practiced at tailoring their inputs to avoid any problems with the machines.

Unfortunately, the State's tests would be unlikely to detect a wide variety of problems. If a system bug was triggered only with a certain vote pattern, not included in the test scripts, it might not be detected. Likewise, if poor screen calibration interacts with the way a finger might touch or graze a horizontal screen, this effect would not manifest itself on a vertical screen. Voting tests must mimic the actual voting as closely as possible in order to maximize the chances of discovering problems.

⁴This fact was communicated to us by Dan McCrea of Miami, Florida, who viewed the DVDs for the testing of the *ad hoc* machines.

3.3 Recommendations for additional tests

Additional tests are needed for vote selection and vote capture issues, including the steps of voting that precede reviewing a summary screen. Most of these tests could be conducted with substantially less effort than has already been expended in the State's mock election, simply by directing effort to the most important questions. Since user interaction plays such an important role in many of the voter complaints and hypotheses for what went wrong, those issues should be explored much more thoroughly in the testing. Testing should be directed by specific complaints about the behavior of the voting machines, and observation and analysis of the tests should note any occurrences that might be related to vote selection or capture problems. Factors such as screen angles should duplicate the usage of the machines in the election as closely as possible.

With modest effort, a broader range of volunteers could be asked to enter votes, not for a full day as in the mock election, but for 30 minutes each, without long waits between the votes. These test voters could be asked to vote however they wish, and, after an initial few votes, given an opportunity to do whatever they can think of to try to "confuse" the machines. A wider range of volunteers would be more likely to provide more varied inputs to the machines, and to react to the machines in more varied ways (including reactions that could explain the undervoting). To find user interaction problems, all unexpected behavior, such as difficulty selecting candidates, selection of incorrect candidates, unexplained timing variation in the user interface, and so on, should be documented and investigated in more depth. Without the constraints of the artificial scripts and long delays in the mock election, much more thorough testing could occur with much less effort.

Experts should also test the systems. For this, all entries on the ballots and many different combinations of votes should be systematically tested. Testers should be able to follow up with new tests immediately if the machine reacts in an unexpected way to a previous test.

Machine calibration issues should be explored by direct inspection of the iVotronic systems. An operator, with a pointed stylus, could press at various points on the screen and photographs or video could be used to determine whether there are calibration errors.

Interface timing complaints should be tested much more systematically. Testers should explore factors affecting vote selection. Tests should include touching the buttons on the screen for various lengths of time to understand the delays imposed by the smoothing filter, noting whether those delays are consistent with any variations in voter demographics, voter behavior, ballot design, voting machine calibration, or other related factors. Special attention should be paid to whether, under any circumstances, delays in updating the displayed selections occur. Any unexpected events should be noted and investigated further, including reinspecting the source code to explain any non-deterministic behavior.

With more resources, an academic-quality user test could be performed as described in Section 2.1.4. Such a test would probably be more costly and time-consuming than everything else we have proposed in this report, but it may be the only route to a definite answer about the effects of ballot design on the CD13 undervote.

4 INSPECTING THE SYSTEM DESIGN AND IMPLEMENTATION

The State commissioned a group of academic computer scientists to perform an analysis of the source code to the ES&S iVotronic machine with the intent of determining whether a software bug may have contributed to Sarasota's high undervote rate [14] (hereafter, the "SAIT report"). The SAIT report found numerous serious problems, including a vulnerability that would allow for the creation of a voting machine virus that might be able to spread from one voting machine to another. Many details, along with many other "unrelated" bugs found, were reserved for appendices that were released neither to the general public nor to the plaintiffs. The SAIT report considered a number of different hypotheses as to how software flaws

may have led to the undervote rate and dismissed them all. The report contained numerous caveats that its analysis could well have overlooked subtle flaws, but the report is being treated by many as conclusively closing the door to further analysis.

In some ways, the analysis in SAIT report is very impressive. The analysis of security issues in the software is especially deep. However, as Section 2 points out, there is more to inspect than just the software's source code.

The primary deficiency in the State's software investigation is its defined scope, as was also the case in the State's parallel testing. There were many aspects of the system design and implementation that were not studied at all, as is clearly explained in the SAIT report. The authors spent very little time doing hands-on experimentation on actual iVotronics. The authors are very careful to be explicit about the scope of their work, and to state their many unverified assumptions. However, these caveats have been lost in the press reports, and, in some cases, even in the latter sections of their own report.

There were also gaps in the software analysis, usually stemming from failure to probe sufficiently deeply into specific areas of interest, or from failure to link the source-code analysis with other aspects of the investigation. Specifics are discussed below.

4.1 Build environment

The SAIT team was given source code for the system, and was able to experiment with iVotronic systems that were purported to be running executable code built from that source code. However, the SAIT team did not build the executables, themselves, from the source code.

The Firmware Compilation Environment. We assume that the tools used to build the firmware from the source code:

1. Worked correctly;
2. Comply with the ANSI C programming language standard;
3. Do not have any bugs or unexpected behavior.

We assume that the firmware image provided to us was compiled correctly from the source code provided to us. We also assume that the firmware image provided to us was the firmware image that was actually executed by the iVotronic machines on Election Day. These assumptions imply that the executable software executed by the iVotronic systems during the election matched the source code we examined. As our study focused *only* on the source code, we did not attempt to reconstruct the executable firmware image. Both ES&S and FLDoS told us that the firmware compilation environment worked correctly. (SAIT report, p. 18)

The lack of a build environment rendered the investigation unable to answer several important questions. First, was the binary executable that ran on the machines consistent with the source code? If not, the explanation for the CD13 undervote may lie in the discrepancy between the executable binary and the source code. Perhaps the source code, as held in escrow by the state, was inconsistent with the compiled binaries. The SAIT team had no way to verify this, further rendering them unable to determine if either malicious behavior or simple bugs might be in the binary executable that are not represented in the source code. (Turing laureate Ken Thompson famously demonstrated the feasibility of malicious attacks where the source code did not correspond to the compiled executable [13].)

More importantly, the inability to build and execute the software limits the ability of the source-code review team to perform a thorough examination. For example, a common analysis technique is to instrument the source program to print or log interesting events, thus improving the examiner's understanding of the

progression of events that occur as the code executes. Likewise, code can be instrumented to carefully study the interaction between the code and the hardware, possibly detecting flaws in the hardware itself. Furthermore, portions of the voting software could be extracted from the main application and executed in a “test harness” where their behavior could be systematically studied. Techniques such as these can identify subtle flaws in the voting system, whether from software or hardware, any of which could have been relevant to the Sarasota undervotes. The SAIT team was unable to utilize these analysis techniques.

4.2 Calibration error

Examination of the source code is important for understanding how the calibration process works internally, how finger-presses are converted to coordinates, and what consequences there might be if an iVotronic is poorly calibrated. Unfortunately, calibration issues were dismissed without a detailed analysis (SAIT report, p. 48). Doing this examination properly would require analysis of the source code as well as instrumentation of actual iVotronic machines to understand the stream of data events that are generated by touches on the screen, particularly with different parts of the finger and pressing at different angles. The SAIT team never attempted to instrument an iVotronic machine in this fashion. Such an effort would require building customized versions of the iVotronic software (see Section 4.1, above).

4.3 Smoothing filter

The quotation from the ES&S memo about the smoothing filter in Section 2 raises a number of questions. The memo claims that the effects of the smoothing filter will vary from machine to machine, yet if the smoothing filter is implemented purely in software, identical on every iVotronic, there should be no variation in its behavior from one iVotronic machine to the next, or from time to time. As we discussed in Section 2.1.5, non-determinism is a sign of potential bugs, and, in this case, inconsistent behavior may cause unpredictable problems for the voters. The SAIT report briefly addressed this issue:

A smoothing filter is a mathematical procedure for damping transient touch screen effects such as the voter altering the position of her finger or changing the pressure exerted by the finger on the screen. The allegation has been floated on Internet newsgroups that the iVotronic touch screen filter could have caused the undervote. No explanation has been offered how the effect would confine itself to a single race on a single screen. The touch screen filter does not act differently on different screens. (SAIT report, p. 48)

The SAIT report does not contain a detailed analysis of the software that performs the smoothing filter, e.g., to see whether it might have bugs or otherwise might interact with other parts of the iVotronic software in an unexpected fashion; there is only the paragraph quoted above. Likewise, it’s unclear how the smoothing filter interacted with Sarasota’s voters. If the smoothing filter caused voters’ genuine presses on the screen to be ignored and the voter went on without verifying their selection, then it is inappropriate to blame the voter when the machine’s design is at fault (see Section 2.1.2).

4.4 Non-deterministic behavior

When computer software has latent bugs, these bugs often fail to manifest themselves during normal use and testing. Even when such bugs do manifest, they may not do so in a consistent fashion. Often referred to as “Heisenbugs,” a pun on Heisenberg’s Uncertainty Principle, it can be quite challenging to locate and repair these bugs. Common causes of Heisenbugs include the use of uninitialized memory, the overflowing of buffers (whether accidental or malicious), or the lack of anticipating some error or exceptional state. The

SAIT report has a redacted appendix that claims to detail a large number of bugs that are “unrelated” to Sarasota’s undervotes, but they may in fact be relevant.

Of particular note is the unusual design of the iVotronic’s software. In modern computer system design, an *operating system* runs on the hardware, handling the hardware devices’ needs, including servicing interrupts and doing input/output operations. Then, *applications* run above the operating system, which provides applications with a simpler, more abstract view of the hardware. An application might then say “give me the next key press” without having to know anything about how that key press is acquired and interpreted. The iVotronic software is constructed in a fashion more consistent with DOS software from the early 1980’s (see the SAIT report, Section 6.3). All operating system-like functionality is handled directly within the iVotronic software, which runs directly on the hardware. This means that error-prone and sensitive operations are happening within the main voting application.

Analyzing software built in this fashion for correctness requires significant effort. The SAIT report describes, for example, the way that global state must be correctly handled:

We then attempted to verify that all such variables were declared as “volatile,” so that the compiler would not perform unsafe optimizations (e.g., suppression of apparently-redundant load and store operations) on them. Most of the asynchronously updated global variables were not declared to be volatile, but we do not believe this mattered with the particular compiler used on the iVotronic software. That is, with there being so many cases, if the compiler performed optimizations of the kind that would be unsafe on these variables: (a) the results would probably have been detected in testing; (b) the probability of failure would have been uniform over time, affecting all races with equal probability; (c) the failures would be exhibited in ways other than just undervotes. (SAIT report, page 33)

It’s insufficient to state that such problems “would probably have been detected in testing” when so many other problems were clearly not detected in testing. Likewise, there is no reason to assume that such failures would happen uniformly and in ways beyond causing undervotes. Doing this sort of analysis properly would require examination of the actual machine code, generated by the compiler, to see whether it does or does not operate in a safe fashion. Furthermore, the iVotronic software could be executed using debugging or simulation tools that could potentially detect when such problems occur (detailed above in Section 4.1).

The SAIT report then goes on to discuss the various kinds of global state variables in use in the program and the conditions under which they would be safe to use. In addition to examining the source code, it might be appropriate to add new code to the system that deliberately changes the same global variables, or systematically simulates interrupts occurring at various times. If such artificially induced failures lead to undervotes, that would then suggest that genuine failures could also have the same result. This technique is similar in philosophy to a powerful testing methodology called “fuzz testing,” which involves feeding random inputs to a program and then running it to see how it fails. *The SAIT report explicitly disclaimed the use of analysis techniques such as fuzz testing and the use of debugging or simulation tools.*

Finally, it might be the case that there are hardware-dependent problems with iVotronic systems, which might well manifest themselves in a non-deterministic fashion. Felten discusses such issues with Diebold’s system [4], where a design flaw related to the precise timing of electrical events on the motherboard ultimately led Diebold to replace the motherboards of 4700 Maryland voting machines. None of the analyses yet performed on Sarasota’s iVotronic systems have considered the possibility of similar failures. Such problems are difficult to validate, although ES&S may have become aware of such issues in the past and upgraded their hardware designs to address the concern. To the best of our knowledge, the SAIT authors did not have access to internal ES&S documents that might have illuminated this issue, nor did they make any attempt to determine whether the iVotronic hardware, itself, may have suffered from intermittent faults.

4.5 Buffer overflows and viruses

The SAIT report describes how the software engineering practices used to create the iVotronic system leave it vulnerable to a variety of security attacks:

[T]he iVotronic software copies a variable-length nul-terminated (C-style) string from the ballot definition file into a fixed-size stack-allocated buffer. If the string in the ballot definition is too long, this will overflow the bounds of the fixed-size buffer and overwrite other parts of memory. An attacker could use well-known techniques to exploit this bug, inject malicious code into the address space of the iVotronic machine, and cause the processor to begin executing that malicious code. At this point, the attacker has complete control over the iVotronic: the iVotronic is infected.

We found numerous instances of this type of bug. Misplaced trust in the election definition file can be found throughout the iVotronic software. We found a number of buffer overruns of this type. The software also contains array out-of-bounds errors, integer overflow vulnerabilities, and other security holes. They all arise due to the fundamental architectural flaw of misplaced trust. (SAIT report, p. 57)

The report goes on to detail how a virus could be engineered to spread from one machine to the next via the PEBs (personal electronic ballots), normally used throughout the voting day to activate the machines for each voter. *The SAIT authors made no attempt to examine the actual iVotronic machines, PEBs, CompactFlash cards, or any other materials for evidence of such an attack.*

During the state's parallel tests (see Section 3), the state additionally selected a handful of machines, extracted the EEPROMs containing the iVotronic's software, and used standard commercial tools to compare these binary images to the binary images on file with the State. No discrepancies were found, although it would be reasonably straightforward for viruses to overwrite themselves to remove evidence of their presence. To the best of our knowledge, the state's examination did not look at PEBs or the CompactFlash cards used in the election. *While we have no other evidence to suggest that a virus-based attack may have occurred, neither the state's parallel tests nor the SAIT report made an effort sufficient to rule viruses out of consideration.*

Buffer overflows can occur even without the presence of malicious code. The damage caused by such buffer overflows, if and when they occur, could have a variety of ill effects on the voting system. A number of commercial tools have been developed to identify and repair buffer overflow issues. By using these tools, an examiner could detect if these problems manifested themselves during actual election conditions.

4.6 Bug tracking and version control

ES&S, like any modern software firm, can be presumed to use modern software development and management tools. Most notably, they must certainly use a *version control system* and a *bug tracking system*. Version control systems allow for all changes to the software to be tracked. If a developer introduces a change that caused problems, the change could be easily identified, undone, and repaired. In a sense, a version control system would allow an examiner to turn the clock forward and backward on ES&S's development efforts, observing changes made beforehand and afterward to the source code used in Florida. When such changes are made, it is also standard practice to annotate those changes to explain what happened (e.g., "fixed bug with calibration"). The code changes and the annotations would provide valuable insight into the processes used to develop the iVotronic system.

In a similar fashion, any modern software development process will include a system to track issues. Consider a hypothetical bug discovered by an ES&S customer and reported to the vendor. The report will

be stored in a database and assigned a tracking number. Subsequent reports may be assigned their own tracking number or may be merged with the original. Bugs are then typically assigned to developers who repair the software. Bug tracking systems often allow developers to discuss possible approaches toward repairing these bugs, retaining these discussions as a record of the developers' thought processes. Also, bug tracking numbers can then be referenced in the source code, inside comments that are read by developers but ignored by the compiler (e.g., "we're doing extra work here on the calibration step to address bug #345"). Bug tracking numbers may also be referenced in the version control system's annotations. All of this data would provide valuable insight into the development process. *The SAIT authors had no access to ES&S's bug tracking system or version control system.*

Given that Florida is running a relatively old version of the iVotronic software (version 8.0.1.2 versus North Carolina's version 9.1.2.0), it's entirely possible that bugs germane to the undervote rate in Florida may have been repaired in the newer version 9 variants of the iVotronic software. Appropriate access to ES&S's internal development processes would greatly assist an examiner in understanding whether such relevant bugs has already been discovered and repaired.

Consider, for example, a recently disclosed bug in the newer version of the iVotronic's software that is used in North Carolina and several other states. The problem occurs under unknown conditions, a small percentage of the time, and could fail to capture the intent of the voter by denying him or her the chance to cast a write-in vote. ES&S notified North Carolina of this serious software flaw in its version 9.1.2.0 iVotronic firmware (reproduced in full in Appendix A), stating:

The item affecting the iVotronic voting system is a firmware issue which affects the way the iVotronic displays a write-in candidate. The firmware issue is limited to iVotronic version 9.1.2.0 and occurs two to three percent of the time when the iVotronic is being used. When the error is present, the iVotronic does not display a choice for a voter to write-in a candidate's name for a particular office. The display allows a voter to select from the list of predetermined candidates but occasionally may not include a line for a voter to write-in a candidate.

The same issue was discussed in Pennsylvania's amended certification for the iVotronic system [2].⁵ This write-in bug, as stated, may not have caused the undervote rate observed in Sarasota. However, this bug may well be the tip of a larger iceberg. If this bug existed in the newer version of the iVotronic software, perhaps the same bug, or some variant on it, existed in the older iVotronic software used in Sarasota. Since ES&S was aware of this bug in their newer software, perhaps they were also aware of related bugs in the software used in Sarasota. An examination of ES&S's internal records would greatly aid the process of uncovering such problems. A thorough examination would look at the steps taken by ES&S to address the write-in bug, among other bugs, and would then examine whether these bugs had an effect in Sarasota.

5 CONCLUSIONS AND RECOMMENDATIONS

Without doubt, the undervote rate in Sarasota County's general election in November 2006 reflected a failure of the ES&S iVotronic systems to accurately capture the intent of many Sarasota voters. While Sarasota County, the State of Florida, and its academic computer science experts have performed certain analyses, we still have no conclusive evidence demonstrating the cause or causes of the unusual undervote rate.

We recommend additional expert analysis of the source code for these voting systems, including debugging and simulation tests which may be more likely to trigger latent flaws if they are present. We likewise

⁵Michael Shamos, one of the co-authors of the SAIT report, also does voting system analysis for the Commonwealth of Pennsylvania, so the SAIT authors were certainly aware of this issue, despite not raising it in their report.

recommend that experts be given unrestricted access to ES&S's internal bugs databases and software repository, where they may find additional evidence that could lead to the discovery of what software bugs, if any, contributed to Sarasota's undervote rate.

We also recommend further analysis of the iVotronic systems used in the election and still sequestered in a Sarasota warehouse. We recommend that a sampling of these machines be carefully examined for evidence of screen miscalibration and touch sensitivity.

These analyses could be performed by a relatively small number of experts in about a month's time. Should such analyses be able to conclusively determine a reproducible explanation for the undervotes, this would have significant ramifications, both for the ongoing legal battle between the two parties for control over Florida's 13th Congressional District seat, as well as for the broader discussion of how voting machines should be designed, tested, certified, and analyzed.

ACKNOWLEDGMENTS

The authors gratefully acknowledge feedback received from our colleagues who reviewed drafts of this report, including Peter Neumann and Dan McRae. We also thank Joyce McCloy of the North Carolina Coalition for Verified Voting for the documents she located.

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A ES&S LETTER TO NORTH CAROLINA

March 14, 2006

VIA ELECTRONIC MAIL
AND OVERNIGHT DELIVERY

Mr. Keith Long
NC State Voting Systems Project Manager
State Board of Elections
6400 Mail Service Center
Raleigh, NC 27699-6400

Dear Mr. Long:

Pursuant to Section 163-165.9A(4) of the North Carolina General Statutes, Election Systems & Software, Inc. (“ES&S”) must provide the North Carolina State Board of Elections (the “Board”) with notice of any relevant defect which has occurred in its voting system that will be used in the State of North Carolina (the “State”). In accordance with such notice requirements, ES&S is providing this letter to the State to notify it that ES&S has become aware of two items which could potentially affect the function of the ES&S Model 100 precinct tabulator (“Model 100”) and the ES&S iVotronic touchscreen system (“iVotronic”). ES&S has addressed each item and has taken the necessary corrective measures to limit any affect the items may have on the State’s ability to conduct its elections. The issues affecting the relevant voting systems and the corrective measures ES&S has taken are outlined below.

The item affecting the ES&S Model 100 is limited in scope to the PCMCIA cards used to load the election definition into the Model 100s. ES&S has identified a batch of PCMCIA cards which were not properly manufactured and as a result may cause the Model 100 battery to “drain” more rapidly than normal. ES&S has identified the customers who may have received the PCMCIA cards from the affected batch and are in the process of working with each customer to verify if the PCMCIA cards are working properly. As the State was one of the customers identified by ES&S as potentially receiving PCMCIA cards from the affected batch, ES&S has notified the State of the issue and has been working with officials from the State to ensure the PCMCIA cards delivered to the State work correctly. To date, ES&S has provided the State with one thousand (1,000) PCMCIA cards which currently reside at the State’s warehouse. No PCMCIA cards have been delivered to counties within the State and ES&S has instructed its staff in the State not to send out any PCMCIA cards to any county until the cards have been thoroughly tested to ensure they are operating properly. ES&S will continue to work with the State to ensure that only proper functioning PCMCIA cards are delivered to the counties within the State.

The item affecting the iVotronic voting system is a firmware issue which affects the way the iVotronic displays a write-in candidate. The firmware issue is limited to iVotronic version 9.1.2.0 and occurs two to three percent of the time when the iVotronic is being used. When the error is present, the iVotronic does not display a choice for a voter to write-in a candidate’s name for a particular office. The display allows a voter to select from the list of predetermined candidates but occasionally may not include a line for a voter

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to write-in a candidate. ES&S has addressed this issue in its latest version of iVotronic firmware, version 9.1.4.0 that is included in Unity Release 3.0.1.0. Unity Release 3.0.1.0 has been successfully tested by an Independent Testing Authority ("ITA") and is awaiting National Association of State Election Directors approval.

It has recently been brought to ES&S' attention that there may be a number of counties in the State conducting local school board elections which will require the use of the write-in option on the iVotronic. Should the State wish to upgrade its Unity software to version 3.0.1.0 which includes the iVotronic write-in firmware enhancement, please advise at your earliest convenience and ES&S will begin the necessary steps to accomplish this upgrade in time for the May primary. ES&S has included a copy of the 3.0.1.0 ITA completion letter and the final full-text test report on CD to be delivered via overnight courier to your attention. Please note that the Model 100 Precinct Scanner and Model 650 Central Count Scanner firmware versions remain unchanged in 3.0.1.0. They are identical to the versions already certified for use in North Carolina.

If you have any questions or need additional information, please contact me directly.

Sincerely,

Timothy J. Hallett, Esq.

cc: Aldo Tesi - President and Chief Executive Officer, ES&S
Eric A. Anderson, Esq. - General Counsel, ES&S
Gary Crump - Chief Operating Officer, ES&S
Ken Carbullido - Senior Vice President, ES&S
Mac Beeson - Account Services Manager, ES&S
Steve Pearson - Vice President Certification, ES&S

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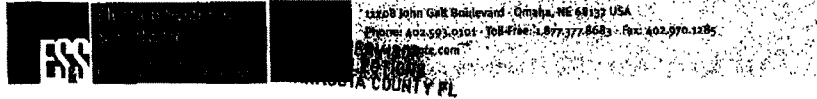
EXHIBIT B

2637

03/14/07 WED 12:10 FAX 941 881 8809

ELECTIONS SARASOTA CNTY

002



2006 AUG 22 A 8 52

August 15, 2006

Dear FL Users:

FILED FOR RECORD
KATHY BENT

It has come to our attention after a number of inquiries from several of our IVotronic 12 inch screen users that some of your screens are exhibiting slow response times. After receiving some of these terminals in our Omaha, NE facility we were able to replicate a slow response during our testing.

After further analysis of the issue it has been determined that touchscreens on units with previous versions of firmware did not exhibit this condition. Therefore, our Engineering and Development Teams reviewed the differences in firmware code for versions 8.0.1.2 and 7.4.5.0 to establish the possible cause of this condition.

We have determined that the delayed response time is a result of a smoothing filter that was added to IVotronic firmware versions 8.x and higher. This smoothing filter waits for a series of consistent touchscreen reads before a candidate name is highlighted on the ballot. In some cases, the time lapse on these consistent reads is beyond the normal time a voter would expect to have their selection highlighted. This delayed response to touch may vary from terminal to terminal and also may not occur every single time a terminal is used.

The improvement will require an update to the firmware, and state-level certification. We have already taken steps to make the necessary changes to the firmware. Our plans are to certify this in the state of Florida in time for use for the November, 2006 General Election. This firmware upgrade would not involve any Unity software changes or upgrades to any other component of your voting system. This firmware change is only necessary for the 12" size IVotronic screens.

In order to avoid any potential issues at the polls on September 5th, it is our recommendation that you train your poll workers and voters to expect this slightly delayed response time for their highlighted selections. We have included with this mailing a sample voting booth instruction sign for your review and use.

It is important to note that this delayed response time in no way affects the integrity or reliability of the IVotronic voting system. All votes will be recorded securely and accurately as they always have been. No other functionality within the IVotronic system is compromised or affected by this issue.

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03/14/07 WED 12:20 FAX 941 881 8809

ELECTIONS SARASOTA CNTY

003

It is our goal and focus at ES&S to provide secure, accurate and reliable voting systems to all of our clients worldwide. On behalf of ES&S, I can assure you that we are working with the Florida Division of Elections to rectify this situation and to prevent it from being an issue in all other future elections.

We will keep you posted on our developments as we work through the necessary phases of implementing this firmware in our 12" Ivotronic screen counties in Florida.

Thank you for continued support.

Sincerely,

Linda Bennett
Regional Account Manager

Cc: David R. Drury, Chief, Bureau of Voting Systems Certification

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EXHIBIT C

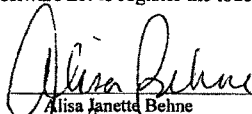
**AFFIDAVIT CONCERNING FAILURE OF VOTING MACHINE AND
INTENT TO VOTE FOR CHRISTINE JENNINGS**

STATE OF FLORIDA
COUNTY OF SARASOTA

Before me personally appeared Alisa Janette Behne who after being duly sworn, deposes, and says:

1. My name is Alisa Janette Behne and I have personal knowledge of the matters set forth herein.
2. My date of birth is August 17, 1963, and I am otherwise competent.
3. I am a qualified elector of the state of Florida residing at 3500 Bayou Louise Lane, Sarasota, Florida 34242.
4. I voted at Precinct 136, New Life Worship Center, 2105 Worrington Street, Sarasota, Florida, on or about November 7, 2006 at about 9:30 a.m.
5. My intent was to cast a ballot for Christine Jennings for United States Congress, Florida District 13.
6. I went through the ballot making my selections on the Iivotronics touch screen voting machine and took my time making sure that I voted in every race. I am certain that I cast a vote for Christine Jennings. When I reviewed the ballot at the end of the voting process, I noted that the race for the 13th Congressional District between Vern Buchanan and Christine Jennings indicated that I had made no selection. I double-touched the 13th Congressional District race and again cast my vote for Christine Jennings. I reviewed my ballot a second time and noted that my ballot indicated my selection for Christine Jennings. I then hit the "vote" button.
7. I have more than 15 years experience in selling computer systems, five of those years are in selling touch screen systems. Based on my experience, I believe there was a software "bug" in the voting machine software causing the software not to register the touch.

FURTHER AFFIANT SAYETH NOT.


 Alisa Janette Behne

SWORN TO and SUBSCRIBED before me this 11th day of November, 2006, by Alisa Janette Behne who is personally known to me or who has produced FL Driver's License # as identification and who took an oath.

3500-010-63-797-1
expires 8/17/2010


 Deborah R. Woodson
 Notary Public



Deborah R. Woodson
 MY COMMISSION # DD156473 EXPIRES
 November 27, 2006
 BONDED THRU TECH FARM INSURANCE, INC.

JENNINGS - 00160

**AFFIDAVIT CONCERNING FAILURE OF VOTING MACHINE AND
INTENT TO VOTE FOR CHRISTINE JENNINGS**

STATE OF FLORIDA
COUNTY OF SARASOTA


Before me personally appeared, LEON W GRZYMALA, JR. who after being duly sworn,
deposes, and says:

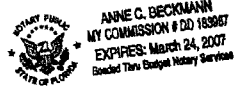
1. My name is LEON W GRZYMALA, JR. and I have personal knowledge of the matters set forth herein.
2. My date of birth is 06-20-1948. I am over eighteen (18) years of age and I am otherwise competent.
3. I am a qualified elector of the state of Florida residing at 1104 Twin Laurel Boulevard, Nokomis, FL 34275.
4. I voted at King's Gate at approximately 10:30 am on November 7, 2006.
5. My intent was to cast a ballot for Christine Jennings for United States Congress, Florida District 13.
6. When I voted on the iVotronics machine I was being very methodical. When I voted in the Buchanan-Jennings race, I specifically voted for Christine Jennings and checked to make sure that the box was checked before I went to the next page. When I got to the review screen it reflected no vote was cast for the Congressional race, but both candidates' names were shown. All of my other selections were properly recorded. I touched where it said no vote had been cast and it took me back to the Buchanan-Jennings race. I then re-voted for Christine Jennings and carefully re-checked the review page three times. I then pushed the vote button. No report was made to the poll worker. Prior to voting, the poll worker recommended that I check the review page before casting my final ballot. I am a registered Republican and I believe these machines failed democracy.

FURTHER AFFIANT SAYETH NOT.


LEON W GRZYMALA, JR.

SWORN TO and SUBSCRIBED before me this 11 day of November, 2006, by LEON W GRZYMALA, JR. who is personally known to me or who has produced FL Driver's License G625-539-48-220-0 as identification and who took an oath.


Notary Public



JENNINGS - 00444

**AFFIDAVIT CONCERNING FAILURE OF VOTING MACHINE AND
INTENT TO VOTE FOR CHRISTINE JENNINGS**

STATE OF FLORIDA
COUNTY OF SARASOTA

Before me personally appeared, Jane B. Archer who after being duly sworn,
deposes, and says:

1. My name is Jane B. Archer and I have personal knowledge of the matters set forth herein.
2. My date of birth is May 30, 1937. I am otherwise competent.
3. I am a qualified elector of the state of Florida residing at 7724 Castleisland Drive, Sarasota, Florida 34240.
4. I voted at the Gulf Gate library Station in Sarasota, Florida. I voted before Nov. 7, 2006 in the early voting period.
5. My intent was to cast a ballot for Christine Jennings for United States Congress, Florida District 13.
6. I took a sample ballot, which I had previously filled out to the polling place and my intention was to vote in every race. I believed that I voted for Christine Jennings, but when I came to the review screen it said I had not cast a vote in the Congressional race. I walked over to a poll worker and asked what to do. She got someone to come with her and I think she explained to use the back arrow. I used the back arrow and it took me back to Congressional race and I recorded a vote for Christine Jennings. I believe that after that the review screen came up again and indicated I had voted in each race.

I used my fingertip to vote.

FURTHER AFFIANT SAYETH NOT.

Jane B. Archer
Jane B. Archer

[Name]

Jane B. Archer

SWORN TO and SUBSCRIBED before me this 11 day of November, 2006, by Jane B. Archer
who is personally known to me or who has produced
FL driver's license AB26-442-37-690-0 as identification and who took an
oath.

Anne C. Beckmann
Notary Public



ANNE C. BECKMANN
MY COMMISSION # DD 183967
EXPIRES: March 24, 2007
Bonded Three Budget Notary Services

JENNINGS - 00168

**AFFIDAVIT CONCERNING FAILURE OF VOTING MACHINE AND
INTENT TO VOTE FOR CHRISTINE JENNINGS**

STATE OF FLORIDA
COUNTY OF SARASOTA

Before me personally appeared, Elizabeth Allen. who after being duly sworn, deposes, and says:

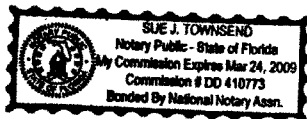
1. My name is Elizabeth Allen and I have personal knowledge of the matters set forth herein.
2. My date of birth is 3-19-1955 and I am otherwise competent.
3. I am a qualified elector of the state of Florida residing at 4053 Bay Shore Road, Sarasota, Florida 34234
4. I voted at Precinct 49 ,Bay Shore Mennonite Church., Sarasota,Florida, on November 7, 2006 at approximately 8:30 am.
5. My intent was to cast a ballot for Christine Jennings for United States Congress, Florida District 13.

6. When my husband and I voted on the iVotronics touch screen voting machines, I was told by a poll worker to be sure and check the District 13 Congressional Race because several voters, even at that early hour, had complained that they had voted for Christine Jennings, but the summary page did not reflect their votes for Christine Jennings. I went through the ballot carefully and made my selections, and when I reviewed my summary page, it showed a vote for Christine Jennings. However, I am not at all confident that my vote was actually counted once I pressed the "vote" button. In addition, my husband was not warned by a different poll worker to be careful with the race, or to check his summary page.

FURTHER AFFIANT SAYETH NOT.

Elizabeth Allen
Elizabeth Allen

SWORN TO and SUBSCRIBED before me this 12th day of November, 2006, by Elizabeth Allen. who is personally known to me or who has produced FL DL A450 225-25-599-0 as identification and who took an oath.



Sue J. Townsend
Notary Public

JENNINGS - 00169

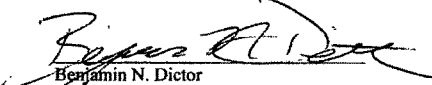
**AFFIDAVIT CONCERNING FAILURE OF VOTING MACHINE AND
INTENT TO VOTE FOR CHRISTINE JENNINGS**

STATE OF FLORIDA
COUNTY OF SARASOTA

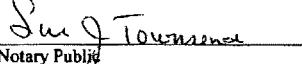
Before me personally appeared, Deward Dwaine Arney, who after being duly sworn, deposes, and says:

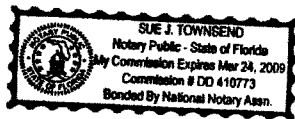
1. My name is Benjamin N. Dictor and I have personal knowledge of the matters set forth herein.
2. My date of birth is February 15, 1987. I am over eighteen (18) years of age and otherwise competent.
3. I am a qualified elector of the state of Florida residing at 4017 Arrow Ave., Sarasota Fl 34232.
4. I voted at the Ascension Lutheran Church on or about November 7, 2006.
5. My intent was to cast a ballot for Christine Jennings for United States Congress, Florida District 13.
6. When I voted on the ivotronics touch screen voting machine I touched the screen for Christine Jennings and it showed I voted for Christine Jennings. But when I reviewed the summary page at the end of the ballot, it did not show a vote for Christine Jennings or anyone else. I had to return to the selection page to re-vote after which the Summary Page reflected my vote for Christine Jennings.

FURTHER AFFIANT SAYETH NOT.


Benjamin N. Dictor

SWORN TO and SUBSCRIBED before me this 12th day of November, 2006, by Benjamin N. Dictor who is personally known to me or who has produced Florida Drivers # D236-074-87-055-0 as identification and who took an oath.


Notary Public



JENNINGS - 00166

**AFFIDAVIT CONCERNING FAILURE OF VOTING MACHINE AND
INTENT TO VOTE FOR CHRISTINE JENNINGS**

STATE OF FLORIDA
COUNTY OF SARASOTA

Before me personally appeared, Reinhardt Christian Badow. who after being duly sworn, deposes, and says:

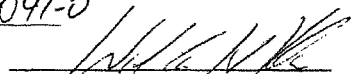
1. My name is Reinhardt Christian Badow. and I have personal knowledge of the matters set forth herein.
2. My date of birth is February 1, 1951. I am over eighteen (18) years of age and otherwise competent.
3. I am a qualified elector of the state of Florida residing at 2816 Michigan Street, Sarasota, Florida, 34237.
4. I voted at precinct 110 at the Suncoast Center for Independent Living on 2989 Fruitville Road in Sarasota on November 7, 2006 at approximately 3:30 p.m.
5. My intent was to cast a ballot for Christine Jennings for United States Congress, Florida District 13.
6. The polling place was not busy when I arrived. There was no wait. A poll worker took me over to the machine and asked me if I needed any instructions. There was no warning or mention of any problems however, I was aware there may be a problem with the Congressional vote based on various media reports. I went through the ballot and specifically remember voting for Christine Jennings. When I arrived at the review screen, there was no candidate selected for the Congressional vote. I called a poll worker over and explained the situation she told me that I did not "press hard enough" when selecting the vote and I then returned to the vote screen and re-cast my ballot, I then confirmed it on the review screen.

FURTHER AFFIANT SAYETH NOT.

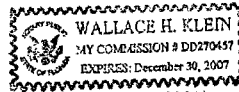

Reinhardt Christian Badow

SWORN TO and SUBSCRIBED before me this 13th day of November, 2006, by Reinhardt Christian Badow who is personally known to me or who has produced as identification and who took an oath.

DL # B300-723-51-041-0


Notary Public

JENNINGS - 00455



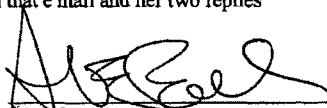
AFFIDAVIT CONCERNING FAILURE OF VOTING MACHINE AND INTENT TO VOTE FOR CHRISTINE JENNINGS

STATE OF FLORIDA
COUNTY OF SARASOTA

Before me personally appeared, Alan E. Bandler who after being duly sworn, deposes, and says:


1. My name is Alan E. Bandler and I have personal knowledge of the matters set forth herein.
2. My date of birth is July 4, 1930
3. I am a qualified elector of the state of Florida residing at 1241 Gulf of Mexico Drive Unit 407 Longboat Key Florida.
4. I voted early at downtown Sarasota Supervisor of elections on or about November 1st, 2006.
5. My intent was to cast a ballot for Christine Jennings for United States Congress, Florida District 13.
6. When I voted on the touch screen voting machine I touched the screen voting for Christine Jennings and when I reached page 15, the summary page, it indicated that I had not voted for Jennings. I immediately called this to the attention of a poll worker who showed me how to go back and vote for Jennings. I followed her instructions and again voted for Jennings. It did appear on the summary screen this time and I hope was duly registered. Following my experience I sent an email to Kathy Dent and attach that e mail and her two replies

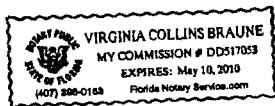
FURTHER AFFIANT SAYETH NOT.



[Name]

SWORN TO and SUBSCRIBED before me this 12 day of November, 2006, by [Name] who is personally known to me or who has produced B534-005-30-2440 as identification and who took an oath.

B534-005-30-2440

 Notary Public



JENNINGS - 00467

**AFFIDAVIT CONCERNING FAILURE OF VOTING MACHINE AND
INTENT TO VOTE FOR CHRISTINE JENNINGS**

STATE OF FLORIDA
COUNTY OF SARASOTA

Before me personally appeared, Ruth Mason Barger who after being duly sworn,
deposes, and says:

1. My name is Ruth Mason Barger and I have personal knowledge of the matters set forth herein.
2. My date of birth is December 8, 1922, and I am otherwise competent.
3. I am a qualified elector of the state of Florida residing at 565 Sanctuary Drive, B406, Longboat Key 34228.
4. I voted at the in Longboat Key Town Hall, 501 Bay Isles Rd., Longboat Key on or about Tuesday, November 7, 2006 at 7:15 am.
5. My intent was to cast a ballot for Christine Jennings for United States Congress, Florida District 13.
6. When I voted on the ivotronics touch screen voting machine I touched the screen and voted for Christine Jennings for U.S. Congress Florida District 13. When I reviewed my ballot before hitting the red button and actually voting, I saw the review screen did not show a vote for Christine Jennings. I was afraid I would lose my other votes if I tried to go back and correct the problem, so I then went ahead and cast my ballot without confirming that the machine had registered my vote for Christine Jennings. It bothered me, and I thought I was mistaken until read the papers the next day.

FURTHER AFFLIANT SAYETH NOT.

Ruth Mason Barger
 Ruth Mason Barger

SWORN TO and SUBSCRIBED before me this 11 day of November, 2006, by Ruth Mason Barger who is personally known to me or who has produced

FL Driver's License #
B626-773-22-948-0
expires 12/8/2010

Deborah R. Woodson
 Notary Public

JENNINGS - 00484

 Deborah R. Woodson
 MY COMMISSION # DD156473 EXPIRES
 November 27, 2006
 SECURED THRU TROY FARM INSURANCE, INC.

**AFFIDAVIT CONCERNING FAILURE OF VOTING MACHINE AND
INTENT TO VOTE FOR CHRISTINE JENNINGS**

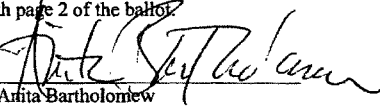
STATE OF FLORIDA
COUNTY OF SARASOTA

Before me personally appeared, Anita Bartholomew, who after being duly sworn, deposes, and says:

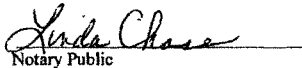
1. My name is Anita Bartholomew and I have personal knowledge of the matters set forth herein.
2. I am older than 18 years of age and I am otherwise competent to make this affidavit.
3. I am a qualified elector of the state of Florida residing at 4237 Sarasota Avenue, Sarasota, FL 34234.
4. I voted on November 7, 2006 at Precinct 49 at my regular voting place at the Bay Shore Mennonite Church on Myrtle and Bay Shore.

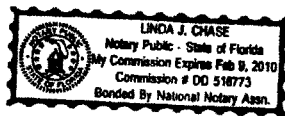
5. I attempted to vote for Christine Jennings in the District 13 race and experienced the following difficulties: I was well-aware of the difficulties in the early voting in the District 13 race and so I carefully voted in each election on the ballot, including that race. When I got to the review page, my vote for Christine Jennings was not reflected. I called out to a poll worker to alert them that my vote in the District 13 race had not been recorded. The poll worker who came to assist me informed me that the same thing had happened to her when she had voted earlier. She guided me back to the District 13 page and I pressed the touch screen to again reflect my vote for Christine Jennings. The poll worker then guided me back to the review page where my vote in the District 13 race was reflected and I then pressed the vote button. At no time prior to my voting did any poll worker discuss with me the problems with page 2 of the ballot.

FURTHER AFFIANT SAYETH NOT.

x 
Anita Bartholomew

SWORN TO and SUBSCRIBED before me this 12 day of November, 2006, by Anita Bartholomew who is personally known to me or who has produced a Florida Drivers License as identification and who took an oath. #


Notary Public



AFFIDAVIT CONCERNING FAILURE OF VOTING MACHINE AND
INTENT TO VOTE FOR CHRISTINE JENNINGS

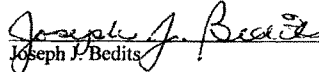
STATE OF FLORIDA
COUNTY OF SARASOTA

Before me personally appeared, Joseph J. Bedits who after being duly sworn, deposes,
and says:

1. My name is Joseph J. Bedits and I have personal knowledge of the matters set forth herein.
2. My date of birth is January 9, 1943 and otherwise competent.
3. I am a qualified elector of the state of Florida residing at 2083 Wood Hollow Lane, Sarasota, FL 34235.
4. I voted at Precinct No. 116 on or about November 7, 2006.
5. My intent was to cast a ballot for Christine Jennings for United States Congress, Florida District 13.


6. When I voted on the ivotronics touch screen voting machine, I went through the ballot to vote. I was being careful because I seemed to have to press hard for my votes to register. In addition, I knew to be careful because my wife had been to vote previously and had overheard some women who had a problem voting discussing their problems with the machines. They were different machines. A neighbor also told me that she had encountered six different people who had a problem with the voting machines. When the review sheet came up it said that I had not voted in the Congressional race even though I knew I had voted for Christine Jennings. I went back and registered my vote again and this time it indicated that I had voted for Ms. Jennings on the review screen.

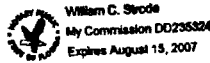
FURTHER AFFIANT SAYETH NOT.


Joseph J. Bedits

SWORN TO and SUBSCRIBED before me this _____ day of November, 2006, by
Joseph J. Bedits who is personally known to me or who has produced
Fla Drivers License as identification and who took an oath.

332-490-43-009-0


Notary Public



JENNINGS - 00089

**AFFIDAVIT CONCERNING FAILURE OF VOTING MACHINE AND
INTENT TO VOTE FOR CHRISTINE JENNINGS**
STATE OF FLORIDA
COUNTY OF SARASOTA

Before me personally appeared, Celia Catlett, who after being duly sworn, deposes, and says:

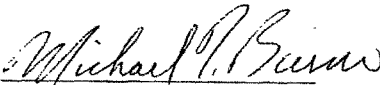
1. My name is Celia Catlett and I have personal knowledge of the matters set forth herein.
2. My date of birth is December 27, 1936 and I am otherwise competent.
3. I am a qualified elector of the state of Florida residing at 3624 Country Place Lane, Sarasota, Florida 34233.
4. I voted early at Precinct 83, located at the North Sarasota Library, 2801 Newtown Boulevard, 34234, on October 24, 2006
5. My intent was to cast a ballot for Christine Jennings for United States Congress, Florida District 13.
6. When I voted with the stylus on the ivotronics touch screen voting machine, I am absolutely sure the box for Christine Jennings showed the X. On the Review screen however, Christine Jennings' name showed but the box beside her name was blank. I clicked on the review ballot and corrected my vote and it then showed an X beside her name. After that, I registered my vote with the Red Vote button at the top of the screen. After voting, I asked my husband if anything unusual happened when he voted (on a different machine). He told me that when he reviewed his ballot, the box by Christine Jennings' name was blank and he had to correct it. At that time, I reported this to a poll worker named Charlie, who said he would report it.

FURTHER AFFIANT SAYETH NOT.

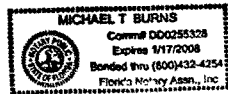


Celia Catlett

SWORN TO and SUBSCRIBED before me this 11th day of November, 2006, by Celia Catlett who is personally known to me or who has produced a Florida Drivers License as identification and who took an oath. C343-110-36-967-0



Notary Public



JENNINGS - 00073

AFFIDAVIT CONCERNING FAILURE OF VOTING MACHINE AND INTENT TO VOTE FOR CHRISTINE JENNINGS

STATE OF FLORIDA
COUNTY OF SARASOTA

Before me personally appeared, Patricia Jones Eatough who after being duly sworn, deposes, and says:

1. My name is Patricia Jones Eatough and I have personal knowledge of the matters set forth herein.
2. My date of birth is June 8, 1955 and otherwise competent.
3. I am a qualified elector of the state of Florida residing at 1827 East Leewynn, Sarasota, FL 34240.
4. I voted at Precinct 132 on or about November 7, 2006.
5. My intent was to cast a ballot for Christine Jennings for United States Congress, Florida District 13.
6. I had heard prior to going to the poll that there were problem with the voting machines. When I went to vote, the poll worker also warned me that there had been problems with the machine registering the Congressional race. When I voted on the ivotronics touch screen voting machine, I voted for Christine Jennings. The screen indicated I had voted. Yet when I got to the end, the review page indicated I had not voted in the Congressional race. I went back and voted for Ms. Jennings. This time my vote did register on the voting page.

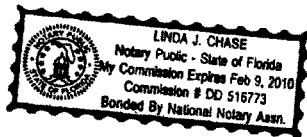
FURTHER AFFIANT SAYETH NOT.

Patricia Jones Eatough
Patricia Jones Eatough

SWORN TO and SUBSCRIBED before me this 12 day of November, 2006, by Patricia Jones Eatough who is personally known to me or who has produced Drivers License as identification and who took an oath.

E 320-690-55-708-0

Linda Chase
Notary Public




**AFFIDAVIT CONCERNING FAILURE OF VOTING MACHINE AND
INTENT TO VOTE FOR CHRISTINE JENNINGS**

STATE OF FLORIDA
COUNTY OF SARASOTA

Before me personally appeared, TERESA GRZYMALA who after being duly sworn,
deposes, and says:

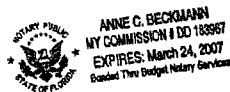
1. My name is TERESA GRZYMALA and I have personal knowledge of the matters set forth herein.
2. My date of birth is 04-20-1950. I am over eighteen (18) years of age and I am otherwise competent.
3. I am a qualified elector of the state of Florida residing at 1104 Twin Laurel Boulevard, Nokomis, FL 34275.
4. I voted at King's Gate at approximately 10:30 am on November 7, 2006.
5. My intent was to cast a ballot for Christine Jennings for United States Congress, Florida District 13.
6. When I voted on the iVotronics machine I took my time to be sure I did not make any errors. When I voted in the Buchanan-Jennings race, I specifically voted for Christine Jennings and checked to make sure that the box was checked before I went to the next page. When I got to the review screen it reflected no vote was cast for the Congressional race. All of my other selections were properly recorded. I touched where it said no vote had been cast and it took me back to the Buchanan-Jennings race. I then re-voted for Christine Jennings and I then pushed the vote button. No report was made to the poll worker.

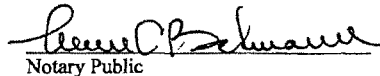
FURTHER AFFIANT SAYETH NOT.



 TERESA GRZYMALA

SWORN TO and SUBSCRIBED before me this 11 day of November, 2006, by
TERESA GRZYMALA who is personally known to me or who has produced
FL Drivers License # G625-800-50-622-0 as identification and who took
an oath.





 Notary Public

**AFFIDAVIT CONCERNING FAILURE OF VOTING MACHINE AND
INTENT TO VOTE FOR CHRISTINE JENNINGS**

STATE OF FLORIDA
COUNTY OF SARASOTA


Before me personally appeared, PEDRO M. GALAN who after being duly sworn,
deposes, and says:

1. My name is PEDRO M. GALAN and I have personal knowledge of the matters set forth herein.
2. My date of birth is January 5, 1945, and I am otherwise competent.
3. I am a qualified elector of the state of Florida residing at 1080 Peppertree Lane, Sarasota, Florida 34242.
4. I voted at Gulf Gate Library on October 31st, 2006. No poll worker issued instructions with regard to the Congressional race.
5. My intent was to cast a ballot for Christine Jennings for United States Congress, Florida District 13.
6. When I voted on the ivotronics touch screen voting machine I touched the screen for Christine Jennings and it showed I voted for Christine Jennings. But when I reviewed the summary page at the end of the ballot, it not only failed to show a vote for Christine Jennings, but the only name to appear on the review page was Christine Jennings, next to a blank box indicating no vote had been cast. I called a poll worker over and explained what had happened, and the poll worker pulled back the page for the Congressional race. I revoted for Christine Jennings, and my vote appeared to register in my second review of the summary screen.

FURTHER AFFIANT SAYETH NOT.


PEDRO M. GALAN

SWORN TO and SUBSCRIBED before me this 11th day of November, 2006, by PEDRO M. GALAN, who is personally known to me or who has produced Florida Driver's License No. 9450-673-45-0005-0 as identification and who took an oath.

9450-673-45-0005-0
expires 11/5/2012 
Notary Public



Deborah R. Woodson
MY COMMISSION # DD156473 EXPIRES
November 27, 2006
SIGNED BY THE TRUST FARM INSURANCE, INC.

JENNINGS - 00126

**AFFIDAVIT CONCERNING FAILURE OF VOTING MACHINE AND
INTENT TO VOTE FOR CHRISTINE JENNINGS**

STATE OF FLORIDA
COUNTY OF SARASOTA

Before me personally appeared, Joan Estelle Lowery who after being duly sworn,
deposes, and says:

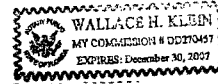
1. My name is Joan Estelle Lowery and I have personal knowledge of the matters set forth herein.
2. My date of birth is June 14, 1949. I am over eighteen (18) years of age and otherwise competent.
3. I am a qualified elector of the state of Florida residing 1315 Landings Drive, Sarasota, Florida 34231.
4. I voted at precinct 15, at Trinity United Methodist Church on Halley Ave, Sarasota, Florida, on November 7, 2006 at approximately 6:00 p.m.
5. My intent was to cast a ballot for Christine Jennings for United States Congress, Florida District 13.
6. It was not busy when I arrived at the voting location and there was no wait. I had heard earlier media reports and was aware there were some problems with the machines. When I arrived, I specifically asked if there had been problems and I was told no issue or problems had arisen. I voted for Christine Jennings on a touch screen and when I arrived at the review page the Congressional vote was left blank. I called a poll worker over at that time and she showed me how to move back and I re-cast my vote for Christine Jennings. On the final review page I confirmed my vote was cast. I approached a poll worker to complain about the situation and filled out a complaint card.

FURTHER AFFIANT SAYETH NOT.

Joan Estelle Lowery
Joan Estelle Lowery

SWORN TO and SUBSCRIBED before me this 13th day of November, 2006, by Joan Estelle Lowery who is personally known to me or who has produced as identification and who took an oath.

Joan Estelle Lowery
L600-485497140 *Wallace H. Klein*
Notary Public



JENNINGS - 00589

2655

EXHIBIT D

LIST OF PROPOSED ITEMS FOR PANEL SUBPOENAS

The following items are needed to conduct a comprehensive, balanced, and speedy investigation into this contested election. After each item, the entities that are believed to possess the item and therefore could be subpoenaed for the item are indicated in square brackets, using the following abbreviations: *C* for the Sarasota County Supervisor of Elections' Office in Sarasota, Florida; *S* for the Florida Department of State (and its Division of Elections) in Tallahassee, Florida; and *E* for Election Systems & Software, Inc. ("ES&S"), in Omaha, Nebraska. The numbers of items specified below would allow the subpoenaed materials to be divided into three equivalent sets and then distributed among the Panel, Ms. Jennings's expert team, and Mr. Buchanan's expert team.

1. Sixty (60) of the ES&S "iVotronic machines" used in the November 2006 election in Sarasota County and referred to in Paragraph 1-A of the Stipulation Agreement that Florida Circuit Judge William L. Gary approved on February 21, 2007 [hereinafter "the Stipulation Agreement"], along with the carrying cases, power adaptors, and other apparatus to set up the voting booths for these iVotronic machines. The Panel will select the 60 iVotronic machines, by serial number, from the list of iVotronic machines attached to the Stipulation Agreement as "Exhibit A." [C]
2. One hundred and twenty (120) of the ES&S personal electronic ballots ("PEBs") used in the November 2006 election in Sarasota County and referred to in Paragraphs 1-A and 1-D of the Stipulation Agreement. The Panel will select the 120 PEBs, by serial number, from the list of PEBs attached to the Stipulation Agreement as "Exhibit B." [C]
3. Sixty (60) of the ES&S Master PEBs and all twelve (12) ES&S Qualification PEBs used in the November 2006 election in Sarasota County. [C]
4. All "[compact] 'flash cards'" referred to in Paragraph 1-A of the Stipulation Agreement and used in the November 2006 election in Sarasota County in connection with the 60 iVotronic machines specified above, in Paragraph 1 of this list. [C]
5. Three full copies, delivered in electronic form on CD-ROMs, of all "software" referred to in Paragraph 1-A of the Stipulation Agreement and used in the November 2006 election in Sarasota County in connection with the 60 iVotronic machines specified above, in Paragraph 1 of this list. [C]
6. All "hard drives" referred to in Paragraph 1-C of the Stipulation Agreement (except for the "new hard drives for the March 2007 Election"), plus two complete bit-for-bit copies of each of those hard drives, along with the passwords and other information needed to read them. (The Panel could keep the original hard drives and distribute the copies to the two parties' expert teams.) [C]

7. Three complete bit-for-bit copies of the “back-up of all information on the server used to collect and store the votes” in the November 2006 election in Sarasota County, referred to in Paragraph 1-C of the Stipulation Agreement, along with the passwords and other information needed to read the backed-up information. [C]
8. Three standard ES&S Communications Packs (containing three thermal printers and all necessary cabling). [C]
9. Three PEB readers/serial port interfaces for transferring data from an ES&S PEB to a standard personal computer. [C]
10. Three full copies, in electronic form, of all files that were loaded onto any or all of the 60 iVotronic machines (specified above, in Paragraph 1 of this list) and/or onto any or all of the PEBs (specified above, in Paragraphs 2 and 3 of this list) as part of the “ballot programming” or “ballot definition” or “election generation” process, for early voting and/or for Election Day voting, including but not limited to ballot-definition files and audio files, for the November 2006 election in Sarasota County. [C, S]
11. Three full copies of all items (including but not limited to software and documentation) that were provided to the Florida State University-SAIT team to assist the team in producing the report entitled “Software Review and Security Analysis of the ES&S iVotronic 8.0.1.2 Voting Machine Firmware,” issued by the Florida Department of State on February 23, 2007. [C, S, E]
12. Three full copies of the unredacted Appendices E, F, and G to the report entitled “Software Review and Security Analysis of the ES&S iVotronic 8.0.1.2 Voting Machine Firmware,” issued by the Florida Department of State on February 23, 2007. [S]
13. Three full copies of all items (including but not limited to software and documentation) that were provided to the team that produced the report entitled “Audit Report of the Elections Systems and Software, Inc.’s iVotronic Voting System in the 2006 General Election for Sarasota County, Florida,” issued by the Florida Department of State on February 23, 2007. [C, S, E]
14. Three full copies of all ES&S source code and binary software images to the iVotronic system, the PEBs, and the Unity election-management system, used in the November 2006 election in Sarasota County, in the same electronic form that ES&S’s developers use. [S, E]
15. Three full copies, in electronic form, of all documentation and technical documents packages for the ES&S products and source code specified above, in Paragraph 14 of this list, including but not limited to all user manuals, operator manuals, training materials, and other documentation related to the use, operation, or maintenance of any part of ES&S’s iVotronic system, ES&S’s Unity system or any of its elements, and ES&S’s PEBs, that were used in the November 2006 election in Sarasota County. [C, S, E]
16. Three full copies of all documentation and tools necessary to extract and read the “three redundant memories” contained within each ES&S iVotronic machine used in the November 2006 election in Sarasota County. [C, S, E]

17. Three computers loaded with the entire ES&S Unity system used in the November 2006 election in Sarasota County fully installed, along with the passwords and other information needed to operate the installed software. Each computer's hardware configuration (including memory and hard-disk size) should meet or exceed the specifications of the computer that the Sarasota County Supervisor of Elections' Office used in November 2006 to run the ES&S Unity system. [E]

18. Three computers loaded with the following software and data fully installed, along with the passwords and other information needed to operate them:

- full copies of all source code to "all software versions" (that is, ES&S's complete software version repository, regardless of whether the versions were used in Sarasota County or elsewhere) of ES&S's iVotronic and Unity systems since January 1, 2000 (whether or not they have been submitted to an "independent testing authority" and/or to the Florida Division of Elections' Bureau of Voting Systems Certification), and instructions for how to retrieve, and determine the date of, each of the software versions in this repository;
- full copies of the build environment actually used by ES&S's developers to create, debug, test, and ultimately ship distributions of all software versions of ES&S's iVotronic and Unity systems since January 1, 2000; and
- full copies of ES&S's bug-tracking or issue-tracking database for all software versions of ES&S's iVotronic and Unity systems since January 1, 2000. [E]

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EXHIBIT E

**IN THE CIRCUIT COURT FOR THE SECOND JUDICIAL CIRCUIT
IN AND FOR LEON COUNTY, FLORIDA
CIVIL DIVISION**

CHRISTINE JENNINGS, nominee of the
Democratic Party for Representative in
Congress from the State of Florida's
Thirteenth Congressional District,

Plaintiff,

Case No.: 2006 CA 2973

vs.

ELECTIONS CANVASSING COMMISSION OF
THE STATE OF FLORIDA; SARASOTA COUNTY
CANVASSING BOARD; KATHY DENT, as
SARASOTA COUNTY SUPERVISOR OF ELECTIONS;
SUE M. COBB, as SECRETARY OF STATE OF THE
STATE OF FLORIDA; DAWN K. ROBERTS, as
DIRECTOR OF THE DIVISION OF ELECTIONS OF
THE STATE OF FLORIDA; VERN BUCHANAN, as
nominee of the Republican Party for Representative in
Congress from the State of Florida's Thirteenth
Congressional District; and ELECTION SYSTEMS
& SOFTWARE, INC.,

Defendants.

ELLEN FEDDER, LANCE JONES
ERNEST LASCHE a/k/a MIKE LASCHE,
BARBARA KLEIN, LOIS HARMES,
JOHN MINDER, DOVIE MURRAY,
JOHN MCBRIDE, SUSAN GAAR,
GARY LAMER, CHARLES CLIFTON,

Plaintiffs

Case No.: 2006 CA 2996

vs.

TOM GALLAGHER, CHIEF
FINANCIAL OFFICER, *et al.*

Defendants.

[PROPOSED] PROTECTIVE ORDER

Good cause having been shown, and in order to facilitate necessary discovery in this case, IT IS HEREBY ORDERED that this Protective Order pursuant to Rule 1.280(c) be, and is hereby, entered.

1. This Protective Order shall be applicable to any trade secret owned by Defendant Election Systems & Software, Inc. ("ES&S"). A trade secret is defined by Florida's Uniform Trade Secrets Act, Section 688.002(4)(a), Florida Statutes, as "information, including a formula, pattern, compilation, program, device, method, technique, or process that: (a) [d]erives independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable by proper means by, other persons who can obtain economic value from its disclosure or use; and (b) [i]s the subject of efforts that are reasonable under the circumstances to maintain its secrecy."

2. Any trade secret produced by any party as part of discovery in this action may be designated as "Confidential" by such party and may be disclosed or otherwise communicated or made available in whole or in part only to the following persons:

a. Counsel of record in this litigation and in other proceedings related to the November 2006 general election, and staff and supporting personnel of such attorneys, such as paralegals, secretaries, stenographic and clerical employees and contractors, and outside copying imaging and presentation services, who are working under the direction of such attorneys;

b. The parties herein and the parties in other proceedings related to the November 2006 general election who are necessary for the furtherance of this litigation or such other proceedings;

c. Persons who are expressly retained or sought to be retained by a party or a party's counsel as consultants or testifying experts; provided that the disclosure of "Confidential"

material to any persons under this subparagraph shall only be to the extent necessary to perform their work on this litigation or other proceedings related to the November 2006 general election.

d. Any other persons who are designated to receive material designated “Confidential” by order of this Court after notice to the parties, or by written stipulation of the parties.

e. Any person of whom testimony is taken in this action or in other proceedings related to the November 2006 general election.

f. The Court and Court personnel, court reporters, interpreters and videographers employed in connection with this litigation or other proceedings related to the November 2006 general election.

3. Each person set forth in Paragraph 2 who is not (i) a party to this litigation or other proceedings related to the November 2006 general election, counsel for such parties, or staff and supporting personnel of such parties or attorneys; or (ii) the Court or Court personnel to whom material designated under this Protective Order is to be disclosed, shall, prior to receiving such material, be furnished with a copy of this Protective Order, and a copy of the Nondisclosure Agreement Pursuant to Protective Order (attached as Exhibit A), which the person shall read and sign.

4. The recipient of any material designated under this Protective Order shall use reasonable efforts under the circumstances to maintain the confidentiality of such information.

5. A party shall not be obligated to challenge the propriety of material designated under this Protective Order at the time the designation is made, and failure to do so shall not preclude a subsequent challenge thereto. In the event that any party to this litigation disagrees at any stage of these proceedings with such designation, such party may request that the

designating party modify or remove its designation or may request from the Court a hearing at the Court's earliest convenience. The burden of proving that information has been properly designated under this Protective Order is on the person or entity making such designation.

6. All counsel for the parties who have access to information or material designated under this Protective Order acknowledge they are bound by this Protective Order and submit to the jurisdiction of the Court for purposes of enforcing this Protective Order.

7. Within sixty (60) days after the final termination of litigation between the parties, including this action and all other proceedings related to the November 2006 general election, all material designated under this Protective Order and all copies thereof (including summaries and excerpts) shall be either returned to the party that produced it or destroyed and a certification of destruction supplied to the producing party; provided, however, that for each party, counsel who is entitled to access to such designated material may retain complete and unredacted copies of its work product that contains designated material as well as pleadings and papers filed with the Court or served on the other party. This Protective Order shall survive the final termination of this litigation with respect to any such retained confidential material.

SO ORDERED.

Date

The Honorable William L. Gary

EXHIBIT A

NONDISCLOSURE AGREEMENT PURSUANT TO PROTECTIVE ORDER

I, _____, certify that I have read the Protective Order (the "Order") entered in *Jennings v. Elections Canvassing Comm'n of the State of Florida*, Case No. 2006 CA 2973, Circuit Court for the Second Judicial Circuit in and for Leon County, Florida, and that I understand the terms, conditions, and restrictions it imposes on any person given access to Defendant ES&S's trade secrets. I recognize that I am bound by the terms of that Order, and I agree to comply with those terms. I will not disclose Defendant ES&S's trade secrets to anyone other than persons specifically authorized by the Order and agree to return all such materials that come into my possession to counsel from whom I received such materials. I consent to be subject to the personal jurisdiction of the Circuit Court for the Second Judicial Circuit in and for Leon County, Florida, with respect to any proceedings related to the enforcement of the Order, including any proceeding related to contempt of Court.

I declare under penalty of perjury that the foregoing is true and correct and that this undertaking is executed this ____ day of _____, 200__.

Signature: _____

Address:

Phone:

Facsimile:

E-mail:

Employer/Business:

Job Title/Description:

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EXHIBIT F

PETITIONER'S APPENDIX

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7	Voter Plaintiffs' Motion to Consolidate Dases (11/22/06)	A-198
8	Order Granting Motion to Consolidate (11/28/06)	A-204
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10	Plaintiff Jennings' Motion To Compel Production of Items Within the Custody and Control of the State Under Fla. Stat. § 101.5607 and Fla. Admin. Code Rule 1S-2.015(5)(f) (11/30/06)	A-232
11	Plaintiff Jennings' Motion for Entry of a Protective Order and Proposed Protective Order (11/30/06)	A-241
12	Defendant Dent's Response to Plaintiff Jennings' Request for Production of Documents and for Inspection of Tangible Things (12/5/06)	A-254
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16	Plaintiff Jennings' Motion to Compel Production of Items Within the Custody and Control of the Sarasota County Defendants (12/7/06)	A-299
17	Plaintiff Jennings' Opposition to Defendant Election Systems & Software, Inc.'s Motion for Fifteen Days Response Time and an Evidentiary Hearing (12/7/06)	A-352
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20	Transcript of Hearing (12/8/06)	A-414
21	Defendant Dent's Answer to Plaintiff Jennings' First Amended Complaint to Contest Election (12/12/06)	A-464
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CONTESTANT JENNINGS'S SUPPLEMENTAL APPENDIX

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6	Letter from Mr. Jon S. Wheeler to Chairwoman Millender-McDonald re the Court's Refusal to Docket or Consider the Chairwoman's Correspondence (1/9/07)	SA-90
7	Order on Petitioner Jennings's Motion to Expedite and Respondent ES&S's Motion to Strike the Petition (1/24/07)	SA-92
8	Respondent ES&S's Response to Jennings's Emergency Petition for Certiorari (2/9/07)	SA-93
9	Respondent Buchanan's Response to Jennings's Emergency Petition for Certiorari (2/9/07)	SA-153
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11	Petitioner Jennings' Reply Brief to All Respondents (2/20/07)	SA-211
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TAB	DESCRIPTION	PAGE
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15	Voter Plaintiffs' First Set of Requests for Production or Inspection Directed to ES&S (12/11/06)	SA-244
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21	Defendant Buchanan's Response to Plaintiff Jennings's First Request for the Production of Documents (1/2/07)	SA-360
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24	Audit Report of the ES&S iVotronic Voting System in the 2006 General Election for Sarasota County, Florida (2/07)	SA-437

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28	Order on Stipulated Agreement of Parties in the Trial Court re Preservation of Evidence (2/21/07)	SA-505
29	Letter from Chairwoman Juanita Millender-McDonald to Ms. Jennings and Mr. Buchanan re Committee's Consideration of Notice of Contest and Motion to Dismiss (2/6/07)	SA-539

**CONTESTANT JENNINGS'S APPENDIX:
DOCUMENTATION OF VOTING MACHINE MALFUNCTION**

VOLUME I

1. Voters' Sworn Affidavits Concerning Failure of Voting Machines and Intent to Vote for Christine Jennings

VOLUME II

2. Sampling of Election Day "Zone Tech Log Sheets" Completed by Sarasota County Technicians
3. Sampling of Sarasota County Supervisor of Elections Incident Report Forms
4. Sampling of Jennings Campaign Incident Report Forms
5. Sampling of E-mails Received from Voters
6. Sampling of Poll Watcher Incident Report Forms

IN THE
United States House of Representatives

CHRISTINE JENNINGS, *Contestant,*
v.
VERN BUCHANAN, *Contestee.*

**SUPPLEMENTAL APPENDIX TO CONTESTANT JENNINGS'S MEMORANDUM
RESPONDING TO THE HONORABLE CHARLES A. GONZALEZ'S APRIL 3, 2007
LETTER REGARDING THE INVESTIGATION OF THE ELECTION FOR
REPRESENTATIVE IN THE ONE HUNDRED TENTH CONGRESS FROM
FLORIDA'S THIRTEENTH CONGRESSIONAL DISTRICT**

VOLUME I OF II

KENDALL COFFEY
COFFEY BURLINGTON
2699 So. Bayshore Drive, PH1
Miami, FL 33133
(305) 858-2900

MARK HERRON
MESSER, CAPARELLO & SELF, P.A.
2618 Centennial Place
Tallahassee, Florida 32308
(850) 222-0720

DONALD B. VERRILLI, JR.
SAM HIRSCH
JESSICA RING AMUNSON
JENNER & BLOCK LLP
601 Thirteenth Street, N.W.
Washington, DC 20005
(202) 639-6000

April 13, 2007

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Tab 1

Friday, January 05, 2007 3:14 PM

p.02

JUANITA MILLER-MCDONALD, CALIFORNIA
CHAIRWOMAN

Congress of the United States
House of Representatives
COMMITTEE ON HOUSE ADMINISTRATION
1308 Longworth House Office Building
(202) 225-2081
Washington, D.C. 20515-6157
www.house.gov/cha

January 4, 2007

Mr. Jon S. Wheeler
Clerk of the Court
Florida First District Court of Appeal
301 S. Martin Luther King Blvd.
Tallahassee, FL 32399-1850

Re: *Christine Jennings v. Elections Canvassing Commission*, Case No. 1D07-11

Dear Mr. Wheeler:

I am writing in relation to the pending case, *Christine Jennings v. Elections Canvassing Commission*, Case No. 1D07-11, and ask that this letter be filed with the Court in connection with that proceeding.

The House of Representatives has received a Notice of Contest from Christine Jennings, preserving her right to contest in the House, the certified results of Florida's 13th Congressional District election, as she is now doing under Florida law. The responsibility for evaluating any House contest falls to the House Administration Committee, which I chair. As a result, my Committee is closely following the course of the litigation now underway in Florida.

In contested House elections, the House customarily relies on state legal processes to provide a full and fair airing of contested election issues raised by the parties. This allows states the opportunity to fully discharge their Constitutional responsibility to conduct Federal elections. These state proceedings ordinarily enhance the ability of the House to evaluate the merits of any pending election contest. See *Roudebush v. Hartke*, 405 U.S. 15, 92 S.Ct. 804 (1972).

It is therefore of concern that the parties have been unable to agree upon, and that, on December 29th, the lower court declined to order, the requested access to the hardware and software (including the source code) needed to test the contestant's central claim: voting machine malfunction. Now on appeal to your Court is the question of access to this evidence, which bears decisively on the

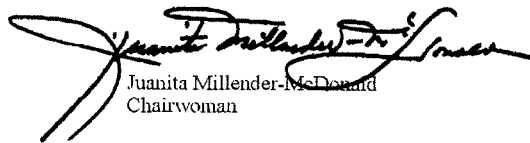
prospect of conclusively establishing who was duly elected on November 7th from this Congressional district.

My purpose here is not to express a position about the technical merits of the competing legal arguments in this evidentiary dispute. My purpose is to point out that, in evaluating an election contest in the House, the House is well served in its own deliberations by having before it a complete record. Consequently, Florida law will facilitate the evaluation of the election contest pending before the House to the extent that it provides access to relevant and critical evidence. I am confident that this can be done in a way that accommodates the valid interests of the parties, and resolution of these issues may obviate the need for the House to address them.

This election contest is, of course, a case of national importance, brought before the Court at a time of serious and mounting concern about the reliability of paperless electronic voting equipment. I am aware that the voters of Sarasota County expressed their doubts on November 7th, when they approved a requirement for voter verified paper balloting and mandatory audits.

Against this background, I am particularly concerned that the public, in Florida and nation-wide, have full confidence that the questions raised by this contest are resolved after consideration of all relevant evidence. It is with this public interest in mind, and also with due consideration for the State's and the House's proper performance of their respective constitutional duties, that I respectfully submit these views to the Court for its consideration.

Sincerely,



Juanita Millender-McDonald
Chairwoman

Cc: See attached Certificate of Service

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a copy of this letter was furnished to the following by United States Mail, this 5th day of January, 2007:

<p>Peter Antonacci Allen C. Winsor GrayRobinson, P.A. P.O. Box 11189 Tallahassee, FL 32302 Telephone: (850) 577-9090 Facsimile: (850) 577-3311 E-mail: pva@grayrobinson.com awinsor@gray-robinson.com <i>Attorneys for State Defendants</i></p>	<p>Ronald A. Labasky Young Van Assenderp, P.A. 225 South Adams Street Tallahassee, FL 32301 Telephone: (850) 222-7206 Facsimile: (850) 561-6834 E-mail: rlabasky@yvlaw.net <i>Attorney for Defendant Supervisor Kathy Dent</i></p>
---	--

<p>Hayden R. Dempsey Glenn T. Burhans, Jr. Greenberg Traurig, P.A. 101 East College Avenue Tallahassee, FL 32301 Telephone: (850) 222-6891 Facsimile: (850) 681-0207 E-mail: dempseyh@gtlaw.com burhansg@gtlaw.com <i>Attorneys for Defendant Vern Buchanan</i></p>	<p>Frederick J. Elbrecht Sarasota County Attorney's Office 1660 Ringling Blvd., Floor 2 Sarasota, FL 34236-6870 Telephone: (941) 861-7272 Facsimile: (941) 861-7267 E-mail: relbrecht@scgov.net <i>Attorney for Defendant Sarasota County Canvassing Board</i></p>
---	--

<p>Reginald J. Mitchell People for the American Way Foundation 1550 Melvin Street Tallahassee, FL 32301 Telephone: (850) 877-0307 Facsimile: (850) 402-1999 E-mail: rmitchell@pfaw.org <i>Attorney for Fedder Plaintiffs</i></p>	<p>Miguel De Grandy P.A. 800 S. Douglas Rd., Suite 850 Coral Gables, FL 33134-2088 Telephone: 305-444-7737 Facsimile: 305-443-2616 Email: mad@degrandylaw.com <i>Attorney for Defendant ES&S</i></p>
--	--

Lowell Finley
 Voter Action
 1604 Solano Avenue
 Berkeley, CA 94707
 Telephone: (510) 318-2248
 Facsimile: (415) 723-7141
 E-mail: lfinley@wvc.com
Attorney for Fedder Plaintiffs

Elliot M. Minberg
 Judith E. Schaeffer
 People for the American Way
 Foundation
 2000 M Street N.W. #400
 Washington, D.C. 20036
 Telephone: (202) 467-4999
 Facsimile: (202) 293-2672
 E-mail: eminberg@pfaw.org
 jschaeffer@pfaw.org
Attorneys for Fedder Plaintiffs

Muslima Lewis
 Randall C. Marshall
 Aziza Naa-Kaa Botchway
 ACLU Foundation of Florida, Inc.
 4500 Biscayne Boulevard, Suite 340
 Miami, FL 33137-3227
 Telephone: (786) 273-2729
 Facsimile: (786) 363-1448
 E-mail: mlewis@aclufl.org
 rmarshall@aclufl.org
 abotchway@aclufl.org
Attorneys for Fedder Plaintiffs

Harry O. Thomas
 Radey Thomas Yon & Clark, P.A.
 P.O. Box 10967
 Tallahassee, FL 32302-2967
 Telephone: 850-425-6654
 Facsimile: 850-425-6694
 Email: hthomas@radleylav.com
Attorney for Defendant ES&S

Cindy A. Cohn
 Matthew J. Zimmerman
 Electronic Frontier Foundation
 454 Shotwell Street
 San Francisco, CA 94110
 Telephone: (415) 436-9333 x127
 Facsimile: (415) 436-9993
 E-mail: cindy@eff.org
 mattz@eff.org
Attorneys for Fedder Plaintiffs

Rebecca Harrison Steele
 Zeina N. Salam
 ACLU Foundation of Florida, Inc.
 West Central Florida Office
 P.O. Box 18245
 Tampa, FL 33679-8245
 Telephone: (813) 254-0925
 Facsimile: (813) 254-0926
 E-mail: rsteele@aclufl.org
 zsalam@aclufl.org
Attorneys for Fedder Plaintiffs

Kendal Coffey
 Florida Bar No. 259861
 COFFEY & WRIGHT, LLP
 2665 South Bayshore Dr.
 PH-2, Grand Bay Plaza
 Miami, FL 33133
 Telephone: (305) 857-9797
 Facsimile: (305) 859-9919
 E-mail: kcoffey@coffeywright.com
Attorney for Christine Jennings

The Honorable William L. Gary
 The Circuit Court for the Second
 Judicial Circuit
 Leon County Courthouse
 301 S. Monroe Street
 Tallahassee, FL 32301

Mark Herron
 Florida Bar No. 199737
 MESSER, CAPARELLO & SELF,
 P.A.
 2618 Centennial Place
 Tallahassee, Florida 32308
 Telephone: (850) 222-0720
 Facsimile: (850) 558-0659
 E-mail: mherron@lawfla.com
Attorney for Christine Jennings

Donald B. Verrilli, Jr.
 Sam Hirsch
 Jessica Ring Amunson
 JENNER & BLOCK LLP
 601 13th Street, NW, Suite 1200
 South
 Washington, DC 20005
 Telephone: (202) 639-6000
 Facsimile: (202) 639-6066
 E-mail: dverrilli@jenner.com
shirsch@jenner.com
jamunson@jenner.com
Attorneys for Christine Jennings



Charles Howell
 Counsel
 Committee on House Administration
 1309 Longworth House Office
 Building
 Washington, D.C. 20515

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Tab 2

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IN THE DISTRICT COURT OF APPEAL
FIRST DISTRICT OF FLORIDA
CASE NO. _____
LT NO. 2006 CA 2973

CHRISTINE JENNINGS,

Petitioner,

v.

ELECTIONS CANVASSING COMMISSION OF THE STATE OF FLORIDA;
SARASOTA COUNTY CANVASSING BOARD;
KATHY DENT, as SARASOTA COUNTY SUPERVISOR OF ELECTIONS;
SUE M. COBB, as SECRETARY OF STATE OF THE STATE OF FLORIDA;
DAWN K. ROBERTS, as DIRECTOR OF THE DIVISION OF ELECTIONS
OF THE STATE OF FLORIDA;
VERN BUCHANAN; and
ELECTION SYSTEMS & SOFTWARE, INC.,

Respondents.

EMERGENCY PETITION FOR A WRIT OF CERTIORARI

On Petition for a Writ of Certiorari to the Circuit Court
of the Second Judicial Circuit, in and for Leon County
Honorable William L. Gary

Kendall Coffey
COFFEY & WRIGHT, LLP
2665 South Bayshore
Drive
PH-2, Grand Bay Plaza
Miami, FL 33133
(305) 857-9797

Mark Herron
MESSER, CAPARELLO &
SELF, P.A.
2618 Centennial Place
Tallahassee, FL 32308
(850) 222-0720

Donald B. Verrilli, Jr.
Sam Hirsch
Jessica Ring Amunson
JENNER & BLOCK LLP
601 13th Street, N.W.
Suite 1200
Washington, DC 20005
(202) 639-6000

Counsel for Petitioner

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INTRODUCTION

This is a rare election-contest case because it involves a race that wasn't even close. According to experts for both sides in this case, about 3,000 more voters in Florida's Thirteenth District intended to cast their ballots for congressional candidate Christine Jennings than for her opponent, Vern Buchanan. But when all the votes were tallied, the official state certification showed Buchanan with a 369-vote winning margin. And it also showed 18,000 "undervotes" — 18,000 ballots with *no* vote for *either* congressional candidate — in Sarasota County, the epicenter of what had been one of the most hotly contested, high-profile U.S. House races in Florida's history. Experts for both sides also agree that these undervotes were *unintended*, the unfortunate consequence of something that went very wrong with Sarasota County's iVotronic electronic touch-screen voting system.

But there, the litigants and their respective experts part company. Jennings, the plaintiff below, contends that the electronic voting machines malfunctioned. Buchanan, one of the defendants, claims that it was the voters who malfunctioned. Jennings alleges that votes legally cast for one candidate or the other were rejected by the machines and misrecorded as undervotes, probably due to a software "bug" not unlike the programming glitches people routinely encounter on their home or office computers. Buchanan alleges that voters, particularly Sarasota's senior

citizens, never actually cast their intended congressional votes, as they simply overlooked Jennings's and Buchanan's names on the electronic touch-screens, and then overlooked the race again when they got to the summary screen at the end of the ballot, and then missed the warning, in bright red letters, saying "No Selection Made."

To prove her case, Jennings moved to compel state and county election officials to produce components of Sarasota's iVotronic system, so that her own computer-science experts could examine and test them. Defendants, exhibiting a disturbing lack of confidence in their own election technology and an even more disturbing lack of concern for the public's trust in our democratic processes, have thrown up the "trade-secret privilege," claiming that Jennings's discovery requests represent a grave threat to the reputation and business interests of the iVotronic system's manufacturer, Election Systems and Software, Inc. (ES&S), a privately held corporation.

Late last Friday, the Circuit Court of the Second Judicial Circuit ruled in favor of ES&S and against a full and fair evaluation of what went wrong in this election. In so ruling, the trial court committed two clear legal errors. *First*, the court applied the wrong legal test when it held that Jennings had not shown a "reasonable necessity" for access to ES&S's trade secrets. The court apparently confused the "reasonable necessity" standard applicable to trade-secret disputes in

discovery with the “reasonable likelihood of success on the merits” standard applicable to motions for temporary injunctions. “Reasonable necessity” must be measured in light of the movant’s need for the material, not her likelihood of ultimately succeeding on her theory of the case — otherwise the court is deciding the merits of the case before discovery can even get underway. Given that a protective order would fully safeguard ES&S’s interests, there was no conceivable reason for denying this discovery. *Second*, the court rested its ruling on a report — which was blatantly inadmissible as hearsay, as its author never took the stand — from the State Defendants’ staff, who purported to have tested a handful of Sarasota County’s iVotronic machines and found them “100% accurate.” But as Jennings’s computer-science expert testified at length, the tests themselves were thoroughly unreliable, as they failed to replicate Election Day conditions in at least a half-dozen key respects.

In the wake of the trial court’s erroneous discovery ruling, Defendants, pleading *voter confusion* as the explanation for the thousands of unintended undervotes, will continue to have all the access they need to Sarasota County’s allegedly confused voters. Plaintiff Jennings, pleading *machine malfunction* as the explanation, will now be denied access to Sarasota County’s allegedly malfunctioning iVotronic machines. Without that access, her ability to develop the facts and present her case will be crippled. And the voters of Florida’s Thirteenth

District will be left with no explanation for what actually happened to 18,000 of their ballots, and no explanation for why they are represented in Congress by the candidate who was their second choice.

Because this is an election-contest case for a public office whose term begins this week and will end in just 24 months, the harm done by the trial court's order cannot be corrected on appeal from the final judgment. Jennings therefore respectfully asks this Court to rule on this Petition on an expedited basis, to quash the trial court's order, and to empower *all* parties to this litigation to get to the bottom of what went wrong in Sarasota County on Election Day 2006.

BASIS FOR INVOKING JURISDICTION

Article V, Section 4(b)(3) of the Florida Constitution grants the District Courts of Appeal jurisdiction to issue writs of certiorari. *See also* FLA. R. APP. P. 9.030(b)(2)(A). The order to be reviewed here was issued on Friday afternoon, December 29, 2006. A 806. This Petition is timely under Rule 9.100(c)(1).

STATEMENT OF FACTS

I. The Statistically Anomalous Undervote Rate in Florida's Thirteenth Congressional District Undermined the Election's Legitimacy.

On November 7, 2006 ("Election Day"), the State of Florida conducted an election for numerous offices, including Representatives in Congress. Appendix at 211 [hereinafter "A"]. Early voting and voting by absentee ballot were permitted for this election (as for all elections in Florida). *Id.* Both for early voting (from

October 23 to November 5) and for Election Day voting (on November 7), Sarasota County used an electronic voting system, called the “iVotronic” touch-screen voting system, manufactured by ES&S, a privately held corporation. *Id.* Sarasota County does not use the iVotronic electronic voting system (or any other electronic voting machines) for absentee balloting. *Id.* For absentee balloting, Sarasota County uses paper ballots read by optical-scanning equipment. *Id.*

The vote tallies for electronic voting and for paper voting were wildly divergent. Nearly 15% of the Sarasota County *electronic* ballots — roughly 18,000 ballots — were reported as “undervotes,” meaning that no vote was recorded for either the Republican candidate, Respondent Vern Buchanan, or the Democratic candidate, Petitioner Christine Jennings. *Id.* at 212. By contrast with the nearly 15% undervote rate for Sarasota County’s *electronic* ballots, only 2.5% of the Sarasota County *paper* ballots in the very same congressional election were recorded as undervotes. *Id.* at 213. Furthermore, in the other counties partly or wholly contained in Florida’s Thirteenth District, the undervote rate in the same congressional election also was only 2.5% — one-sixth the undervote percentage recorded for electronic ballots in Sarasota County. *Id.* And in 2002, in the last midterm congressional election, the undervote rate for Sarasota County’s electronic ballots was only 2.2% — one-seventh the rate recorded in the same county, for the same office, in 2006. *Id.*

II. Contemporaneous Evidence Pointed to Pervasive Malfunctioning of Sarasota County's iVotronic System.

Even before these aberrational returns started coming in on Election Night, eyewitness accounts from hundreds of Sarasota County voters and contemporaneous records from the Sarasota County Supervisor of Elections' office documented that the iVotronic paperless electronic voting machines had systematically failed to record votes cast for candidates in the Thirteenth District congressional race — particularly votes cast for Jennings. A 215-25. For example, one Sarasota County voter filed an affidavit stating:

I went through the ballot making my selections on the iVotronics touch-screen voting machine and took my time making sure that I voted in every race. I am certain that I cast a vote for Christine Jennings. When I reviewed the ballot at the end of the voting process, I noted that the race for the 13th congressional district . . . indicated that I had made no selection. . . . I have more than 15 years experience in selling computer systems, five of those years are in selling touch-screen systems. Based on my experience, I believe there was a software bug in the voting machine software causing the software not to register the touch.

Id. at 216.

Similarly, one poll watcher witnessed precinct poll workers “instruct[ing] voters to hold their finger on the touch-screen for more time, rather than just touch [the] screen to get the vote to register. I heard several voters tell poll workers the iVotronic touch-screen voting machine was not recording their vote.” *Id.* at 224.

And a contemporaneous “Incident Report Form” from the Sarasota County Supervisor of Elections’ office noted that a “voter voted on screen — didn’t show up on review . . . asked poll worker for help . . . [c]ancelled ballot and moved to another machine,” and went on to observe “more than one [voter] with trouble on machine.” *Id.* Another incident report observed that “[e]very other voter is complaining about the Christine Jennings contest not coming up.” *Id.* at 224-25. And a report by a Sarasota County technical-support person indicated that a particular iVotronic machine “will not register votes no matter how hard you press screen.” *Id.* at 225. There literally were hundreds of such reports from voters, poll watchers, election officials, and technical-support personnel. *Id.* at 215-25; *see id.* at 593 (citing “evidence of ballots sometimes not appearing on the screen”); *id.* at 598-99 (citing evidence of “[v]isual problems on the [touch-screen] display”). Indeed, even Mr. Buchanan’s wife reported difficulty voting for her husband, apparently pressing the “Vote” button three times before her vote would register.

III. Jennings Filed This Election-Contest Case, but the Trial Court Denied Her Motion for Expedited Discovery of the iVotronic System.

On November 20, 2006, Christine Jennings filed a complaint under Florida’s election-contest statute, Section 102.168, Florida Statutes, in the Circuit Court of the Second Judicial Circuit, in Leon County, Florida. A 1. The case was later consolidated with a second election-contest action brought by a bipartisan group of eleven individual voters. *Id.* at 204. Defendants in these consolidated cases

included various state and county election officials, as well as congressional candidate Vern Buchanan. *Id.*

Immediately upon filing her complaint, Jennings moved to compel expedited discovery of the hardware, software, and source code for Sarasota County's iVotronic system, which had caused thousands of legal votes cast for her to be incorrectly rejected and recorded as undervotes. *Id.* at 122.¹ (The term "source code" refers to a series of statements or instructions written in a human-readable computer programming language; when converted into machine-readable language, these instructions tell the computer how to operate in myriad situations. *Id.* at 525, 559.)

At the November 21 hearing on Jennings's motion, the State Defendants informed the trial court that the Department of State's Bureau of Voting Systems Certification would conduct and videotape a "parallel test" on five of Sarasota County's 1,500 iVotronic machines. *Id.* at 159. The test would attempt to simulate Election Day conditions and then determine whether the machines

¹ In particular, Jennings sought access to eight iVotronic machines that generated particularly high undervote rates and related iVotronic equipment, as well as the ES&S source code to the iVotronic system, to all elements of ES&S's Unity software suite, and to ES&S's personal electronic ballots (PEBs). She also sought the development tools, scripts, "makefiles," and other software used to compile, debug, and test the iVotronic system, the PEBs, and the elements of the Unity software suite. Jennings sought the hardware from the Sarasota County Defendants and the source code from the State Defendants. A 114. The State is required to keep the source code in escrow. *See* FLA. STAT. § 101.5607(1)(a); FLA. ADMIN. CODE R. 1S-2.015(5)(f).

accurately recorded the test voters' selections. Defendants argued that their own test would suffice to resolve this election contest; Jennings argued that the adversarial system generally and Florida's election-contest statute specifically entitle each candidate to conduct his or her own tests. *See id.* at 142-45.

The trial judge denied Jennings's motion for expedited discovery and instead gave Defendants 15 days to respond to Jennings's discovery requests. *Id.* at 174. The judge also denied without prejudice Jennings's request that the State Defendants produce the source code and stated that the request would not be granted unless Plaintiff found a way to ensure that ES&S (which was not yet a Defendant in the case) would have an opportunity to be heard. *Id.* Finally, he ordered Defendants to allow the two candidates' experts to "observe," but not to participate in, the State's upcoming parallel test. *Id.*; *accord id.* at 179. In doing so, he stated, "I'm sure we will be addressing [Defendants' test] again, because whatever they do is going to be unacceptable to somebody. But it may answer the question, too. I'm sure hoping it will." *Id.* at 174.

IV. Jennings Filed New Motions for Expedited Discovery of the iVotronic System and for an Order Protecting ES&S's Purported Trade Secrets.

Following the trial judge's guidance, Jennings filed an amended complaint naming ES&S as a Defendant. A 206. ES&S invoked the trade-secret privilege and resisted the discovery that Plaintiffs again sought from the State and County Defendants.

Jennings filed new motions to compel. *Id.* at 232, 299. To expedite matters, Jennings took two extraordinary steps: first, for purposes of those motions only, she conceded that ES&S's source code and related technology were privileged "trade secrets"; second, although usually protective orders are sought by the trade secret's *owner*, Jennings herself moved for a protective order to assuage any concerns ES&S might have about its purported trade secrets being disclosed to a business competitor. *Id.* at 241.

On Wednesday, December 6, after Defendants had refused to produce the iVotronic materials, Jennings's counsel contacted the judge's chambers to set a two-hour hearing on her motions to compel, but was told that the next available date on the judge's calendar was nine days away, on December 15. So the hearing was set for the morning of Friday, December 15. *Id.* at 353.

The next day, December 7, ES&S filed a motion seeking to postpone the hearing at least until shortly before Christmas. *Id.* at 271. Counsel for ES&S asked for and was granted a one-hour hearing on its motion the next day, on December 8. At that hearing, the court granted ES&S's motion in part and set an evidentiary hearing for December 19 and 20 on Plaintiffs' motions to compel and motion for protective order. *Id.* at 460-62. The December 15 hearing was subsequently canceled.

Also on December 7, Jennings and the individual voter Plaintiffs filed a joint notice setting a case-management conference for Friday, December 15, and requesting prompt entry thereafter of an expedited scheduling order. *Id.* at 403. Florida Rule of Civil Procedure 1.200(a) makes such conferences mandatory upon any party's "notice," without the need to file a motion. *Id.* at 404. Plaintiffs' joint notice set out a detailed proposed schedule, which Defendants largely agreed to, although they proposed a trial date in mid-February 2007 while Plaintiffs proposed one in late January 2007. *Id.* at 408-09. The joint notice also explained that Florida law gives election contests "priority" status, and therefore they must be expedited under the Florida Rules of Judicial Administration. *Id.* at 404; *see* FLA. STAT. § 102.168(2), (6), (7) (expressly setting expedited deadlines for filing complaints, filing answers, holding hearings, and taking testimony in election-contest cases); FLA. JUD. ADMIN. R. 2.215(g), 2.545(c) (requiring that priority cases be "appropriately advanced on the docket," given "priority in scheduling consistent with its priority case status," and "expedite[d] . . . to the extent reasonably possible"); *see also, e.g., Marina v. Leahy*, 578 So. 2d 382, 384 (Fla. 3d DCA 1991); *Jacobs v. Seminole County Canvassing Bd.*, No. 00-CA-2203-16-L, 2000 WL 1720698, *1 (Fla. Cir. Ct. Nov. 20, 2000).

As described above, the block of time set aside on the judge's calendar for Friday morning, December 15, to hear Jennings's motions to compel, came open

when the judge postponed that hearing to the following week. But the judge ruled from the bench at ES&S's December 8 hearing that no case-management conference would be held on December 15 because "we don't do that." *Id.* at 417. Today, nearly a month and a half after Jennings filed this "priority case" under Florida's election-contest statute, the judge has yet to hold a case-management conference or issue a scheduling order.

V. The Trial Court Held a Two-Day Evidentiary Hearing on Jennings's Motions.

On December 19 and 20, 2006, the trial court conducted a two-day evidentiary hearing on Plaintiffs' motions to produce the iVotronic system's hardware, software, and source code, and on Jennings's related motion for protective order. In the opening statement, Jennings's counsel explained that "[t]he trade-secret privilege is not absolute. In each case the court must weigh the importance of protecting the trade secret against the interests in facilitating the trial and promoting the just end to the litigation. . . . It is Defendants' burden to show that, even with an appropriate protective order, they would still suffer harm." A 525-26. Likewise, ES&S told the judge that he "must ultimately undertake" a "balancing of interest[s] . . . in deciding the issues presented in today's motion. . . . [T]he parties seeking production must . . . show that the necessity for this privileged information outweighs the harm that disclosure will cause to the trade-secret owner." *Id.* at 528-29.

Jennings presented one expert on residual votes (*i.e.*, undervotes and overvotes) and statistical analysis of election data — Professor Charles Stewart, the chair of the Political Science Department at the Massachusetts Institute of Technology (MIT) — and one expert on electronic voting technology — Professor Dan S. Wallach of the Computer Science Department at Rice University. Neither Vern Buchanan nor the governmental Defendants who were the targets of Jennings’s motion to compel presented any witnesses. ES&S presented one expert on elections and voting patterns — Professor Michael C. Herron of the Government Department at Dartmouth College.

A. Professor Stewart’s Expert Political-Science Testimony

Professor Stewart testified on three issues: (1) whether the 2006 congressional undervote in Sarasota County was excessive; (2) whether Jennings would have prevailed over Buchanan absent an excess undervote; and (3) possible causes of the excess undervote. A 531.

1. *The congressional undervote in Sarasota County was excessive.*—

Professor Stewart found a total “excess undervote” of roughly 14,000 congressional undervotes — 12% of all votes cast on Sarasota County’s electronic ballots. *Id.* Sarasota County, Jennings’s political stronghold, accounted for “a bit over half” the district’s total congressional votes, but fully 86% of the district’s congressional undervotes (18,412 out of 21,368 undervotes). *Id.* at 532.

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	<u>Buchanan</u>	<u>Jennings</u>	<u>Undervote</u>
Sarasota County:	58,632	65,487	18,412
The Four Other Counties:	60,677	53,453	2,956
TOTAL:	119,309	118,940	21,368

Id. at 570. Based on a statistical analysis of undervote rates for both paper ballots and electronic ballots in 28 contests on Sarasota County’s November 2006 ballot, Professor Stewart estimated that the “normal undervote” rate for the Thirteenth District congressional race there was roughly 3% (approximately 4,000 votes) and the “excess undervote” rate was roughly 12% (approximately 14,000 votes). *Id.* at 532-34, 549; *see also id.* at 571-72.

2. Jennings would have prevailed over Buchanan absent the excess undervote.— Professor Stewart testified that “Jennings would have won had the excess undervote been reallocated to the two candidates.” *Id.* at 534. His best estimate of her “likely winning margin” was nearly 3,200 votes. *Id.*; *see id.* at 573-75.

Professor Stewart derived that estimate by statistically analyzing the “ballot-image logs” for every individual ballot cast electronically in Sarasota County’s November 2006 general election. *Id.* at 534. Studying voters’ preferences not only for the congressional race but also for the statewide races for U.S. Senator, Governor, Attorney General, Chief Financial Officer, and Agriculture

Commissioner, Professor Stewart determined that the voters whose congressional ballots were recorded as undervotes likely supported Jennings over Buchanan by a margin of approximately 63% to 37%. *Id.* So if the roughly 14,000 “excess” congressional undervotes had been properly tallied as votes for one or the other congressional candidate, Jennings would have picked up about 8,800 votes and Buchanan would have picked up only about 5,200 votes, for a net swing of about 3,600 votes toward Jennings, far more than enough to overcome Buchanan’s officially certified 369-vote “winning” margin. *Id.*; *see id.* at 573-74.

Applying the same 63%-to-37% split, Professor Stewart testified that, even if machine malfunction caused only 1,500 “excess” undervotes — less than 10% of the total congressional undervotes reported in Sarasota County — properly tabulating those 1,500 ballots would have changed the election’s outcome, with Jennings narrowly prevailing over Buchanan. *Id.* at 535-36; *see also id.* at 575. Therefore, “if 10 percent of the undervote were attributable to machine malfunction and 90 percent to some other causes” — voter confusion or something else — the election’s outcome “[i]n all likelihood” would have been reversed. *Id.* at 536.

3. *Machine failure likely caused the excess undervote that swung the election to Buchanan.*— Professor Stewart testified that the low congressional undervote rate among paper ballots in Sarasota County and among all ballots in the

district's four other counties demonstrated that the excess electronic undervote in Sarasota County was "unlikely to be due to the negativity of the campaign or voter revulsion with . . . both candidates," as voters throughout the district overwhelmingly fell into "one media market" and "experienc[ed] basically the same campaign." *Id.* at 536, 544, 554.

Professor Stewart testified that the "excess undervote" associated with Sarasota County's iVotronic system might be attributable *in part* to voter confusion caused by the congressional ballot's format. *Id.* at 554. But he found it implausible that the *entire* excess undervote — 12% of all electronic ballots in Sarasota County, or roughly 14,000 votes — could be attributed to voter confusion. *Id.* at 539-40, 542, 554.

- *First*, the congressional ballot on Sarasota County's iVotronic machines was "fairly straightforward" and "not . . . particularly confusing" visually. *Id.* at 538; *see id.* at 536-38, 576-77.
- *Second*, shortly before any voter could actually cast his vote, he would have seen a "Summary Ballot" review screen warning him in red letters if "No Selection [Was] Made" for "U.S. Representative in Congress" and instructing him on how to correct that undervote. *Id.* at 537-38; *see id.* at 577.
- *Third*, ballots that were far more confusing visually than Sarasota

County's and that lacked any warnings (in red letters or otherwise) typically confused no more than 5% of the electorate — far less than the 12% excess undervote recorded in Sarasota County's congressional election. *Id.* at 538-39, 552. For example, Professor Stewart testified that with the “butterfly ballot” that Palm Beach County used in the 2000 presidential race — “the paradigmatic . . . confusing ballot” — fewer than 1% of the voters erroneously cast their ballots for the third-party candidate Pat Buchanan, and only 4% of the voters erroneously cast “overvotes” by selecting two or more candidates. *Id.* at 538; *see id.* at 578.

Furthermore, Professor Stewart presented statistical evidence pointing directly to a failure of the machines, not of the voters. *Id.* at 540-41, 579-80. He testified that the date when an iVotronic machine was “cleared and tested” by Sarasota County election workers or their contractors (as reflected by “Event Code 01” in the machine's audit log) correlates strongly with the machine's undervote rate: Machines prepared in the final days before the deadline for completing all such preparations exhibited the highest congressional undervote rates. *Id.* at 540. And another strong correlation exists between the number of machines “cleared and tested” on a given date and the undervote rate: As the County's staff or consultants got busier, clearing and testing more machines on a single day, the

congressional undervote rate climbed. *Id.* Both correlations were statistically significant and both provided “evidence that inattention” or sloppiness in preparing the touch-screen machines “may have driven up the undervote rate.” *Id.* at 541. Because this evidence “goes to the physical preparation of the machines,” not to characteristics of the voters, Professor Stewart testified, “it’s totally inconsistent with the notion that the high undervote rate is caused by voter confusion.” *Id.* at 541, 553.

Finally, pulling together his three main findings, Professor Stewart concluded that machine failure likely “altered the outcome of this election.” *Id.* at 541, 554. In any event, he explained, “statistics alone” could never prove that machine malfunction had no effect on the election’s outcome: “You need to look more closely at . . . the machines and the software.” *Id.* at 554.

B. Professor Wallach’s Expert Computer-Science Testimony

Professor Wallach testified that he could prove or disprove Jennings’s claims of machine malfunction within a reasonable degree of scientific certainty in a matter of weeks if — and only if — he had full access to the requested iVotronic hardware, software, and source code. A 558-63. Professor Wallach then presented a simplified one-page example of a software program designed to count votes for candidates, and he showed how the programmer’s inadvertent omission of one

“equals sign” could trigger a misallocation of votes to a particular candidate. *Id.* at 561.

Professor Wallach then catalogued strong candidates for software flaws that might be discovered in the iVotronic system — “latent mistakes or errors in design that [might have] escape[d the] normal testing certification processes.” *Id.* at 588. Specifically, he identified three potential “bugs”:

- **First**, a “bug” in the source code, perhaps combined with poorly calibrated touch-screens, could cause a malfunction between where a voter actually touched the screen and where the machine “understood” it was touched, thus causing votes for a particular candidate to go unrecorded. *Id.* at 561-62, 594-95.
- **Second**, a “bug” in the source code could cause data to be lost or transformed when the voter pressed the red “Vote” button above the touch-screen and his selections were transferred from the machine’s temporary volatile memory to its permanent nonvolatile memory. *Id.* at 561-62, 601. With this type of bug, the voter might well have seen a vote cast for Jennings on his review screen even though no permanent record of the vote ever got recorded.
- **Third**, a “bug” in the source code could cause votes to be miscounted when the election-specific “ballot-definition files” place too many

candidates on a single screen, as when Sarasota County placed the two-candidate congressional race on the same iVotronic screen as the seven-candidate gubernatorial race. *Id.* at 562.

Professor Wallach explained that any of these bugs could be “nondeterministic,” meaning that under identical circumstances the machine might properly record some voters’ selections and improperly record others’. *Id.* at 562-63. Such a nondeterministic bug might well affect 12% or 15% of the votes cast for a particular office or candidate. *Id.* at 563. Depending on the nature of the bug, Professor Wallach testified that he might be able to reconstruct the precise number of votes cast for each congressional candidate that were misrecorded as undervotes. *Id.* at 600.

Professor Wallach also testified at length about a half-dozen significant flaws in the Florida Bureau of Voting Systems Certification’s “parallel testing” of Sarasota County’s iVotronic machines. *Id.* at 559, 586, 588-89, 594-96, 600-02.

Finally, Professor Wallach testified that he would obey and “comply to the letter with any protective order” the court entered, as he has done in past cases involving source code designated as a trade secret. *Id.* at 558, 564. And he described how, in a patent-infringement case, he previously had been entrusted, without incident, with “Microsoft source code that is considered so sensitive that only a handful of employees within Microsoft are given access” to it. *Id.* at 558.

C. Professor Herron's Expert Political-Science Testimony

Because the testimony of Professor Herron, Defendants' sole witness at the evidentiary hearing, is neither cited nor even alluded to in the order below, it merits little discussion here. Two points, however, were notable.

First, Professor Herron agreed with Professor Stewart on several findings:

- Sarasota County's electronic ballots generated an "extraordinarily high" undervote rate — between 14,000 and 15,000 more undervotes than expected. *Id.* at 621-22. While Professor Stewart referred to them as "excess undervotes," Professor Herron had used the term "suppressed votes" prior to being retained by ES&S. *Id.* at 622, 626.
- Like Professor Stewart, Professor Herron found it "hard to imagine [that] the Sarasota result reflects deliberate voter choices" because, if "voters were driven away from participating in their congressional race by a blitz of last-minute negativity, this would have affected all [five] counties in the District 13 race and not just Sarasota." *Id.* at 622.
- The Sarasota County voters who unintentionally cast the 14,000-plus "suppressed votes" for Congress tilted heavily Democratic and therefore, had their votes been counted, Jennings clearly "would have won." *Id.* at 623.

- No “purely . . . statistical exercise” can “directly address the possibility that engineering lies underneath the undervote rates” in Sarasota County’s iVotronic ballots; and “ultimately, no statistical analysis of observed voting data can distinguish between ballot-format effects [that confuse voters] and engineering flaws that mimic ballot-format effects.” *Id.* at 630.

Second, ultimately, Professor Herron could offer nothing to contradict Jennings’s evidence that examining and testing the iVotronic hardware, software, and source code are reasonably necessary to prove or disprove her claim of machine malfunction. The main area of disagreement between the two political scientists involved the likely cause of the elevated undervote rate in Sarasota County: Unlike Professor Stewart, Professor Herron concluded that voter confusion based on “ballot-format effects” — especially on the part of voters over the age of 75 — by itself explained the *entire* elevated undervote rate. *Id.* at 620. But every example of high undervote rates that Professor Herron cited as demonstrating “voter confusion” from “ballot-format effects” involved the very same iVotronic technology that Sarasota County uses. *Id.* at 554, 624-25, 629-30. Therefore, Professor Herron lacked any sound basis to conclude that the real culprit was voter confusion based on ballot format, rather than machine malfunction based on a “bug” in the iVotronic source code or software. *See id.* at 588.

D. The State's "Parallel Test Summary Report"

Because the trial court's order made no mention of Professor Herron's testimony, the only evidence proffered by Defendants that ultimately mattered was a December 18, 2006 "Parallel Test Summary Report" from the Florida Division of Elections' Bureau of Voting Systems Certification. The Report stated that the parallel-test results "were successful in demonstrating 100% accuracy in recording the vote selections." A 659. The trial court's order repeated that conclusion almost verbatim, stating that the test results revealed "100% accuracy of the equipment in reporting the vote selections." *Id.* at 808.

Plaintiffs' counsel objected to this Report on the ground that it was inadmissible hearsay and could come into evidence only if the Report's author, the Chief of the Bureau of Voting Systems Certification, took the stand and was subject to cross-examination. *Id.* at 604. In overruling the hearsay objection, the judge offered this rationale: The Report "is a certification from the Department of State, who is not only authorized, but is the one agency that can issue those things and the only agency that can certify the accuracy of the testing." *Id.*

VI. The Trial Court Denied Jennings's Motions to Compel Discovery.

On Friday afternoon, December 29, 2006, the trial court issued a 16-sentence order denying all of Plaintiffs' discovery motions. The order began by explaining that, because "[a]ll parties agree for the purposes of the motions that the

Source Code and Proprietary Technology . . . constitute[] a trade secret,” the “*sole* issue for determination is whether or not Plaintiffs can demonstrate a reasonable necessity to gain access to the trade secret.” A 807 (emphasis added). The order then stated that “[t]wo parallel tests were conducted” on the iVotronic system “to verify its accuracy,” with “representatives of both Plaintiffs and Defendants . . . present”; that “[t]he test results revealed 100% accuracy of the equipment in reporting the vote selections”; and that “Plaintiffs have presented no evidence to demonstrate that the parallel testing was flawed and/or the results not valid.” *Id.* at 808. The order found that Plaintiff’s expert testimony was “nothing more than speculation and conjecture” and then concluded that granting Plaintiffs’ motions to compel would “destroy[] or at least gut[] the protections afforded those who own the trade secrets.” *Id.*

NATURE OF RELIEF SOUGHT

This Petition seeks a writ of certiorari quashing the trial court’s December 29 order, which denied Jennings’s discovery motions.

PROCEEDING ON AN EXPEDITED BASIS

Petitioner Jennings respectfully asks this Court to grant her Petition on an expedited basis, and she has thus given notice to all parties pursuant to Rule 9.300(c). The voters of Florida’s Thirteenth Congressional District are entitled to know as soon as possible whether Sarasota County’s iVotronic system rejected

thousands of legal votes cast for Christine Jennings and resulted in the “election” of the candidate who was the voters’ second choice. The answer to that question cannot be ascertained until Jennings receives the discovery she is seeking.

ARGUMENT

Under the Florida Rules of Civil Procedure, “[p]arties may obtain discovery regarding any matter, not privileged, that is relevant to the subject matter of the pending action.” FLA. R. CIV. P. 1.280(b)(1). The basis of Jennings’s complaint is that the iVotronic system Sarasota County used in the November 2006 general election rejected thousands of legal votes cast for Christine Jennings, recorded those legal votes as “undervotes,” and thereby swung the election to the less popular candidate. Access to the system’s source code as well as the iVotronic machines and related equipment is critical to any effort to determine whether the paperless electronic voting system caused the massive undervote. Therefore, the iVotronic software and hardware are not just relevant but essential to the subject matter of the pending action. This Court should grant the Petition, issue the writ, and quash the trial court’s order refusing to compel production of the relevant hardware and software, including the source code.

Although “an order denying discovery is not ordinarily reviewable by certiorari,” Florida courts have often recognized exceptions to this rule. *Medero v. Florida Power & Light Co.*, 658 So. 2d 566, 567 (Fla. 3d DCA 1995); *see, e.g.*,

Expert Installation Serv., Inc. v. Fuerte, 933 So. 2d 1231, 1233 (Fla. 3d DCA 2006); *Beekie v. Morgan*, 751 So. 2d 694, 698 (Fla. 5th DCA 2000); *Sabol v. Bennett*, 672 So. 2d 93, 94 (Fla. 3d DCA 1996); *Ruiz v. Steiner*, 599 So. 2d 196, 197-98 (Fla. 3d DCA 1992).

The standard for granting certiorari in such circumstances is well established: “(1) the order to be reviewed must constitute a departure from the essential requirements of law; (2) the order must cause material injury through subsequent proceedings; and (3) the injury must be irreparable, i.e., one for which there will be no adequate remedy after final judgment.” *Sheridan Healthcorp., Inc. v. Total Health Choice, Inc.*, 770 So. 2d 221, 222 (Fla. 3d DCA 2000). All three prongs are met here. Because the last two requirements are jurisdictional, they are addressed first.

I. The Trial Court’s Refusal to Compel Discovery Would Materially Injure Jennings.

The parties all agree that the congressional election in Florida’s Thirteenth District resulted in a statistically bizarre undervote rate. Jennings intends to argue at trial that the iVotronic system malfunctioned, rejecting thousands of legal votes cast for her and instead recording them as undervotes. Defendants seek to attribute the undervote to other causes, but cannot even agree among themselves about the source of the malfunction. ES&S asserts that “[a]ny undervote was due to factors such as ballot layout” (A 482), while the Sarasota County election supervisor

asserts that the “ballot form did not cause significant undervotes” (*id.* at 467). And the State Defendants have even suggested that individual voters’ drug use is to blame for the aberrant undervote rate. *See, e.g., id.* at 527.

Although Defendants’ theories are both contradictory and offensive to the voters of Sarasota County, now is not the time to evaluate them. Rather, this Court need only consider whether the trial judge’s refusal to compel production of the iVotronic software and hardware materially injures Jennings’s ability to pursue *her* theory about the actual cause of the undervote.

It clearly does. Without access to these materials, Jennings’s computer-science expert, Professor Wallach, will be unable to provide expert testimony at trial as to the cause of the undervote. That alone provides ample grounds for material injury sufficient to grant a writ of certiorari. *See Helmick v. McKinnon*, 657 So. 2d 1279, 1280 (Fla. 5th DCA 1995) (“[I]t is unlikely that Helmick will be able to offer an adequate expert opinion in his defense if the requested materials are not furnished. Thus, he will not be able to make a sufficient proffer on appeal to show error below justifying a reversal for new trial. . . . Accordingly, we grant the petition for writ of certiorari, and quash the order denying discovery.”).

Moreover, “[w]ithout these materials,” Jennings will be “unable to properly formulate” her case. *Id.* This has often served as the basis for granting a writ of certiorari. *See, e.g., Carroll Contracting, Inc. v. Edwards*, 528 So. 2d 951, 953

(Fla. 5th DCA 1988) (granting a writ of certiorari and reinstating a subpoena after finding that the material sought by petitioner was “necessary and possibly critical in this lawsuit”); *Marshall v. Anderson*, 459 So. 2d 384, 385 (Fla. 3d DCA 1984) (granting a writ of certiorari after finding that the order denying discovery “adversely pervades the entire subsequent conduct of the case in that it renders it virtually impossible for the plaintiff even to determine the basic elements of his cause of action”); *Colonial Penn Ins. Co. v. Blair*, 380 So. 2d 1305, 1306 (Fla. 5th DCA 1980) (granting a writ of certiorari and quashing an order denying discovery after finding it “obvious that the petitioners need the [requested material] to prepare their defense in the present lawsuit”). Here, the requested materials are critical to formulating Jennings’s case.

Furthermore, the requested materials cannot be obtained from any other source. When “there is no substitute for the information [petitioner] seeks,” and it “can be obtained only from defendants,” Florida courts routinely recognize a material injury sufficient to grant certiorari. *Criswell v. Best Western Int’l, Inc.*, 636 So. 2d 562, 563 (Fla. 3d DCA 1994); *see also Carroll Contracting*, 528 So. 2d at 952-54; *Colonial Penn Ins. Co.*, 380 So. 2d at 1306. The precise materials Jennings seeks are in the State and County Defendants’ possession, and she cannot obtain them from any other source. The facts needed to properly litigate the case will never be known unless Jennings is granted access to these materials.

The trial court's order posits that the State's post-election "parallel testing" of a handful of Sarasota County's iVotronic machines should satisfy Jennings's concerns and foreclose her need for the requested discovery. A 808. That is absurd. No state audit — overseen by the same officials who certified the defective voting machines — can substitute for the truth-finding rigors of the adversarial process. When a patient sues for medical malpractice, she is not foreclosed from discovery directed at the doctor simply because the hospital has conducted an audit and cleared the doctor of any wrongdoing. The hospital has a powerful economic interest in clearing the name of any doctor to whom it has granted privileges, and a patient cannot be denied discovery based on results from an investigation conducted by an adverse party. That would be a dangerous precedent to set. *See Moore v. Schlesinger*, 150 F. Supp. 2d 1308, 1313 (M.D. Fla. 2001) (recognizing that discovery "within the adversarial arena" has the benefit of "the attendant safeguards of the judicial process").

Moreover, the State's "parallel testing" was so thoroughly flawed that its results are worthless. As described below (see Point III-B-2 of the Argument, at pages 46 to 49), Professor Wallach testified to no fewer than six features of the tests that did not accurately replicate Election Day conditions. The State's tests were not remotely close to being conclusive on the issues that this case presents.

II. Jennings's Injury Cannot Be Adequately Remedied on Appeal.

"[C]ertiorari review of orders denying discovery has been granted where it was found that the injury caused by the order was irreparable." *Ruiz*, 599 So. 2d at 197. Here, the material injury to Jennings and other citizens of Florida's Thirteenth Congressional District will be irreparable for two reasons.

First, timing truly matters in an election contest. The term of office at issue here is only 24 months long. The cloud hanging over this election should be dispelled as quickly as possible. Given the trial judge's unwillingness to expedite this case, an appealable final judgment could be months away. By the time this Court has reversed that judgment on appeal, the parties on remand have conducted additional discovery (including properly testing the iVotronic system), and the court below has held a new trial, much of the 110th Congress will be history. Because any meaningful remedy will "be foreclosed on plenary appeal," this Court should grant certiorari review now. *Helmick*, 657 So. 2d at 1280.

Second, the harm will be irreparable because without discovery *now* there will be nothing to review on appeal *later*. Florida courts have previously granted review when petitioners have demonstrated that, absent an order compelling discovery, information critical to the case will remain undiscovered and unavailable for subsequent appellate review. "The lack of the information sought in these cases would have effectively prevented litigation of the case and there

would have been ‘no practical way to determine after judgment what the testimony would be or how it would affect the result.’” *Riano v. Heritage Corp. of S. Fla.*, 665 So. 2d 1142, 1144 (Fla. 3d DCA 1996) (quoting *Travelers Indemnity Co. v. Hill*, 388 So. 2d 648, 650 (Fla. 5th DCA 1980)); *see also Criswell*, 636 So. 2d at 563 (granting writ because “on plenary appellate review, there would be no practical way of . . . evaluating how the information [in defendants’ possession] would have affected the case”). That is true here, too. Without an order compelling discovery of the iVotronic hardware, software, and source code, Jennings cannot demonstrate conclusively that a “bug” in the source code or a malfunction of the voting equipment caused the undervote that altered the election’s outcome.

III. The Trial Court Repeatedly Departed from the Essential Requirements of Florida Law in Denying Jennings’s Motions to Compel Production of the iVotronic System Pursuant to a Protective Order.

In refusing to compel production of the core evidence in this case, the trial court departed from the essential requirements of law. As the United States Supreme Court has noted, “orders forbidding *any* disclosure of trade secrets or confidential commercial information are rare. More commonly, the trial court will enter a protective order restricting disclosure to counsel or to the parties.” *Federal Open Market Comm. of Fed. Reserve Sys. v. Merrill*, 443 U.S. 340, 362 n.24 (1979) (internal citations omitted; emphasis added). Here, in taking the

extraordinary step of forbidding *all* disclosure and refusing even to allow limited disclosure pursuant to a protective order, the trial court committed two overarching legal errors. *First*, the court applied the wrong legal test. The court apparently confused the “reasonable necessity” standard applicable to discovery disputes involving trade secrets with the “reasonable likelihood of success on the merits” standard applicable to motions for temporary injunctions. That mistake led the court to conclude wrongly that Jennings had failed to carry her burden of showing a “reasonable necessity.” And that mistake in turn led the court to refuse to conduct the required balancing of Jennings’s interests against the harm that allegedly would befall the trade-secret owner, ES&S, if the requested discovery were granted pursuant to a protective order. *Second*, the court rested its ruling on one exhibit that was admitted into evidence despite being rank hearsay, not within any hearsay exception recognized under Florida law; and at the same time, the court ignored all evidence rebutting that hearsay.

A. The Trial Court Failed to Apply the Proper Three-Step Legal Test for Discovery Disputes Involving Trade Secrets.

The trial court applied the wrong legal test for determining whether to allow discovery of materials protected by the trade-secret privilege. The privilege “is not absolute.” *Freedom Newspapers, Inc. v. Egly*, 507 So. 2d 1180, 1184 (Fla. 2d DCA 1987). Florida law provides that the trade secret’s owner “has a privilege . . . to prevent other persons from disclosing” that trade secret only “if the allowance of

the privilege will not conceal fraud or otherwise *work injustice*.” FLA. STAT. § 90.506 (emphasis added). And Florida Rule of Civil Procedure 1.280(c) provides that trade secrets may be discoverable under a protective order if the court concludes that “*justice requires*” protective measures. FLA. R. CIV. P. 1.280(c) (emphasis added). To determine whether allowing the trade-secret privilege to thwart discovery will “work injustice,” Florida courts require a balancing test. The court below failed to undertake that balancing test even though Jennings repeatedly asked it to do so. *See, e.g.*, A 352, 525, 793.

Under Florida’s balancing test, the trial court must decide whether the “necessity for the production of the [trade secrets] outweighs the interest in maintaining their confidentiality.” *Sheridan Healthcorp*, 770 So. 2d at 223. When a plaintiff seeks access to a defendant’s trade secret, this balancing test demands these three steps:

1. the plaintiff bears the burden to show “reasonable necessity” for the requested trade secrets;
2. the defendant bears the burden to show that disclosure, even under a protective order, would be harmful; and
3. the court must weigh the plaintiff’s interest in production against the defendant’s interest in maintaining confidentiality.

See id.; *see also American Express Travel Related Servs., Inc. v. Cruz*, 761 So. 2d

1206, 1209 (Fla. 4th DCA 2000).

Contrary to the trial court's findings, in Step #1, Jennings carried her burden of showing "reasonable necessity" for the iVotronic software and hardware. Yet the court bypassed Steps #2 and #3 entirely. Apparently, the judge concluded as a matter of law that, because "[a]ll parties agree for the purposes of the motions that the Source Code and Proprietary Technology . . . constitute[] a trade secret," the "*sole* issue for determination is whether or not Plaintiffs can demonstrate a reasonable necessity to gain access to the trade secret." A 807 (emphasis added). That conclusion departs from the essential requirements of law, as the issue identified by the trial judge is only the first of three that Florida caselaw requires a trial judge to consider. In any event, even as to the one issue that the trial judge *did* consider — whether Jennings had demonstrated a reasonable necessity to gain access to the iVotronic hardware, software, and source code — the court also departed from the essential requirements of law.

1. Jennings Carried Her Burden To Show a Reasonable Necessity for the Requested Trade Secrets.

Jennings carried her burden. A plaintiff seeking discovery of trade secrets must show only a "reasonable necessity" for the requested materials. *Sheridan Healthcorp*, 770 So. 2d at 222; *American Express*, 761 So. 2d at 1208; *see also Freedom Newspapers*, 507 So. 2d at 1184. And the "level of necessity which must be shown is that the information is necessary for the movant to prepare [her] case

for trial, including preparation of the movant's theories and the rebuttal of the opponent's theories." 1 MELVIN F. JAGER, TRADE SECRETS LAW § 5.33 (2006); *see also Pfeiffer v. K-Mart Corp.*, 106 F.R.D. 235, 236 (S.D. Fla. 1985). The test is as simple as it sounds: If a plaintiff shows that she reasonably needs evidence to make her case, she has satisfied the "reasonable necessity" burden.

Although the trial court invoked the term "reasonable necessity" in its order denying Jennings's motions, A 807-08, it effectively applied the higher "reasonable likelihood of success on the merits" standard that courts use when deciding motions for temporary injunctions. *See, e.g., Korn v. Ambassador Homes, Inc.*, 546 So. 2d 756, 757 (Fla. 3d DCA 1989). Demanding that higher standard before *enjoining* a defendant's conduct makes good sense. But here, the issue is a simple discovery dispute, not an injunction. The core issue driving the case is the pervasive malfunctioning of the iVotronic machines that rejected thousands of legal votes cast for Jennings and thus changed the election's outcome. Jennings seeks access to the machines to make her case. It would be entirely backwards to suggest that she must have compelling evidence to prove a reasonable likelihood of success on the merits *before* she has been given access to the very evidence she needs to prove her case on the merits.

Applying the wrong standard led the court, in turn, to conclude that Jennings's expert testimony was too "speculati[ve] and conjectur[al]" to meet the

legal threshold for granting access to ES&S's trade secrets. A 808. Had the court properly applied the "reasonable necessity" standard, it would have found that standard to be easily satisfied by the testimony of Jennings's experts.

In determining "reasonable necessity," context matters enormously. Paperless electronic voting systems are peculiarly difficult to audit. They leave no tangible evidence of a voter's decision to cast a vote (or not) for a candidate; all they leave behind is an electronic record of what the computer software "says" the voter did. There is no paper ballot prepared by the voter that can be reviewed post-election to determine whether the system correctly or incorrectly recorded his vote. The electronic "ballot-image logs" reviewed by the experts who testified at the evidentiary hearing reflect only what the computer program says the voter did, as the individual voters have no opportunity to verify those logs before leaving the polling place. Given these inherent constraints in analyzing the performance of any paperless electronic voting system, Jennings's experts — MIT political scientist Charles Stewart and Rice computer scientist Dan S. Wallach — provided more than ample evidence that access to the iVotronic hardware, software, and source code was reasonably necessary for Jennings to prepare her case for trial.

Professor Stewart testified to the following key facts:

- The later a machine was prepared, and the more machines prepared on a given day, the higher the undervote rate climbed.

- Given that the most convoluted ballot designs (such as the infamous “butterfly ballot” that Palm Beach County used in the 2000 presidential election) have confused fewer than of 5% of the voters, it is highly unlikely that the extraordinary 15% undervote rate on Sarasota County’s iVotronic machines can be explained solely by voter confusion.
- Even if only 1,500 of Sarasota County’s 18,000 congressional undervotes are attributable to machine malfunction, Jennings still would have won the election because Sarasota County was her political stronghold.

Professor Wallach testified extensively to what is already intuitive: To prove or disprove allegations of a malfunction in the iVotronic hardware and software, one needs access to the hardware and software that is alleged to have malfunctioned. This is not a case in which a plaintiff seeks a customer list or some other material that may be tangential to the complaint’s allegations. *Cf. Grooms v. Distinctive Cabinet Designs, Inc.*, 846 So. 2d 652, 655 (Fla. 2d DCA 2003). Rather, this is a case where access to the requested discovery is essential to proving the allegations.

Professor Wallach identified three potential software flaws that might be discovered in the iVotronic system, and he testified that if they exist he could probably find them within a matter of weeks. But without access to the requested materials, Professor Wallach will be prevented from developing the expert

testimony crucial to Jennings's case. *See Helmick*, 657 So. 2d at 1280.

Professor Wallach's and Professor Stewart's testimony more than sufficed for Jennings to carry her burden of showing a "reasonable necessity" for the iVotronic software and hardware that she requested. Had it applied the proper standard, the trial court would have reached that conclusion as well.

2. Defendants Did Not Carry Their Burden To Show that Disclosure Under an Appropriate Protective Order Would Harm ES&S.

The trial court further erred in ignoring Defendants' failure to carry their burden. After a trial court determines that the requested production constitutes a trade secret and that the party seeking discovery has a reasonable necessity for that trade secret, "the party resisting discovery [must] show 'good cause' for protecting or limiting discovery *by demonstrating . . . that disclosure may be harmful.*" *American Express*, 761 So. 2d at 1209 (emphasis added); *see Cytodyne Tech., Inc. v. Biogenic Tech., Inc.*, 216 F.R.D. 533, 536 (M.D. Fla. 2003) (applying Florida law) (holding that, once the trade-secrets owner "has shown the requested discovery to be trade secrets, [the owner] must then demonstrate that disclosure might be harmful"); *Kaiser Aluminum & Chem. Corp. v. Phosphate Eng'g & Const. Co.*, 153 F.R.D. 686, 688 (M.D. Fla. 1994); *Empire of Carolina, Inc. v. Mackle*, 108 F.R.D. 323, 326 (S.D. Fla. 1985). Furthermore, "[t]he relevant inquiry with respect to injury is not with respect to the harm caused by a public

disclosure. Rather, the inquiry must be measured with respect to the disclosure under an appropriate protective order.” 1 MELVIN F. JAGER, TRADE SECRETS LAW § 5.33 (2006).

ES&S presented absolutely no evidence that disclosure pursuant to an appropriate protective order would cause it harm. Nor could it have presented any credible evidence of harm, as Jennings is not a business competitor of ES&S's and had agreed to be bound by a stringent protective order that would have prevented any trade secret from leaking out to ES&S's competitors. *See Seta Corp. of Boca, Inc. v. Office of Attorney General*, 756 So. 2d 1093, 1094 (Fla. 4th DCA 2000) (ordering discovery because the party seeking access to the trade secrets was “not a competitor” and protections could be taken to prevent disclosure to nonparty business competitors); *Freedom Newspapers*, 507 So. 2d at 1184 (“The likelihood of [any] abuse of the discovery process is lessened where, as here, the party seeking discovery appears to have no real interest in the business techniques of the [party invoking the trade-secret privilege].”). So instead of trying to conjure up some evidence of actual harm, ES&S argued (in its post-hearing brief, but never before or at the evidentiary hearing) that harm is simply “presumed” whenever disclosure of a trade secret is at issue. *See* A 732-34.

But as explained above, that misstates the law. So the parties' concession below that the requested iVotronic materials constitute a trade secret in no way

alleviated ES&S's burden to show how disclosure under an appropriate protective order would be harmful. By denying Jennings's discovery while overlooking ES&S's failure to shoulder its burden, the trial court committed reversible legal error. *See Sabol*, 672 So. 2d at 94 (quashing an order denying discovery because the trial court never expressly found that the party resisting discovery made an "affirmative showing" of the harm it would suffer).

3. The Trial Court Did Not Conduct the Required Balancing Test.

The trial court also erred by performing no balancing of interests.

[Because] the trade-secret privilege is not absolute, . . . [i]n each case the judge must weigh the importance of protecting the claimant's secret against the interests in facilitating the trial and promoting a just end to the litigation. Such factors as the potential impact of disclosure upon the holder's business, protection afforded by copyright and patent laws, and necessity of disclosure to the presentation of the opponent's case may guide the judge in deciding whether to order disclosure.

Inrecon v. Village Homes at Country Walk, 644 So. 2d 103, 105 (Fla. 3d DCA 1994); *see also Fortune Pers. Agency of Ft. Lauderdale, Inc. v. Sun Tech Inc. of S. Fla.*, 423 So. 2d 545, 546 n.6 (Fla. 4th DCA 1982); *Auto Owners Ins. Co. v. Totaltape, Inc.*, 135 F.R.D. 199, 203 (M.D. Fla. 1990).

Here, the judge did not weigh any of these factors. Rather, he simply *assumed* — based on no affirmative evidence offered by ES&S or any other Defendant — that granting Jennings's motions would "destroy[] or at least gut[]

the protections afforded those who own the trade secrets.” A 808. Had the trial court conducted the required balancing, the result surely would have been different, as ES&S had presented *no* evidence of harm.

“The broad judicial discretion which the trial court enjoys in ruling on discovery matters of this type cannot properly be exercised in a vacuum or on a mere whim. The court needs sufficient insight into the relevant factors which must be weighed before deciding the competing interests of the respective parties.” *Beck v. Dumas*, 709 So. 2d 601, 603 (Fla. 4th DCA 1998). Here, the trial court ignored the relevant factors and failed to perform *any* balancing of interests. Those are clear departures from the essential requirements of law.

B. The Trial Court Rested Its Ruling Almost Entirely on a Public Report That Was Inadmissible as Hearsay, While Ignoring Contrary Evidence That Had Been Properly Admitted.

Aside from misapplying each of the three prongs of Florida’s legal test for the trade-secret privilege, the trial court also committed the most basic legal error in misreading Florida’s Evidence Code. Specifically, the court erred first in resting its ruling almost entirely on inadmissible hearsay, and second in ignoring properly admitted evidence rebutting that hearsay.

1. The Key Piece of Evidence on Which the Trial Court Relied Was Inadmissible as Hearsay.

The linchpin of the trial court’s order was its findings that the State had conducted “[t]wo parallel tests” on the iVotronic system with “representatives of

both Plaintiffs and Defendants [both] present,” that the “test results revealed 100% accuracy of the equipment in reporting the vote selections,” and that “Plaintiffs have presented no evidence to demonstrate that the parallel testing was flawed and/or the results not valid.” A 808. Those findings are grounded, however, on a blatant legal error.

At the evidentiary hearing, Defendants’ sole witness offered no testimony on the “parallel tests” of the iVotronic machines that Florida’s Division of Elections had conducted in late November and early December 2006. Indeed, he admitted that he had no expertise in electronic voting systems, “kn[ew] nothing about . . . ballot programming software,” and had no personal knowledge of these parallel tests. *Id.* at 625, 631-32. Defendants’ evidence about the parallel tests thus came instead from ES&S’s Exhibit 7, a certified copy of the December 18, 2006 “Parallel Test Summary Report” prepared by the Florida Division of Elections’ Bureau of Voting Systems Certification. *Id.* at 652.

Plaintiffs objected to the Report as hearsay, arguing that it could come into evidence only if its author — apparently David R. Drury, the Chief of the Bureau of Voting Systems Certification, whose initials appear on the Report’s cover — took the stand and was subject to cross-examination. *Id.* at 604. Plaintiffs argued that recent Supreme Court precedent — *Lee v. Department of Health & Rehabilitative Services*, 698 So. 2d 1194, 1201 (Fla. 1997) — expressly held that

Florida's public-records hearsay exception (unlike its federal counterpart) does not provide for the admission of factual findings resulting from a government agency's investigation or audit and that "in Florida, rather than offering this type of record, a witness must be called who has personal knowledge of the facts." A 604 (quoting *Lee*, 698 So. 2d at 1201).

ES&S's counsel largely avoided the hearsay issue and instead argued a point that was entirely uncontested, namely that the certified copy of the State's Report was self-authenticating:

Your Honor, . . . as a record which is under seal, there is no doubt that this is a record from the Department of State. . . . This is an official declaration by a division of the government of the State of Florida. . . . [S]ince it is the reflection of official action by the State, we would ask that it be admitted into evidence.

Id.

After confirming that the Report "was issued by the Department of State," the court overruled Plaintiffs' objections. The court's entire explanation, just two sentences long, seemingly confused the *authentication* of a public record with the public-records exceptions to the *hearsay* rule:

This case cited here [*Lee v. Department of Health & Rehabilitative Services*] relates to factual findings as a result of determining an investigation made pursuant to authority granted by law. I believe what they [ES&S] have there [in the State's Report] is a certification from the Department of State, who is not only authorized, but is the one agency that can issue those things and the only agency that can certify the accuracy of the testing.

Id.

The trial judge's ruling was wrong as a matter of law, both under the plain text of Florida's Evidence Code and under controlling Florida Supreme Court precedent. The Parallel Test Summary Report was hearsay because ES&S offered it in evidence "to prove the truth of the matter asserted" — the supposed accuracy of the iVotronic machines. FLA. STAT. § 90.801(1)(c). The Report was therefore inadmissible, *see id.* § 90.802, unless it fell within Florida's hearsay exception for public records and reports, *see id.* § 90.803(8). For two reasons, the Report fell outside that exception and therefore was inadmissible.

First, Florida's public-records hearsay exception, unlike its federal counterpart, does *not* cover "factual findings resulting from an investigation made pursuant to authority granted by law." FED. R. EVID. 803(8). This type of public record "was intentionally omitted from section 903.08(8) of [Florida's] evidence code." CHARLES W. EHRHARDT, FLORIDA EVIDENCE § 803.8 (2006 ed.). "The drafters felt that the results of official investigations lacked sufficient reliability to offset the prejudice that would result to the party against whom an unreliable report is introduced." *Id.* at n.20. Reports containing "evaluations or statements of opinion by a public official, while within the public-record exception to the Federal Rules, are [thus] inadmissible hearsay under the [Florida] Evidence Code." *Id.*

The Supreme Court recently reiterated that very point in *Lee v. Department of Health & Rehabilitative Services*, 698 So. 2d at 1201. And the Court explained that, “[i]n Florida, rather than offering this type of record, a witness must be called who has personal knowledge of the facts.” *Id.* (citation omitted). The State’s Parallel Testing Summary Report falls squarely within the category of inadmissible public records delineated by the Code and by the Supreme Court’s decision in *Lee*.

Second, even if admission of the Report were not foreclosed as a matter of law, the Report would be inadmissible because its “sources of information [and] other circumstances show [its] lack of trustworthiness.” FLA. STAT. § 90.803(8). The Report was completed literally the day before the hearing by the chief of the very bureau that certified the machines Jennings alleges malfunctioned in this case. The core allegation in Jennings’s lawsuit — pervasive malfunctioning of the electronic voting system certified by the Bureau of Voting Systems Certification — renders the Bureau Chief’s Report vindicating the system as “100% accurate” inherently untrustworthy. A Report from the Bureau of Voting Systems Certification whitewashing a Bureau-certified voting system is no more trustworthy than a report from a hospital vindicating one of its own physicians after he has been accused of malpractice.

The judge’s erroneous ruling appears to be grounded in his repeated references to the report being “a **certification** from the Department of State.” A

604 (emphasis added); *see also id.* (“This was issued by the Department of State, correct?”); *id.* (calling the Department of State “the one agency . . . that can certify”). ES&S’s counsel invited this confusion by skirting the hearsay issue and instead addressing certification. *Id.* The whole discussion about certification and authentication, however, was beside the point: “Although a public record has been authenticated, it is not admissible unless it is also admissible under section 90.803(8), the public-records exception to the hearsay rule, and is not disqualified by any of the other rules of exclusion.” CHARLES W. EHRHARDT, FLORIDA EVIDENCE § 901.7 (2006 ed.).

Had the court below focused correctly on the hearsay problem, it would have excluded the State’s Parallel Testing Summary Report, which in turn would have gutted the key finding in the court’s order: that the parallel-test results demonstrated the iVotronic system to be “100% accura[te].” A 808.

2. The Trial Court Ignored Properly Admitted Evidence Rebutting the Hearsay.

The trial court piled one error on the next, as it then went on to find that “Plaintiffs have presented no evidence to demonstrate that the parallel testing was flawed and/or the results not valid.” A 808. Although Jennings certainly could have presented *more* evidence of the parallel tests’ flaws if Defendants had put the Report’s author on the stand, she nonetheless presented ample evidence to discredit the parallel tests and thus to render clearly erroneous the trial judge’s finding.

Specifically, Professor Wallach testified that the State's parallel tests were "incomplete," were "not conclusive in any way," "weren't conducted the way we would have wanted," were subject to "a number of criticisms," did not use the machines the way they actually were used on Election Day, did not involve "enough machines . . . to be a statistical[ly valid] sample," tested only two machines chosen by Jennings (out of roughly 1,500 total machines in Sarasota County), lacked "sufficient test coverage," and could not possibly "rule out the [existence] of a software bug." *Id.* at 588-89, 595, 600-02.

Professor Wallach raised six fundamental flaws in the State's parallel tests that could render their results invalid.

First, he testified that actual voters on Election Day used the touch-screens in a horizontal or nearly horizontal position "at desk height," but the parallel testers used them in a vertical position at shoulder height. *Id.* at 559. That could matter, he explained, because a voter is more likely to rest both hands on a horizontal screen, and there have "been studies that show if, for example, . . . your thumb is [inadvertently] touching the screen on one side while you're touching [the screen with your voting hand] on the other [side], that could cause errors." *Id.* at 595; *see id.* at 602. He also testified that "[b]ecause in the parallel testing the machines weren't operated at a normal angle of view, it's difficult" to determine whether

touch-screen miscalibration contributed to the iVotronic system's malfunction. *Id.* at 596.

Second, Professor Wallach testified that the State's 12 test voters lacked the diversity appropriate for a proper simulated-election study: "[Y]ou would try to assume the behavior of a variety of different voters, whether it's a shaking hand or large fingers or small fingers. You would try a number of different things that weren't considered during the [State's] parallel test." *Id.* at 595; *see id.* at 601-02. He specifically described "a test that the State of California conducted on Diebold [electronic voting] machines, where they discovered that one particular [test] voter had a habit of dragging her finger on the screen, and that [this] behavior induced the machine to crash. Had they not had a broad demographic of test voters, they would never have discovered this particular bug." *Id.* at 602; *see id.* at 563.

Third, Professor Wallach testified that the State's test voters, all of whom "work for the same agency that had already certified the equipment and the software," did not provide a sufficiently "broad[] selection of voters" reflecting "the demographic composition of Sarasota" — a factor that he stated "absolutely does matter" in judging the test results' validity. *Id.* at 601.

Fourth, Professor Wallach testified that the test voters should not have been instructed to vote slowly because some actual voters move very quickly across the

touch-screen, and “rapid touches of a computer screen [sometimes cause it] to freeze or otherwise malfunction.” *Id.* at 602.

Fifth, Professor Wallach testified that the State’s parallel tests used too few machines and too few ballots — shortcomings that deprived the test of “a more statistically significant sample.” *Id.*

Sixth, Professor Wallach criticized the state tests’ scripts because they never “used a vote pattern in which a vote for Buchanan was entered” when the screen with the congressional race first appeared; literally every script called for the tester initially either to press Jennings’s name on the screen or to skip the congressional race. *Id.*

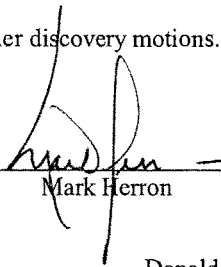
Professor Wallach also testified that the State had rejected specific suggestions that Jennings and her experts had provided about how to improve the parallel tests. *Id.* at 589. He further testified that flawed parallel tests might fail to reveal specific types of iVotronic machine malfunction potentially at issue in this case. *Id.* at 586, 594-95.

Given the sheer mass and detail of Professor Wallach’s critique of the State’s parallel tests, the trial judge’s finding that “Plaintiffs have presented no evidence to demonstrate that the parallel testing was flawed and/or the results not valid” is breathtaking. That the judge gave great weight to Defendants’ hearsay

Report about the parallel tests while ignoring live expert testimony thoroughly discrediting those tests is all the more inexplicable.

CONCLUSION

For the foregoing reasons, Petitioner Christine Jennings respectfully asks this Court to grant a writ of certiorari on an expedited basis and to quash the trial court's December 29, 2006 order denying her discovery motions.



Mark Herron

Kendall Coffey
Florida Bar No. 259861
COFFEY & WRIGHT, LLP
2665 South Bayshore
Drive
PH-2, Grand Bay Plaza
Miami, FL 33133
P: (305) 857-9797
F: (305) 859-9919
kcoffey@coffeywright.com

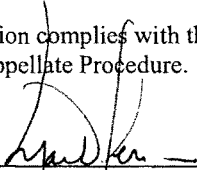
Mark Herron
Florida Bar No. 199737
MESSER, CAPARELLO &
SELF, P.A.
2618 Centennial Place
Tallahassee, FL 32308
P: (850) 222-0720
F: (850) 558-0659
mherron@lawfla.com

Donald B. Verrilli, Jr.
Sam Hirsch
Jessica Ring Amunson
JENNER & BLOCK LLP
601 13th Street, N.W.
Suite 1200
Washington, DC 20005
P: (202) 639-6000
F: (202) 639-6066
dverrilli@jenner.com
shirsch@jenner.com
jamunson@jenner.com

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CERTIFICATE OF COMPLIANCE

I HEREBY CERTIFY that this Petition complies with the font requirements of Rule 9.100(1) of the Florida Rules of Appellate Procedure.



Mark Herron

Kendall Coffey
Florida Bar No. 259861
COFFEY & WRIGHT, LLP
2665 South Bayshore Dr.
PH-2, Grand Bay Plaza
Miami, FL 33133
Telephone: (305) 857-9797
Facsimile: (305) 859-9919
E-mail: kcoffey@coffeywright.com

Mark Herron
Florida Bar No. 199737
Messer, Caparello & Self, P.A.
2618 Centennial Place
Tallahassee, Florida 32308
Telephone: (850) 222-0720
Facsimile: (850) 558-0659
E-mail: mherron@lawfla.com

Donald B. Verrilli, Jr.
Sam Hirsch
Jessica Ring Amunson
JENNER & BLOCK LLP
601 13th Street, NW
Suite 1200 South
Washington, DC 20005
Telephone: (202) 639-6000
Facsimile: (202) 639-6066
E-mail: dverrilli@jenner.com
shirsch@jenner.com
jamunson@jenner.com

SA-63

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a copy of this Petition was furnished to the following by United States Mail, this 3rd day of January, 2007:

Peter Antonacci
 Allen C. Winsor
 GrayRobinson, P.A.
 P.O. Box 11189
 Tallahassee, FL 32302
 Telephone: (850) 577-9090
 Facsimile: (850) 577-3311
 E-mail: pva@gray-
 robinson.com
 awinsor@gray-robinson.com
Attorneys for State Defendants

Hayden R. Dempsey
 Glenn T. Burhans, Jr.
 Greenberg Traurig, P.A.
 101 East College Avenue
 Tallahassee, FL 32301
 Telephone: (850) 222-6891
 Facsimile: (850) 681-0207
 E-mail: dempseyh@gtlaw.com
 burhansg@gtlaw.com
*Attorneys for Defendant Vern
 Buchanan*

Reginald J. Mitchell
 People for the American Way
 Foundation
 1550 Melvin Street
 Tallahassee, FL 32301
 Telephone: (850) 877-0307
 Facsimile: (850) 402-1999
 E-mail: rmitchell@pfaw.org
Attorney for Fedder Plaintiffs

Ronald A. Labasky
 Young Van Assenderp, P.A.
 225 South Adams Street
 Tallahassee, FL 32301
 Telephone: (850) 222-7206
 Facsimile: (850) 561-6834
 E-mail: rlabasky@yvlaw.net
*Attorney for Defendant Supervisor Kathy
 Dent*

Frederick J. Elbrecht
 Sarasota County Attorney's Office
 1660 Ringling Blvd., Floor 2
 Sarasota, FL 34236-6870
 Telephone: (941) 861-7272
 Facsimile: (941) 861-7267
 E-mail: relbrecht@scgov.net
*Attorney for Defendant Sarasota County
 Canvassing Board*

Miguel De Grandy P.A.
 800 S. Douglas Rd., Suite 850
 Coral Gables, FL 33134-2088
 Telephone: 305-444-7737
 Facsimile: 305-443-2616
 Email: mad@degrandylaw.com
Attorney for Defendant ES&S

Harry O. Thomas
 Radey Thomas Yon & Clark, P.A.
 P.O. Box 10967
 Tallahassee, FL 32302-2967
 Telephone: 850-425-6654
 Facsimile: 850-425-6694

Lowell Finley
 Voter Action
 1604 Solano Avenue
 Berkeley, CA 94707
 Telephone: (510) 318-2248
 Facsimile: (415) 723-7141
 E-mail: lfinley@wwc.com
Attorney for Fedder Plaintiffs

Elliot M. Minberg
 Judith E. Schaeffer
 People for the American Way
 Foundation
 2000 M Street N.W. #400
 Washington, D.C. 20036
 Telephone: (202) 467-4999
 Facsimile: (202) 293-2672
 E-mail: eminberg@pfaw.org
 jschaeffer@pfaw.org
Attorneys for Fedder Plaintiffs

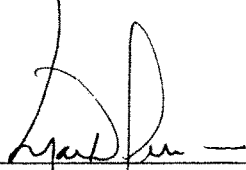
Muslima Lewis
 Randall C. Marshall
 Aziza Naa-Kaa Botchway
 ACLU Foundation of Florida, Inc.
 4500 Biscayne Boulevard, Suite 340
 Miami, FL 33137-3227
 Telephone: (786) 273-2729
 Facsimile: (786) 363-1448
 E-mail: mlewis@aclufl.org
 rmarshall@aclufl.org
 abotchway@aclufl.org
Attorneys for Fedder Plaintiffs

Email: hthomas@radeylaw.com
Attorney for Defendant ES&S

Cindy A. Cohn
 Matthew J. Zimmerman
 Electronic Frontier Foundation
 454 Shotwell Street
 San Francisco, CA 94110
 Telephone: (415) 436-9333 x127
 Facsimile: (415) 436-9993
 E-mail: cindy@eff.org
 mattz@eff.org
Attorneys for Fedder Plaintiffs

Rebecca Harrison Steele
 Zeina N. Salam
 ACLU Foundation of Florida, Inc.
 West Central Florida Office
 P.O. Box 18245
 Tampa, FL 33679-8245
 Telephone: (813) 254-0925
 Facsimile: (813) 254-0926
 E-mail: rsteele@aclufl.org
 zsalam@aclufl.org
Attorneys for Fedder Plaintiffs

The Honorable William L. Gary
 The Circuit Court for the Second Judicial
 Circuit
 Leon County Courthouse
 301 S. Monroe Street
 Tallahassee, FL 32301



COUNSEL FOR PETITIONER

Kendall Coffey
Florida Bar No. 259861
COFFEY & WRIGHT, LLP
2665 South Bayshore Dr.
PH-2, Grand Bay Plaza
Miami, FL 33133
Telephone: (305) 857-9797
Facsimile: (305) 859-9919
E-mail: kcoffey@coffeywright.com

Mark Herron
Florida Bar No. 199737
MESSER, CAPARELLO & SELF, P.A.
2618 Centennial Place
Tallahassee, Florida 32308
Telephone: (850) 222-0720
Facsimile: (850) 558-0659
E-mail: mherron@lawfla.com

Donald B. Verrilli, Jr.
Sam Hirsch
Jessica Ring Amunson
JENNER & BLOCK LLP
601 13th Street, NW, Suite 1200 South
Washington, DC 20005
Telephone: (202) 639-6000
Facsimile: (202) 639-6066
E-mail: dverrilli@jenner.com
shirsch@jenner.com
jamunson@jenner.com

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Tab 3

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IN THE DISTRICT COURT OF APPEAL
FIRST DISTRICT OF FLORIDA
CASE NO. _____
LT NO. 2006 CA 2973

CHRISTINE JENNINGS, as nominee of the Democratic Party
for Representative in Congress from the State of Florida's
Thirteenth Congressional District,

Petitioner,

v.

ELECTIONS CANVASSING COMMISSION OF THE STATE OF FLORIDA;
SARASOTA COUNTY CANVASSING BOARD;
KATHY DENT, as SARASOTA COUNTY SUPERVISOR OF ELECTIONS;
SUE M. COBB, as SECRETARY OF STATE OF THE STATE OF FLORIDA;
DAWN K. ROBERTS, as DIRECTOR OF THE DIVISION OF ELECTIONS
OF THE STATE OF FLORIDA;
VERN BUCHANAN, as nominee of the Republican Party for Representative in Congress
from the State of Florida's Thirteenth Congressional District; and
ELECTION SYSTEMS & SOFTWARE, INC.,

Respondents.

EMERGENCY MOTION TO EXPEDITE PETITION FOR A WRIT OF CERTIORARI

On Petition for a Writ of Certiorari to the Circuit Court of the Second Judicial Circuit,
in and for Leon County
Honorable William L. Gary

Kendall Coffey
COFFEY & WRIGHT, LLP
2665 South Bayshore Drive
PH-2, Grand Bay Plaza
Miami, FL 33133
(305) 857-9797

Mark Herron
MESSER, CAPARELLO &
SELF, P.A.
2618 Centennial Place
Tallahassee, FL 32308
(850) 222-0720

Donald B. Verrilli, Jr.
Sam Hirsch
Jessica Ring Amunson
JENNER & BLOCK LLP
601 13th Street, N.W.
Suite 1200
Washington, DC 20005
(202) 639-6000

Counsel for Petitioner

SA-67

**EMERGENCY MOTION TO EXPEDITE
PETITION FOR A WRIT OF CERTIORARI**

Petitioner Christine Jennings respectfully requests that this Court expedite proceedings in this matter and states:

1. The question presented in this emergency petition for a writ of certiorari is whether the trial court departed from the essential requirements of law by denying Petitioner's motions to compel production of certain discovery critical to proving Petitioner's case that the iVotronic electronic voting system used by Sarasota County during the November 2006 general election caused the rejection of thousands of legal votes, resulting in the "election" of the candidate who was the voters' second choice for United States Representative from Florida's Thirteenth Congressional District.

2. The trial court relied on the trade-secrets privilege in denying Petitioner's motions for production of components of the iVotronic voting system, but applied the wrong legal standard to Petitioner's burden, ignored that Respondents did not meet their burden, and failed to perform the required balancing of interests. The court simply concluded, based on absolutely no evidence presented by the manufacturer of the iVotronic system, Election Systems & Software, Inc. ("ES&S"), that granting Petitioner's motions "would result in

destroying or at least gutting the protections afforded those who own the trade secrets” of the iVotronic voting system. Order on Motions at 3 (Dec. 29, 2006).

3. Because this case involves voting technology that will be used by more than 40% of Florida’s voters in upcoming elections, this is a case of great urgency and importance not only to the voters of Florida’s Thirteenth Congressional District, but to voters statewide. “[T]he much larger issue in Florida and nationwide is how to identify the problems that make voting technology unstable enough to undermine confidence in our electoral system. That needs to be addressed and rectified — and certainly before another presidential election rolls around.” Editorial, *E-Glitch: Sarasota Mess Creates a Test Case*, TALLAHASSEE DEMOCRAT, Dec. 17, 2006. Its timely resolution is therefore critical.¹

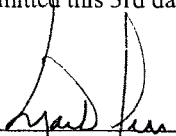
¹ See also Editorial, *District 13: Wrong Ruling*, PALM BEACH POST, Jan. 3, 2007 (“The public needs the courts to err on the side of voters, not trade secrets.”); Editorial, *Finding the Source: Unanswered Questions in the Sarasota Voting Case*, WASH. POST, Jan. 2, 2007, at A16 (“More than a winning commercial formula is at stake here. Hopefully the appeals court will see that the public good would be well served by getting to the bottom of this case.”); Editorial, *Question for Florida: Are 18,000 Votes Missing in Sarasota?*, DAYTONA BEACH NEWS-JOURNAL, Dec. 21, 2006 (“What’s more important to you: Knowing that your vote is counted, or knowing that the company that sold the county voting machines is able to keep its trade secrets private? For most voters, the answer is easy.”); Editorial, *Checking the Vote: Another Disputed Florida Race Points Up the Need for a Paper Trail*, WASH. POST, Dec. 2, 2006 (“It’s important that these questions be answered, not just to determine the outcome of this race but to maintain the integrity of voting for contests where more than one congressional district court be at stake.”).

4. The term of office Petitioner is seeking begins on January 4, 2007 and ends just twenty-four months later. The election-contest statute under which Petitioner is proceeding in the trial court expressly calls for expedited proceedings. See Section 102.168, Florida Statutes. And Florida courts have previously recognized the importance of expedited proceedings when a term of public office is at stake. See, e.g., *Palm Beach Cty. Canvassing Bd. v. Harris*, 772 So. 2d 1273, 1280 (Fla. 2000).

5. The voters of Florida's Thirteenth Congressional District are entitled to know as soon as possible whether Sarasota County's iVotronic system rejected thousands of legal votes cast for Christine Jennings and resulted in their being represented in Congress by a candidate who was not their choice. The answer to that question cannot be ascertained until Petitioner receives the discovery she is seeking.

WHEREFORE, Petitioner respectfully moves this Court to expedite these proceedings so that this case may be adjudicated as soon as possible.

Respectfully submitted this 3rd day of January, 2007:



COUNSEL FOR PETITIONER JENNINGS
Kendall Coffey
Florida Bar No. 259861
COFFEY & WRIGHT, LLP

2750

2665 South Bayshore Dr.
PH-2, Grand Bay Plaza
Miami, FL 33133
Telephone: (305) 857-9797
Facsimile: (305) 859-9919
E-mail: kcoffey@coffeywright.com

Mark Herron
Florida Bar No. 199737
Messer, Caparello & Self, P.A.
2618 Centennial Place
Tallahassee, Florida 32308
Telephone: (850) 222-0720
Facsimile: (850) 558-0659
E-mail: mherron@lawfla.com

Donald B. Verrilli, Jr.
Sam Hirsch
Jessica Ring Amunson
JENNER & BLOCK, LLP
601 13th Street, NW
Suite 1200 South
Washington, DC 20005
Telephone: (202) 639-6000
Facsimile: (202) 639-6066
E-mail: dverrilli@jenner.com
shirsch@jenner.com
jamunson@jenner.com

2751

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a copy of this motion was furnished to the following by United States Mail, this 3rd day of January, 2007:

Peter Antonacci
Allen C. Winsor
GrayRobinson, P.A.
P.O. Box 11189
Tallahassee, FL 32302
Telephone: (850) 577-9090
Facsimile: (850) 577-3311
E-mail: pva@gray-robinson.com
awinsor@gray-robinson.com
Attorneys for State Defendants

Hayden R. Dempsey
Glenn T. Burhans, Jr.
Greenberg Traurig, P.A.
101 East College Avenue
Tallahassee, FL 32301
Telephone: (850) 222-6891
Facsimile: (850) 681-0207
E-mail: dempseyh@gtlaw.com
burhansg@gtlaw.com
*Attorneys for Defendant Vern
Buchanan*

Reginald J. Mitchell
People for the American Way
Foundation
1550 Melvin Street
Tallahassee, FL 32301
Telephone: (850) 877-0307
Facsimile: (850) 402-1999
E-mail: rmitchell@pfaw.org
Attorney for Fedder Plaintiffs

Lowell Finley
Voter Action

Ronald A. Labasky
Young Van Assenderp, P.A.
225 South Adams Street
Tallahassee, FL 32301
Telephone: (850) 222-7206
Facsimile: (850) 561-6834
E-mail: rlabasky@yvlaw.net
*Attorney for Defendant Supervisor Kathy
Dent*

Frederick J. Elbrecht
Sarasota County Attorney's Office
1660 Ringling Blvd., Floor 2
Sarasota, FL 34236-6870
Telephone: (941) 861-7272
Facsimile: (941) 861-7267
E-mail: relbrecht@scgov.net
*Attorney for Defendant Sarasota County
Canvassing Board*

Miguel De Grandy P.A.
800 S. Douglas Rd., Suite 850
Coral Gables, FL 33134-2088
Telephone: 305-444-7737
Facsimile: 305-443-2616
Email: mad@degrandylaw.com
Attorney for Defendant ES&S

Harry O. Thomas
Radey Thomas Yon & Clark, P.A.
P.O. Box 10967
Tallahassee, FL 32302-2967
Telephone: 850-425-6654
Facsimile: 850-425-6694
Email: hthomas@radeylaw.com

2752

1604 Solano Avenue
Berkeley, CA 94707
Telephone: (510) 318-2248
Facsimile: (415) 723-7141
E-mail: lfinley@wwc.com
Attorney for Fedder Plaintiffs

Elliot M. Minberg
Judith E. Schaeffer
People for the American Way
Foundation
2000 M Street N.W. #400
Washington, D.C. 20036
Telephone: (202) 467-4999
Facsimile: (202) 293-2672
E-mail: eminberg@pfaw.org
jschaeffer@pfaw.org
Attorneys for Fedder Plaintiffs

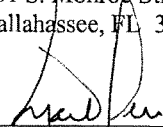
Muslima Lewis
Randall C. Marshall
Aziza Naa-Kaa Botchway
ACLU Foundation of Florida, Inc.
4500 Biscayne Boulevard, Suite 340
Miami, FL 33137-3227
Telephone: (786) 273-2729
Facsimile: (786) 363-1448
E-mail: mlewis@aclufl.org
rmarshall@aclufl.org
abotchway@aclufl.org
Attorneys for Fedder Plaintiffs

Attorney for Defendant ES&S

Cindy A. Cohn
Matthew J. Zimmerman
Electronic Frontier Foundation
454 Shotwell Street
San Francisco, CA 94110
Telephone: (415) 436-9333 x127
Facsimile: (415) 436-9993
E-mail: cindy@eff.org
mattz@eff.org
Attorneys for Fedder Plaintiffs

Rebecca Harrison Steele
Zeina N. Salam
ACLU Foundation of Florida, Inc.
West Central Florida Office
P.O. Box 18245
Tampa, FL 33679-8245
Telephone: (813) 254-0925
Facsimile: (813) 254-0926
E-mail: rsteele@aclufl.org
zsalam@aclufl.org
Attorneys for Fedder Plaintiffs

The Honorable William L. Gary
The Circuit Court for the Second Judicial
Circuit
Leon County Courthouse
301 S. Monroe Street
Tallahassee, FL 32301



COUNSEL FOR PETITIONER
Kendall Coffey
Florida Bar No. 259861
COFFEY & WRIGHT, LLP
2665 South Bayshore Dr.
PH-2, Grand Bay Plaza

2753

Miami, FL 33133
Telephone: (305) 857-9797
Facsimile: (305) 859-9919
E-mail: kcoffey@coffeywright.com

Mark Herron
Florida Bar No. 199737
MESSER, CAPARELLO & SELF, P.A.
2618 Centennial Place
Tallahassee, Florida 32308
Telephone: (850) 222-0720
Facsimile: (850) 558-0659
E-mail: mherron@lawfla.com

Donald B. Verrilli, Jr.
Sam Hirsch
Jessica Ring Amunson
JENNER & BLOCK, LLP
601 13th Street, NW, Suite 1200 South
Washington, DC 20005
Telephone: (202) 639-6000
Facsimile: (202) 639-6066
E-mail: dverrilli@jenner.com
shirsch@jenner.com
jamunson@jenner.com

2754

Tab 4

2755

DISTRICT COURT OF APPEAL, FIRST DISTRICT
301 S. Martin Luther King, Jr. Blvd.
Tallahassee, Florida 32399-1850
Telephone No. (850) 488-6151

January 4, 2007

CASE NO.: 1D07-11
L.T. No. : 2006 CA 2973

Christine Jennings v. Elections Canvassing
Commission Etc., Et Al.

Appellant / Petitioner(s), Appellee / Respondent(s).

BY ORDER OF THE COURT:

Respondent shall show cause within 20 days of the date of this order why the petition for writ of certiorari should not be granted. Petitioner shall be allowed to serve a reply within 15 days thereafter.

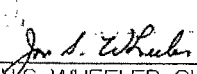
I HEREBY CERTIFY that the foregoing is (a true copy of) the original court order.

Served:

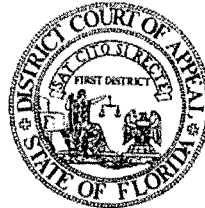
Sam Hirsch	Kendall Coffey	Jessica Ring Amunson
Donald B. Verrilli, Jr.	Mark Herron	Hayden R. Dempsey
Randall C. Marshall	Judith E. Schaeffer	Rebecca Harrison Steele
Glenn T. Burhans, Jr.	Aziza Naa-Kaa Botchway	Allen C. Winsor
Elliott M. Mincberg	Peter Antonacci	Reginald J. Mitchell
Ronald A. Labasky	Frederick J. Elbrecht	Miguel De Grandy
Lowell Finley	Muslima Lewis	Cindy A. Cohen
Matthew J. Zimmerman	Hon. William L. Gary, Judge	Zeina N. Salam

Harry O. Thomas

am



JOE S. WHEELER, CLERK



2756

Tab 5

2757

IN THE DISTRICT COURT OF APPEAL
FIRST DISTRICT OF FLORIDA
CASE NO. 1D07-11
LT CASE NO. 2006 CA 2973

CHRISTINE JENNINGS,

Petitioner,

vs.

ELECTIONS CANVASSING COMMISSION
OF THE STATE OF FLORIDA, et al.,

Respondents.

**RESPONDENT ELECTION SYSTEMS & SOFTWARE, INC.'S
MOTION TO STRIKE PETITIONER'S
EMERGENCY PETITION FOR WRIT OF CERTIORARI**

Respondent, Election Systems & Software, Inc. ("ES&S") moves for entry of an order striking the Emergency Petition For A Writ of Certiorari ("Petition") filed by Petitioner, Christine Jennings ("Petitioner"), to review the Order entered on Friday, December 29, 2006, ("Order") following a two-day evidentiary hearing on December 19 and 20, 2006. The Petition should be stricken because the Petition refers to and relies on matters that are outside the record in the case and seeks to have this Court, in its review of the Order, consider evidence that was not

presented to the trial court at the evidentiary hearing.¹ In addition, the Petition should be stricken because it contains factual summaries that are not supported by citations to the record before the lower tribunal and because the Introduction and Statement of Facts sections are unduly argumentative and contain matters immaterial and impertinent to the controversy between the parties.

As shown herein, the prejudicial effect of the inclusion of non-record material and factual statements without record cites is so pervasive throughout the Petition that ES&S requests that the entire Petition be stricken, not just the offending sections within the Petition.

I. Argument

A. The Evidence Presented at the Evidentiary Hearing on Reasonable Necessity.

The sole purpose of the evidentiary hearing on December 19 and 20 was to provide Petitioner an opportunity to present evidence to establish a reasonable necessity for the production of ES&S' Source Code and Proprietary Equipment, material that all parties had previously stipulated were trade secrets of ES&S. A 460-461, 484-485, 525, 732-733. The evidence offered by the parties and admitted into evidence at the hearing consisted of Petitioner's Exhibits 1-10, A 567-582; ES&S' Exhibits 1-8, A 639-707; and the testimony of witnesses

¹References to Appendix in this motion are to the Appendix filed by Petitioner with the Petition and are cited as "A___." References to the Petition in this motion are cited as Petition__.

Charles Stewart and Dan Wallach for Petitioner and Michael Herron for ES&S. A 524-566, 583-638.

At the evidentiary hearing, Petitioner did not call as witnesses any voters to testify that they encountered a machine malfunction in voting. Likewise, Petitioner did not attempt to offer into evidence any affidavits from voters, poll watchers, poll workers, Sarasota County technical-support persons, or the wife of Respondent Buchanan attesting to machine malfunctions. Similarly, Petitioner did not offer into evidence any records from the Sarasota County Supervisor of Elections' office documenting machine malfunctions. Nevertheless, the Petition incorporates and relies on such purported non-record evidence.

B. Material Outside the Record Referred to in Petition.

Section II of the Statement of Facts in the Petition is entitled "Contemporaneous Evidence Pointed to Pervasive Malfunctioning of Sarasota County's iVotronic System." In sub-section II of the Statement of Facts Petitioner asserts that "hundreds of eyewitness accounts and contemporaneous records from the Sarasota County Supervisor of Elections' office documented that the voting machines had systematically failed to record votes cast for candidates in the Thirteenth District congressional race, particularly votes cast for Jennings." Petition 6.

The Statement of Facts then includes excerpted quotations from: (i) an affidavit from an unidentified voter, (ii) a quote attributed to an unidentified poll watcher attesting to what unidentified poll workers were overheard telling unidentified voters, (iii) several excerpted quotations from unidentified "Incident Report Forms" allegedly from the Sarasota County Supervisor of Elections' office, (iv) a report from an unidentified Sarasota County technical-support person, and (v) purported statements by Respondent Buchanan's wife. The record citations given by Petitioner for items (i) thru (iv) are to allegations contained in Petitioner's amended complaint. A 215-225. The cited pages from the amended complaint contain unverified purported excerpts from unidentified affiants, poll watchers, poll workers, and incident reports. The amended complaint is not verified and none of the excerpted affidavits or other quoted material are attached to the amended complaint as exhibits. In fact, the affidavits and quoted material referred to in the amended complaint have never been filed in the court record and certainly none of the affidavits or quoted material were offered into evidence by Petitioner at the evidentiary hearing. Accordingly, the affidavits and statements referred to in the amended complaint, which are misrepresented in the Petition as established facts, were not evidence that Judge Gary could consider in determining if Petitioner sustained the burden of establishing reasonable necessity for the production of ES&S' Source Code and Proprietary Equipment.

In addition to the Petitioner's record citation to the amended complaint, Petitioner also cites to three pages from the transcript of the evidentiary hearing (A 593, 598-99) as evidence supporting the statement that "there literally were hundreds of such reports from voters, poll watchers, election officials and support personnel." Petition at 7. These appendix cites are misleading and they do not substantiate that there were hundreds of reports from voters, poll watchers, election officials and support personnel. A 593 and 598-599 are citations to testimony by Dan Wallach on cross examination by Respondent Buchanan's counsel in which Wallach testified that he was not aware of any anecdotal evidence of machines failing in unexpected ways but then testifying that there is "evidence of ballots sometimes not appearing on the screen." A 593. This purported evidence was never identified and certainly never offered into evidence by Petitioner. Similarly, at A 598-599 Wallach testified that he has "evidence that suggests that some of the anecdotal descriptions of visible problems of the display might be factual." However, once again, the evidence and the anecdotal descriptions, whatever they might have been and from whatever source they may have come, were never identified and were certainly never offered into evidence by Petitioner. Despite Petitioner's reference to Wallach's testimony there is nothing to show that whatever anecdotal evidence Wallach was referring to is the affidavits and other

excerpted material found in the unverified amended complaint at A 215-225 as Petitioner would apparently have this Court believe.

Lastly, in Section II of the Statement of Facts, Petitioner refers to a statement purportedly made by the wife of Respondent Buchanan but provides no record cite whatsoever for this alleged statement.

C. Facts Stated Without Supporting Record Cites.

In a three and a half page introduction, Petitioner characterizes testimony given at the evidentiary hearing in conclusory statements that inaccurately summarize the testimony. Further, Petitioner mischaracterizes motivations and positions taken by the parties. None of the conclusory statements or the characterization of the parties' motives for asserting the trade secret privilege are backed up by citations to the record or evidence offered and admitted at the evidentiary hearing. Two examples are the statements in the Petition at page 1: (i) "[A]ccording to experts for both sides in this case, about 3,000 more voters in Florida's Thirteenth District intended to cast their ballots for congressional candidate Christine Jennings than for her opponent, Vern Buchanan." (ii) "Experts for both sides also agree that these undervotes were unintended, the unfortunate consequence of something that went very wrong with Sarasota County's iVotronic electronic touch-screen voting system." There are no citations to support what is Petitioner's summary of her interpretation of expert testimony. Frankly, what

Petitioner has attempted to do is to use what is labeled as an Introduction to make additional statement of facts for which there is no record support and to incorporate therein impermissible argument.

Similarly, at page 2 of the Introduction section, Petitioner states that Defendants, by asserting the trade secret privilege, “exhibit[ed] a lack of confidence in their own technology and an even more disturbing lack of concern for the public’s trust in our democratic processes” Of course there is no record cite for such a statement because the evidence at the hearing did not demonstrate a lack of confidence in the technology. To the contrary, competent substantial evidence admitted at the December 19 and 20 hearing established that the technology was certified and tested before the election and was subjected to parallel testing after the election. A 642-660.

II. Legal Authority For the Relief Requested.

It cannot be disputed that an original proceeding for a writ of certiorari is in the nature of an appellate process. *Dade County v. Marca S.A.*, 326 So. 2d 183 (Fla. 1976). In *Dade County v. Marca* at 184 the Florida Supreme Court quoted from its earlier decision in *DeGroot v. Sheffield*, 95 So. 2d 912 (Fla. 1957) as follows:

In certiorari the reviewing court will not undertake to re-weigh or evaluate the evidence presented before the tribunal or agency whose order is under examination. The appellate court merely examines the record made below to determine whether the lower tribunal had before

it competent substantial evidence to support its findings and judgment which also must accord with the essential requirements of law. It is clear that certiorari is in the nature of an appellate process. [Emphasis added]

Because it is in the nature of an appeal, a certiorari proceeding, like an appeal, is limited to review of the matters before the lower tribunal at the time the order to be reviewed was resolved. *Matthews v. City of Maitland*, 923 So. 2d 591, 594 (Fla. 5th DCA 2006); *Agency for Health Care Admin. v. Orlando Reg'l Healthcare Sys. Inc.*, 617 So. 2d 385 (Fla. 1st DCA 1993) (holding lower court's error can be based only on evidence presented to that tribunal). Accordingly, when a party attempts to interject non-record evidence into the proceeding via their brief or petition, it is subject to being stricken by the Court.

Indeed, in ruling on a motion to strike a brief and appendix because they contained material that was not in the record on appeal, this Court has stated: "It is fundamental that an appellate court reviews determinations of lower tribunals based on the records established in the lower tribunals." *Altchiler v. State of Florida, Department of Professional Regulation, Division of Professions, Board of Dentistry*, 442 So. 2d 349, 350 (Fla. 1st DCA 1983). This Court in *Altchiler* quoted from the earlier opinion in *Hillsborough County Board of County Commissioners v. PERC*, 424 So. 2d 132, 134 (Fla. 1st DCA 1982) as follows: "An appeal has never been an evidentiary proceeding; it is a proceeding to review a judgment or order of a lower tribunal based upon the record made before the

lower tribunal. An appellate court will not consider evidence that was not presented to the lower tribunal. . . .” This Court in *Altchiler* then stated:

When a party includes in an appendix material outside the record, or refers to such material or matters in its brief, it is proper for the court to strike the same. [Citations omitted] That an appellate court may not consider matters outside the record is so elemental that there is no excuse for any attorney to attempt to bring such matters before the court.

See also, Ullah v. State of Florida, 679 So. 2d 1242, 1244 (Fla. 1st DCA 1996); *Matson v. Wilco Office Supply and Equipment Co.*, 541 So. 2d 767 (Fla. 1st DCA 1989).

Here, Petitioner’s attorneys have referred to statements by unidentified affiants, poll watchers, poll workers, technical assistants and unspecified incident reports and other non-record evidence identified above. These materials were not offered or admitted into evidence at the evidentiary hearing and cannot be considered by this Court in reviewing the Order. The Petition which relies on this improper non-record evidence should therefore be stricken.

The striking of a petition or brief is also an appropriate sanction where, as here, the petition fails to contain adequate record cites. *Williams v. Winn-Dixie Stores, Inc.*, 548 So. 2d 829 (Fla. 1st DCA 1989) (a three page summary of testimony without a record citation does not comply with Rule 9.210(b)(3) which requires reference to the appropriate pages of the record). As shown above, a portion of the Petitioner’s statement of facts is actually contained in a section titled

“Introduction” which is nothing more than a combination of a summary of Plaintiff’s view of the expert testimony, factual statements and argument without the first citation to the record to support the facts or the argument contained within that section of the Petition.

A brief or petition should also be stricken if the statement of facts is unduly argumentative. *Id.*; *Sabawi v. Carpenter*, 767 So. 2d 585 (Fla. 5th DCA 2000) (granting a motion to strike because the restatement of the case and the statement of facts were unduly argumentative). As the court in *Sabawi* stated at 586: “The purpose of providing a statement of the case and facts is not to color the facts in one’s favor or to malign the opposing party or its counsel but to inform the appellate court of the case’s procedural history and the pertinent record facts underlying the parties’ dispute.”

Here, the argumentative nature of Petitioner’s Statement of Facts is demonstrated in the Introduction section and in sub-sections III and IV of the Petition. Petition 1-4, 7-12. The section which masquerades as an Introduction is clearly a statement of facts combined with argument. Sub-sections III and IV of the Statement of Facts are also argumentative as disapproved in *Williams v. Winn-Dixie, supra*, and also contain matters immaterial and impertinent to the issue of “reasonable necessity” which was the only issue before the lower court at the December 19 and 20 evidentiary hearing. In those sub-sections Petitioner chides

Judge Gary for: (i) denying her motion for expedited discovery on November 21, an order not at issue here and which is past the time for review by certiorari and (ii) failing to hold a case management conference that was noticed at a time that the court had reserved for hearing other motions. A 417. In Petitioner's pique over this perceived slight, counsel for Petitioner actually misrepresent that it was Judge Gary who said "we don't do that" when it is clear from the record that Judge Gary was referring to what his judicial assistant stated when Petitioner's counsel tried to schedule a case management conference at a time when other hearings had already been set for the allotted time. *Id.* Such immaterial and impertinent matters should be stricken from the Petition. *Williams v. Winn-Dixie, supra.*

III. Conclusion

Based on Petitioner's inclusion in her Petition of material that was not in the record before the lower tribunal, Petitioner's failure to provide record cites to material that is clearly statements of fact and summaries of argument, Petitioner's undue argument contained in the Introduction and Statement of Facts, the inclusion of matters immaterial and impertinent to the Order to be reviewed, and the case law set forth herein, Respondent ES&S requests that the Petition be stricken.

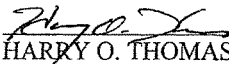
CERTIFICATE OF COMPLIANCE

I HEREBY CERTIFY that the undersigned counsel contacted Petitioner's counsel in an attempt to resolve the issues contained in this Motion but there was no resolution; Petitioner objects to this motion.

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing has been sent by facsimile or electronic transmission and U.S. Mail on this 5th day of January, 2006, to all counsel of record on the attached mailing list.

RADEY THOMAS YON & CLARK, P.A.


HARRY O. THOMAS (Fla. Bar #195097)
JEFFREY L. FREHN (Fla. Bar #817562)
Post Office Box 10967 (32302)
301 S. Bronough Street, Suite 200
Tallahassee, Florida 32301-1722
Telephone: (850) 425-6654
Facsimile: (850) 425-6694
E-mail: hthomas@radeylaw.com
jfrehn@radeylaw.com

Miguel A. De Grandy (Fla. Bar #332331)
Stephen Cody (Fla. Bar #334685)
Miguel De Grandy P.A.
800 S. Douglas Road, Suite 850
Coral Gables, Florida 33134-2088
E-mail: mad@degrandylaw.com

COUNSEL FOR DEFENDANT
ELECTION SYSTEMS &
SOFTWARE, INC.

MAILING LIST

Kendall Coffey
Coffey & Wright, LLP
2665 South Bayshore Drive
PH-2, Grand Bay Plaza
Miami, FL 33133
Telephone: (305) 857-9797
Facsimile: (305) 859-9919
E-mail: kcoffey@coffeywright.com

Mark Herron
Messer, Caparello & Self, P.A.
2618 Centennial Place
Tallahassee, FL 32308
Telephone: (850) 222-0720
Facsimile: (850) 558-0659
E-mail: mherron@lawfla.com

Donald B. Verrilli, Jr.
Sam Hirsch
Jessica Ring Amunson
Jenner & Block, LLP
601 13th Street, NW
Suite 1200 South
Washington, DC 20005
Telephone: (202) 639-6000
Facsimile: (202) 639-6066
E-mail: dverrilli@jenner.com
shirsch@jenner.com
jamunson@jenner.com

Attorneys for Plaintiff/Petitioner
Jennings

Frederick J. Elbrecht
Deputy County Attorney
Stephen E. DeMarsh
County Attorney
Sarasota County Attorney's Office
1660 Ringling Blvd., 2nd Floor
Sarasota, Florida 34236-6870
Telephone: (941) 861-7272
Facsimile: (941) 861-7267
E-mail: relbrecht@scgov.net

Attorneys for Defendant Sarasota
County Canvassing Board

Peter Antonacci
Allen C. Winsor
Gray Robinson, P.A.
P.O. Box 11189 (32302)
301 S. Bronough St., Ste. 600
Tallahassee, FL 32301
Telephone: (850) 577-9090
Facsimile: (850) 577-3311
E-mail: pva@gray-robinson.com
awinsor@gray-robinson.com

Attorneys for State Defendants

Hayden R. Dempsey, Esq.
Glenn T. Burhans, Jr., Esq.
Greenberg Traurig, P.A.
101 East College Avenue
Tallahassee, FL 32301
Telephone: (850) 222-6891
Facsimile: (850) 681-0207
E-mail: dempseyh@gtlaw.com
burhansg@gtlaw.com

Attorneys for Defendant Vern
Buchanan

Ronald A. Labasky, Esq.
Young Van Assenderp, P.A.
225 South Adams Street
Tallahassee, FL 32301
Telephone: (850) 222-7206
Facsimile: (850) 561-6834
E-mail: rlabasky@yvlaw.net

Attorneys for Defendant Kathy Dent

Lowell Finley, Esq.
Voter Action
1604 Solano Avenue
Berkeley, CA 94707
Telephone: (510) 318-2248
Facsimile: (415) 723-7141
E-mail: lfinley@wwc.com

Elliot M. Minberg, Esq.
Judith E. Schaeffer, Esq.
People for the American Way
Foundation
2000 M. Street N.W., #400
Washington, D.C. 20036
Telephone: (202) 467-4999
Facsimile: (202) 293-2672
E-mail: eminberg@pfaw.org
jschaeffer@pfaw.org

Reginald J. Mitchell, Esq.
People for the American Way
Foundation
1550 Melvin Street
Tallahassee, FL 32301
Telephone: (850) 877-0307
Facsimile: (850) 402-1999
E-mail: rmitchell@pfaw.org

Muslima Lewis, Esq.
Randall C. Marshall, Esq.
Aziza Naa-Kaa Botchway
ACLU Foundation of Florida, Inc.
4500 Biscayne Boulevard, Suite 340
Miami, FL 33137-3227
Telephone: (786) 273-2729
Facsimile: (786) 363-1448
E-mail: mlewis@aclufl.org
rmarshall@aclufl.org
abotchway@aclufl.org

Rebecca Harrison Steele, Esq.
Zeina N. Salam, Esq.
ACLU West Central Florida Office
P.O. Box 18245
Tampa, FL 33679-8245
Telephone: (813) 254-0925
Facsimile: (813) 254-0926
E-mail: rsteele@aclufl.org
zsalam@aclufl.org

Cindy A. Cohn, Esq.
Matthew J. Zimmerman, Esq.
Electronic Frontier Foundation
454 Shotwell Street
San Francisco, CA 94110
Telephone: (415) 436-9333, x127
Facsimile: (415) 436-9993
E-mail: cindy@eff.org
mattz@eff.org

Attorneys for Fedder Plaintiffs

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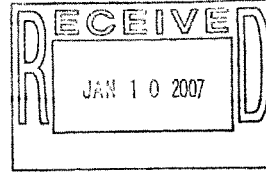
DISTRICT COURT OF APPEAL
FIRST DISTRICT
STATE OF FLORIDA
301 S. MARTIN LUTHER KING, JR. BLVD.
TALLAHASSEE, FLORIDA 32399-1850
(850) 488-6151

JON S. WHEELER
CLERK OF THE COURT

KAREN ROBERTS
CHIEF DEPUTY CLERK

January 9, 2007

Chairwoman Juanita Millender-McDonald
Congress of the United States
House of Representatives
Committee on House Administration
1309 Longworth House Office Building
Washington, D.C. 20515-6157



RE: Christine Jennings, et al v. Elections Canvassing Commission etc., et al.
Case No.: 1D07-11

Dear Chairwoman Millender-McDonald:

Thank you for your letter of January 4, 2007, regarding the above-referenced case. I appreciate Congress's interest and concern in this matter, but I must write to inform you that I am limited by Florida law in what matters may be filed in the case or presented to the court for consideration.

As I am sure your legal counsel will advise you, pleadings submitted to the court are limited to those filed by parties or their counsel in a case. In that your committee is not a proper party in this case, I am constrained from being able to present your letter in its current format to the court. Those who are not parties to a case may seek permission of the court to present arguments. The proper way to have matters considered by the court in making its determination would be to seek permission of the court to file a pleading on behalf of one side or the other as an amicus curiae. Of course, any such pleading should be served on all the parties so that they may support or object to your filing matters in this case that deal with the merits. I refer you to Florida Rule of Appellate Procedure 9.370 dealing with amicus curiae briefs and also Florida Rule of Judicial Administration 2.510 (Formerly Rule 2.061) dealing with foreign attorneys.

While I appreciate your interest in these matters, I am sure you understand that I am constrained as clerk of the court in the processing of pleadings addressing cases filed in this court when submitted by a non-party unless permitted to be filed by this court's order.

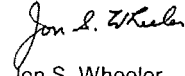
SA-90

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Page 2
January 9, 2007

I hope this information is of assistance to you.

Sincerely yours,



Jon S. Wheeler
Clerk of the Court

JSW/mm

cc:

Kendall Coffey, Esq.	Mark Herron, Esq.	Donald B. Verrilli, Jr., Esq.
Reginald J. Mitchell, Esq.	Sam Hirsch, Esq.	Jessica Ring Amunson, Esq.
Matthew J. Zimmerman, Esq.	Muslima Lewis, Esq.	Randall C. Marshall, Esq.
Rebecca Harrison Steele, Esq.	Lowell Finley, Esq.	Judith E. Schaeffer, Esq.
Aziza Naa-Kaa Botchway, Esq.	Zeina N. Salam, Esq.	Cindy A. Cohen, Esq.
Ronald A. Labasky, Esq.	Allen C. Winsor, Esq.	Hayden R. Dempsey, Esq.
Glenn T. Burhans, Jr., Esq.	Peter Antonacci, Esq.	Frederick J. Elbrecht, Esq.
Miguel De Grandy, Esq.	Jeffrey L. Frehn, Esq.	Harry O. Thomas, Esq.
Elliott M. Mincberg, Esq.	Hon. William Gary, Judge	

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IN THE DISTRICT COURT OF APPEAL
FIRST DISTRICT OF FLORIDA
CASE NO. 1D07-11
LT CASE NO. 2006 CA 2973

CHRISTINE JENNINGS, as nominee of the Democratic Party
for Representative in Congress from the State of
Florida's Thirteenth Congressional District,

Petitioner,

vs.

ELECTIONS CANVASSING COMMISSION OF THE
STATE OF FLORIDA, et al.

Respondents.

**RESPONDENT ELECTION SYSTEMS & SOFTWARE, INC.'S
RESPONSE TO PETITIONER CHRISTINE JENNINGS'
EMERGENCY PETITION FOR A WRIT OF CERTIORARI AND
VOTER PLAINTIFF'S JOINDER**

On Petition for a Writ of Certiorari to the Circuit Court,
of the Second Judicial Circuit, in and for Leon County
The Honorable William L. Gary

Miguel A. De Grandy
Stephen M. Cody
MIGUEL DE GRANDY, P.A.
800 Douglas Road, Suite 850
Miami, Florida 33134
Telephone: (305) 444-7737
Facsimile: (305) 443-2616

Harry O. Thomas
Jeffrey L. Frehn
RADEY THOMAS YON & CLARK, P.A.
301 S. Bronough Street, Suite 200
Tallahassee, Florida 32301-1722
Telephone: (850) 425-6654
Facsimile: (850) 425-6694

Counsel for *Respondent Election Systems & Software, Inc.*

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REFERENCES

Throughout this Response, Respondent Election Systems & Software, Inc. will be referred to as “ES&S.” Petitioner Christine Jennings will be referred to as “Petitioner.” Petitioner Ellen Fedder and the ten other Sarasota County voters will be referred to collectively as “Voter Plaintiffs.” Petitioner and Voter Plaintiffs will be referred to collectively as “Petitioners.” Citations to the Florida Statutes, and references to Section, Sections, Subsection or Subsections, shall be to the Florida Statutes (2006). Citations to the record will be referred to as “(A. __)” for documents included within Petitioner’s Appendix and as “(ES&S A. __)” for documents included within ES&S’ Appendix.

I. INTRODUCTION

Petitioner Christine Jennings (“Petitioner”), a candidate in the November 2006, election for Florida’s Thirteenth Congressional District, filed suit contesting the results of the election which certified Congressman Vern Buchanan as the winner. In addition, Ellen Fedder and ten other Sarasota County voters, (collectively, “Voter Plaintiffs”) filed a similar lawsuit which was consolidated with Petitioner’s action.

Petitioner subsequently amended her complaint to add Election Systems and Software, Inc. (“ES&S”) as a defendant, and moved to compel production of proprietary technology and trade secrets of ES&S. Pursuant to controlling case law, Judge Gary scheduled an evidentiary hearing to give Petitioner and Voter Plaintiffs an opportunity to demonstrate that reasonable necessity for production of the trade secret materials existed. Following a two day evidentiary hearing Judge Gary issued an Order on Motions (the “Order”) denying the motions to compel. Petitioner Jennings then filed an Emergency Petition for Writ of Certiorari (“Petition”) before this Court contesting Judge Gary’s Order. Voter Plaintiffs filed a joinder in the Petition.

Petitioners seek to overturn the trial court’s Order and thereby take possession of both the electronic voting machines used by Sarasota County in the November 2006 election and the source code developed by ES&S which operates

the electronic voting machines. Petitioners' intent is to have their experts tear apart the machines and review the source code to determine if a software bug or mechanical malfunction might have been the reason Petitioner lost the November 2006 election. (A. 82-83) If Petitioners are permitted to take possession of the voting machines and source code: (i) ES&S will lose its trade secrets and thereby suffer irreparable harm; and (ii) the security of the state's voting system will be at risk because Petitioners will, contrary to law, be given unfettered possession of the source code and actual electronic ballots cast which are contained in the memory within the electronic voting machines.

However, as Judge Gary found, based upon the evidence presented, Petitioners failed to establish reasonable necessity for production of the source code and voting machines. Among other reasons, the court also found no reasonable necessity because there were reasonable alternatives for determining the existence of a software bug or machine malfunction including the pre-election and post-election testing conducted by the Secretary of State in the presence of Petitioners. The court also weighed the evidence presented by Petitioners' witnesses and found that the testimony was based on conjecture and speculation.

In affording an evidentiary hearing, the court provided to Petitioners the essential requirements of law. Additionally, the court's findings are supported by

competent substantial evidence and the result comports with statutory requirements for testing and maintaining the security of the state's voting system.

II. PROCEDURAL BACKGROUND

On November 20, 2006, pursuant to Section 102.168, Florida Statutes, Petitioner Jennings filed a complaint to contest the results of the November 7, 2006, general election for the United States House of Representatives for Florida's Thirteenth Congressional District.¹ Respondent ES&S was not named as a defendant in the complaint filed on November 20, 2006. (A. 1-22) Appended to the November 20, 2006, complaint were declarations of Charles Stewart III and Dan S. Wallach. (A. 23-113)

On November 20, 2006, Petitioner also filed and served a request for production of documents and inspection of tangible things. Among the things requested to be produced and inspected were the following: (i) iVotronic voting machines; (ii) personalized electronic ballots ("PEBs"); (iii) communications pack; (iv) the PEB reader; (v) the source code to the iVotronic system; (vi) the source code to all elements of the Unity software suite; (vii) the source code to the personalized electronic ballots; (viii) the firmware and software mounted on the

¹ On November 21, 2006, Ellen Fedder and ten other Sarasota County voters, (collectively, "Voter Plaintiffs") filed suit to contest the election for the United States House of Representatives for Florida's Thirteenth Congressional District. ES&S was not named as a defendant by Voter Plaintiffs. (A. 181-197) On November 28, 2006, the Voter Plaintiffs' suit was consolidated with Petitioner's suit. (A. 204-205)

iVotronic voting machines in the custody of Sarasota County; (ix) all files loaded onto an iVotronic machine as part of the “ballot programming process”; (x) materials pertaining to development tools, scripts, “makefiles” and other software used in the November 2006 general election in Sarasota County to compile, debug and test the iVotronic system, PEBs, and elements of the Unity software suite; (xi) user manuals, operator manuals and training materials related to the use, operation or maintenance of any part of the iVotronic system, the Unity software suite or any of its elements, or the PEBs; and (xii) any materials necessary to extract and read the “three redundant memories” contained within the iVotronic machines (collectively, the “Source Code and Proprietary Technology”). (A. 114-121)

On November 20, 2006, along with the complaint and request to produce and inspect, Petitioner also served a motion to compel expedited discovery requesting that the trial court grant the motion by noon on November 21, 2006, and enter an order compelling Defendants to comply with the discovery sought by 5:00 p.m. on November 22, 2006. (A. 122-132)

The trial court held a hearing on the motion to compel expedited discovery on November 21, 2006. (A. 133-176) At this hearing the trial court was advised for the first time that the Source Code and Proprietary Technology were trade secrets owned by ES&S. (A. 158, 162) The trial court denied the request for production to occur the next day and instead gave defendants fifteen days to

respond to the discovery. The trial court also denied the request for production of the Source Code and Proprietary Technology and advised Petitioner that ES&S needed an opportunity to be heard. (A. 174-175, 178-179) Finally the trial court ordered that Petitioner's experts could attend and observe the parallel tests that were being conducted on the voting machines by the Secretary of State. (*Id.*) Since ES&S was not a party to the suit, the trial court suggested to Petitioner that ES&S be served with a subpoena *duces tecum*. (A. 175-176)

Instead of serving a subpoena on ES&S, Petitioner waited nine days and on November 30, 2006, filed an amended complaint naming ES&S as a defendant. (A. 206-230) Also on November 30, 2006, Petitioner filed two motions: (i) a motion to compel production of the Source Code and Proprietary Equipment within the possession, custody and control of the State of Florida, (A. 232-240); (ii) a motion for entry of a protective order addressing the production of ES&S' Source Code and Proprietary Technology. On December 7, 2006, Petitioner also moved to compel the production of ES&S' Source Code and Proprietary Technology that was in the custody and control of Sarasota County.² (A. 241-252) Notably, Petitioner conceded, for purposes of its filings, that ES&S' Source Code and Proprietary Technology constitute trade secrets. (A. 245)

² Also on December 7, 2006, Voter Plaintiffs filed a motion to compel and a joinder to Petitioner's motions to compel. (A. 372-401)

The amended complaint was served on ES&S on December 4, 2006. (A. 273) On December 5, 2006, Petitioner set the motion to compel and motion for protective order for a non-evidentiary hearing on December 15, 2006. (*Id.*) On December 6, 2006, ES&S filed a motion requesting 15 days to respond to Petitioner's motions to compel and for protective order and requested an evidentiary hearing. (A. 271-298)

On December 8, 2006, Judge Gary held a hearing on ES&S' motion requesting fifteen days to respond and an evidentiary hearing. (A. 414-463) At the hearing all parties conceded that ES&S' Source Code and Proprietary Technology were trade secrets. (A. 444, 460-461) The order entered by Judge Gary following the hearing set an evidentiary hearing to commence December 19, 2006, which was to be limited to the reasonable necessity for the production of ES&S' Source Code and Proprietary Technology. (A. 484-485) The hearing was scheduled to run through noon on December 20. No party objected to the limited scope of the hearing established by Judge Gary.

On December 18, 2006, ES&S filed a pre-hearing memorandum of law in opposition to Petitioner's motions to compel and for entry of a protective order. (A. 486-523) Commencing on December 19 and concluding on December 20, 2006, the trial court conducted an evidentiary hearing. (A. 524-566, 583-638)

On December 22, 2006, Petitioner, Voter Plaintiffs, ES&S and Respondent Buchanan submitted post-hearing briefs as requested by Judge Gary. Respondent Dent submitted her post-hearing brief on December 21, 2006. (A. 708-792)

On December 29, 2006, Judge Gary entered the Order denying the motions to compel and for protective order filed by Petitioner and Voter Plaintiffs. (A. 806-809)

III. STATEMENT OF FACTS BASED ON EVIDENCE PRESENTED AT THE EVIDENTIARY HEARING

A. Pre-Election Testing.

ES&S iVotronic electronic voting machines and the software used by those machines were certified for use in Florida pursuant to Section 101.015, Florida Statutes, on July 17, 2006, by the Division of Elections of the Florida Department of State. (A. 644-645) Sarasota County used optical scan ballots for absentee voters and ES&S' iVotronic voting machines in early and absentee voting in the November 7, 2006, general election.

In order to be used in early voting and on Election Day, both the iVotronics machines and the software were subjected to logic and accuracy testing pursuant to Section 102.5612(1)(2)(4), Florida Statutes. (A. 648-649) The logic and accuracy tests in Sarasota County demonstrated that the iVotronics voting machines worked properly. (A. 650-651)

B. Post-Election Parallel Testing.

On November 28, 2006, the Secretary of State's Bureau of Voting Systems Certification ("BVSC") conducted a parallel test of Sarasota County's iVotronic voting machines. (A. 653-660) This first of two parallel tests utilized a random selection of iVotronic machines from a pool of machines that were not deployed during the general election. (A. 653) The test scripts that were developed for use by "test-voters" were based on the audit data extracted from a sample of iVotronic touch screen devices. (A. 654) Additionally, test scripts also considered the voting experience of several voters that were described in various news articles. Five machines were selected to perform the test. (*Id.*) Four machines were tested using the pre-determined scripts and the remaining iVotronic served as an *ad hoc* test vehicle. (A. 655) The machines were set up in a vertical orientation to allow the public and parties to witness the test team's interaction with the touch screens and to facilitate videotaping the tests. (A. 657) Five video cameras were utilized to record the test-voter's interaction with the machines. (*Id.*) The public was able to observe the test through a set of windows as well as wide screen monitors in the public viewing area. (*Id.*) Representatives of the Jennings and Buchanan campaigns were present for the test. (A. 653)

At the conclusion of the first parallel test, the results reported by the machines were compared to the pre-determined scripts. (*Id.*) There were several

variances noted. BVSC reconciled and identified the reason for these variances, using among other tools, the video recordings of the test voter's interaction with the machine. (*Id.*) This process was conducted in the presence of technical representatives of both candidates' campaigns. (*Id.*) All variances were proven to be the result of human error, not machine malfunction. (*Id.*) After all variances were successfully reconciled, the test results demonstrated 100 percent accuracy of the iVotronic equipment in reporting the vote selections as indicated on the review screens. (A. 659) There were no unresolved anomalies. (*Id.*) Nor did the reported voter difficulties in making or changing votes, which BVSC sought to replicate, materialize during this test. (*Id.*)

On December 1, 2006, BVSC conducted the second parallel test utilizing five selected iVotronic machines that were actually deployed on Election Day. (A. 653, 655) The test also utilized ancillary equipment such as the master Personalized Electronic Ballots ("PEB"), poll worker activated PEBs, and compact flash cards that were used on Election Day. (*Id.*)

In the second test, BVSC also accepted constructive feedback provided by the Jennings organization and experience gained from the first parallel test to substantially improve its test documentation during the second parallel test. (A. 657) BVSC asked each candidate to provide a list of precincts that in their opinion warranted close examination. (A. 654) The Jennings campaign provided a list of

precincts. (*Id.*) The Buchanan campaign recommended a random selection. (*Id.*) Two machines that experienced the highest percentage of undervotes were randomly selected from the precincts identified by the Jennings campaign, and two machines were identified through a random selection process using MS Excel. (*Id.*) BVSC provided this opportunity for candidates to select the machines to be employed because this selection would enhance the probability of revealing the undervote anomaly, should it exist. (*Id.*) The fifth machine was a touch screen from Precinct 117. (A. 655). This fifth machine was utilized for the same *ad hoc* exercise performed in the first parallel test. In the presence of Jennings' technical representatives and the media, the results of the second parallel test were reconciled. (A. 653) The few variances observed were again conclusively proven to be a result of human error, not machine malfunction such that the second test was also successful in demonstrating 100 percent machine accuracy in recording the vote selections. (A. 659)

C. Testimony Presented at the Evidentiary Hearing on Issue of Reasonable Necessity.

At the beginning of the evidentiary hearing on December 19, all parties acknowledged that the purpose of the hearing was to address the limited issue of reasonable necessity for ES&S to produce trade secret materials. (A. 525) Although the hearing was scheduled to conclude at noon on December 20, 2006, Judge Gary extended the hearing through 3:00 p.m. on December 20 and advised

all counsel throughout the hearing that all parties would be given a meaningful opportunity to present their case and if the hearing was not completed on December 20, the Court would schedule the time on another day as necessary for all parties to have an opportunity to present their case. (A. 565, 621)

Petitioner called two witnesses: Charles Stewart III and Dan S. Wallach and put Exhibits 1-10 into evidence. (A. 525-566, 567-582, 583-603) Voter Plaintiffs called no witnesses and offered no exhibits.

Stewart, a political scientist, testified as an expert witness in the fields of voting technology, residual votes and statistical analysis of election data. (A. 531) Stewart was retained by Petitioner to research and analyze three topics: (i) the size of the undervote and whether it was excessive; (ii) the likely distribution of the vote between the two candidates had there not been an excess of undervote; and (iii) to research the possible causes for the excess undervote. (*Id.*)

While Stewart testified on all three topics the only opinion he expressed that was relevant to the reasonable necessity issue was his testimony that his statistical analysis suggests a possibility that factors related to machine problems or machine malfunctions may have contributed to the excess undervote and thereby affected the results of the race. (*Id.*, A. 28, 545) In addition to his statistical analysis, Stewart hypothesized that inattention by employees of Sarasota County who cleared and tested the machines may have driven up the undervote rate on those

voting machines that were cleared and tested on a day when a number of machines were prepared on the same day. (A. 541, 579-580) However, on cross-examination, Stewart admitted that his hypothesis that inattention to clearing and testing voting machines may have driven up the undervote rate was not evidence of voting machine malfunction or the presence of a software bug. (A. 543)

Stewart further testified on cross-examination regarding his declaration which is an exhibit to Petitioner's complaint. Stewart's declaration is the basis for Petitioner's complaint allegation that statistical evidence alone indicates that the undervote was due to malfunctioning of the iVotronic voting machines. (A. 8, 23-78) With respect to his declaration, Stewart admitted that his conclusion that the difference in undervote rates between counties was likely caused by the use of iVotronic voting machines was not an opinion that the undervote was caused by voting machine malfunction or a software bug. (A. 543-544) For instance, an undervote resulting from the "use" of the voting machine could include a voter who was confused by the ballot layout as it appeared on the voting machine. Stewart also admitted that the undervote rate in the Thirteenth Congressional District race in Sarasota County was not anomalous when the undervote rate in Sarasota County was compared to undervote rates in other races in other counties within the Thirteenth Congressional District. (A. 544) Stewart could only find an anomaly when he compared the undervote rate in the Thirteenth Congressional

District race to other county-wide races contested in only Sarasota County. (A. 544)

Moreover, Stewart testified that his statistical analysis provided no direct evidence that a software bug or machine malfunction caused the undervote and he could not identify any specific problems associated with the use of electronic voting machines that caused excessive undervoting. (A. 545) Stewart admitted on cross-examination that he found no evidence of a physical malfunction of the voting machines. (*Id.*) Finally, Stewart admitted that the sole basis for the conclusion in his report that machine malfunction was one of two possible explanations for the high undervote was a newspaper report that voters had called and reported voting problems. (A. 546) Stewart did not know how many voters called the newspaper and he did not interview any voters. (*Id.*) The remaining possible explanation for the high undervote according to Stewart was voter confusion caused by ballot layout, the same explanation for the undervote testified to by ES&S' witness, Professor Michael Herron. (*Id.*, A. 620-621)

Professor Wallach was called by Petitioner and testified as an expert in the field of electronic voting technology. Wallach was retained by Petitioner to investigate whether there was some kind of software bug or malfunction, and like Stewart, Wallach had prepared a declaration that was attached as an exhibit to Petitioner's complaint. (A. 79-113; 558) Wallach testified regarding his desire to

review the source code to determine how the software would behave and identified three potential software bugs that he would look for if he had access to the Source Code and Proprietary Technology. (A. 561-563, 59)

Through Wallach, Petitioner introduced Exhibit 10, a small computer program prepared by Wallach to show not only what source code looks like but to demonstrate how software bugs are detected by reviewing source code.³ (A. 561) Wallach was cross-examined with regard to Exhibit 10 and admitted that it would not be necessary to review the source code to identify the software bug in Exhibit 10 because the error could be detected by the fact that the total votes cast for all candidates would be higher than the number of actual voters. (A. 585-586)

On cross-examination, Wallach testified that he had five hypothesis that might explain the undervote: (i) voter abstention, (ii) human error, (iii) software bug, (iv) post-election corruption, and (v) malicious software. However, after considering his five hypothesis Wallach reached no conclusion as to the cause of the undervote. (A. 81-83, 584, 587)

Wallach testified that the best way to test the voter abstention hypothesis was through considering the statistics for voters in Sarasota County using iVotronic machines with voters in other counties in the Congressional district not

³ Petitioner failed to include Exhibit 10 in her appendix and mislabeled the exhibits she did include. Attached as ES&S' Appendix is the Exhibit 10 referred to in Wallach's testimony.

using iVotronic machines. (A. 81, 587) Wallach admitted that voter surveys would not be a valid method for testing this hypothesis because voters would lie to help their candidates. (*Id*)

Wallach testified that the human error hypothesis could also explain the undervote. (A. 81-82, 587) To test this hypothesis Wallach suggested that a statistical comparison of counties with similar ballot presentation be conducted or that parallel testing of the machines be conducted which would demonstrate human error. (*Id*) Wallach testified that Professor Stewart did not conduct a statistical analysis of other races in Florida with similar ballot configurations. (A. 587)

Wallach's third hypothesis to explain the undervote was the existence of a software bug. To validate this hypothesis Wallach wrote and testified that a videotaped parallel test should be conducted to compare the machine reported totals to the original input. If the results differed in the Congressional race it would prove the existence of a software bug. (A. 82-83, 588)

Wallach testified that parallel testing can show the presence of software bugs but could not prove, beyond any doubt whatsoever, the absence of software bugs. (A. 591) However, on further questioning, Wallach admitted that in his experience he had never seen a software bug which caused a voting machine to create undervotes for a specific candidate during an election avoid detection in parallel testing. (A. 601) Wallach was not present at either the logic and accuracy testing

conducted by Sarasota prior to the November election or the post-election parallel testing, nor had he, at the time of his testimony, even read the state's report of the results of the parallel tests. (A. 584-585, 590) Ultimately Wallach admitted that parallel testing was not his expertise. (A. 595) Wallach did not disagree that a review of the source code sought here could take years and still might not reveal the existence of a software bug, assuming one exists. (A. 586)

Wallach's fourth hypothesis to explain the undervote was post-election corruption. (A. 83, 589) Wallach testified that since the recount process already conducted provided a check against post-election corruption, he did not believe such corruption was likely and there was no evidence to date supporting this hypothesis. (A. 589)

Wallach's fifth hypothesis to explain the undervote was malicious software, meaning that software or firmware in the voting machines might have been illegitimately modified. (A. 83, 589) To test this hypothesis the voting machines would have to be physically disassembled to access internal memory chips and extract their content. (A. 83) Wallach testified that he had no evidence to support this hypothesis. (A. 589)

On December 20, ES&S introduced eight exhibits that were admitted into evidence and called one witness, Professor Michael Herron ("Herron"). (A. 603-638, 639-707) Herron, a political science professor from Dartmouth, testified as an

expert on elections and voting patterns. (A. 604-605) Herron presented evidence that the undervote in Sarasota County was not the result of a mechanical or software problem, but was caused by the ballot design chosen by Sarasota County. (A. 604-621)

In conducting his study of the undervote in the Thirteenth Congressional District election, Herron gathered precinct data from Sarasota County, plus precinct data from Broward, Charlotte, Collier, Desoto, Hardee, Hillsborough, Jackson, Lake, Lee, Manatee, Martin, Miami-Dade, Nassau, Palm Beach, Pasco, Pinellas, and Sumter Counties. (A. 605-606, 663) He was also able to collect from these counties the ballot images, the records of how individual voters voted, but stripped of any identifying information, such as name or ethnicity, or even the time that the voter cast his ballot on the machine. (A. 606, 664)

Herron described the ballot layout in Sarasota County. The first ballot screen listed six Senatorial candidates and a line to write in a candidate's name. The second ballot screen showed two races: District Thirteen, with its two candidates, Buchanan and Jennings, and the Governor's race, with six candidates and a space for a write-in. (A. 679-680) Herron found that those voters who skipped races, and therefore undervoted, generally skipped numerous elections. For example, he found that voters who skipped the U.S. Senate race tended to skip an average of 10.8 races, while voters who voted in the Senate race skipped, on

average, only 2.8 other races. Similarly, those voters who skipped the Governor, Attorney General, Chief Financial Officer, or Agriculture Commissioner races tended to skip, on average 9.6 to 13.1 other races. However, the voters who undervoted in the District Thirteen election only skipped an average of 4.7 elections. (A. 616, 693)

These voting patterns caused Herron to investigate further. He sorted the ballot images of voters who undervoted in District Thirteen and grouped them by similarity of voting pattern. Persons who voted a straight Republican and straight Democratic ticket recorded undervoters, as did those voters who split their tickets among the top statewide races, the Charter Review Commission seats, the judicial retention elections, and the State constitutional amendments. In short, Herron did not find any "magic" combinations of votes cast which were likely to trigger an undervote. (A. 672) In fact, when Herron plotted the different combinations of voting patterns, he found that Republicans were just as likely to have undervoted as Democrats.

Based on this finding, Herron widened his analysis beyond District Thirteen and found factors which could have contributed to the undervote. While there was no correlation between the age of a voter and his or her undervote in the U.S. Senate race, there was a correlation between the age of the voters and their undervoting in the District Thirteen election. (A. 612, 676) Herron found that for

precincts with more voters of at least seventy-six years of age, the higher the undervote rate was in those precincts in the Thirteenth Congressional District race.

(Id.)

Herron also investigated whether the ballot formats in the counties within District Thirteen could explain the unusually high rate of undervoting in Sarasota County. In Charlotte County, the U.S. Senate race was on the first ballot screen by itself, and the District Thirteen race was on the second page, also by itself. The third page had the Governor's race on the top of the third page, with the Attorney General's race on the bottom of that page. (A. 682-684) In Charlotte County, the undervote rates in the Senate and Governor races were relatively low, while 11,377 of the 55,774 voters who voted in Charlotte County did not vote in the Attorney General's race, for an undervote rate of 25 percent, which was higher than in Sarasota County's District 13 race. (A. 694) Moreover, the voters who skipped the Senate, Gubernatorial, CFO, and Agriculture Commissioner tended to skip, on average, between 8.8 and 10.5 other elections, while voters who skipped the Attorney General race only skipped an average of 3.8 other races. *(Id.)*

The ballot in Lee County followed a format similar to that used in Charlotte County, with the Attorney General's race below the Governor's, after being preceded by the Senate race by itself on the first page. (A. 617) In Lee County, there were 26,864 undervotes in the Attorney General race, for a total undervote

rate of 21 percent, which again, was higher than in Sarasota County's District Thirteen race. (A. 697) The voters who skipped the Senate, Gubernatorial, CFO, and Agriculture Commissioner races tended to skip, on average, between 12 and 14 other elections, while voters who skipped the Attorney General race only skipped an average of 6.3 other races. (*Id.*) Herron also found this same pattern in Sumter County, which put the Attorney General's race below the Governor's race and after a single screen containing the Senate race. (A. 618-619) There, the undervote rate in the Attorney General's race was 24 percent, higher than the undervote rate seen in the District Thirteen race in Sarasota County. The patterns previously discussed show up in Sumter County, as well. (A. 619, 702) Herron also examined ballot formats in Collier, Jackson, Miami-Dade, Lake, Nassau, and Pasco counties. (A. 616-620)

From this multi-county review of ballot formats and image files of actual votes cast, which Petitioners' experts had not done, Herron concluded that voters are primed by the initial number of races per ballot page. When there is only a single race on the first page of a ballot or single races on the first several pages, voters are more likely to be confused and undervote on the first page thereafter which contains multiple races, which is what occurred in Sarasota County in the Thirteenth Congressional District race. (A. 613, 678) Herron also demonstrated that voter confusion can be aggravated by certain demographic characteristics,

such as the advanced age of the voter. (*Id.*) Ultimately, Herron testified that, within a reasonable degree of certainty acceptable within the social sciences, the undervote in Sarasota County in the Congressional District 13 election was the result of voter confusion caused by the ballot format. (A. 620-621)

D. Findings of Fact by Judge Gary.

Based on the evidence presented at the evidentiary hearing Judge Gary found that it was not reasonably necessary for Petitioners to have access to ES&S' trade secrets. In support of this finding, the trial court also found the following: (i) Sarasota County's electronic voting machines were tested as required by law and were found to be working properly; (ii) a post election audit was conducted on the voting system to verify its accuracy; (iii) two parallel tests were conducted on the electronic voting machines and the test results revealed 100 percent accuracy of the equipment in reporting the vote selections; (iv) representatives of both plaintiff and defendants were present for the parallel tests; (v) plaintiffs presented no evidence to demonstrate that the parallel testing was flawed and/or that the results were not valid; and (vi) the testimony of plaintiffs' experts (Stewart and Wallach) was conjecture and not supported by credible evidence. (A. 806-809)

IV. JURISDICTION AND STANDARD OF REVIEW

The requirements for a writ of certiorari are stated in *Martin-Johnson, Inc. v. Savage*, 509 So. 2d 1097, 1098-99 (Fla. 1987), as follows:

[C]ommon law certiorari is an extraordinary remedy A non-final order for which no appeal is provided by Rule 9.130 is reviewable by petition for certiorari only in limited circumstances. The order must depart from the essential requirements of law and thus cause material injury to the petitioner throughout the remainder of the proceedings below, effectively leaving no adequate remedy on appeal.

The Second District in *Barker v. Barker*, 909 So. 2d 333, 337 (Fla. 2d DCA 2005), wrote:

A departure from the essential requirements of the law necessary for the issuance of a writ of certiorari is something more than a simple legal error. There must be a violation of a clearly established principle of law resulting in a miscarriage of justice. [Citation omitted] A decision made according to the form of the law and rules prescribed for rendering it, although it may be erroneous in its conclusion as applied to the facts, does not rise to the necessary level.

Petitioners argue that the trial court's findings of fact were contrary to the evidence. However, the Florida Supreme Court has stated that the "writ of common law certiorari ... is *not* the proper procedure for challenging findings of fact, unless the fact-finding process has been marred by a departure from essential procedural requirements. In common law certiorari proceedings, findings of fact in the lower court are ordinarily conclusive." *Chicken 'N' Things v. Murray*, 329 So. 2d 302, 304 (Fla. 1976) (emphasis added). *See also Coral Reef of Key Biscayne Developers, Inc. v. Lloyd's Underwriters at London*, 911 So. 2d 155 (Fla. 3d DCA 2005) (in certiorari proceeding "court will not disturb the trial court's findings of fact unless those findings are not supported by competent substantial evidence"). *Cf. Department of Children and Families v. Clem*, 903 So. 2d 1011 (Fla. 5th DCA

2005) (“it is doubtful that we have certiorari jurisdiction to decide whether the trial court’s determination was supported by competent substantial evidence. . . . In addition, we are not entitled to reweigh the evidence”).

Further, Petitioners are challenging rulings by the trial court resolving a question of admissibility as to a public record and a discovery matter relating to the trade secret privilege. Such rulings are subject to the abuse of discretion standard. *See Rosaler v. Rosaler*, 442 So. 2d 1018 (Fla. 3d DCA 1983) (“[t]he trial court has wide discretion in its treatment of requests for discovery and the court’s ruling will not be disturbed unless an abuse of that discretion has been shown”); *Jimenez v. Gulf & Western Manufacturing Co.*, 458 So. 2d 58, 59 (Fla. 3d DCA 1984) (“the admission of evidence is a matter within the sound judicial discretion of the trial judge, whose decision in that regard must be viewed in the context of the entire trial”).

Finally, Petitioners rely on matters that are outside the evidentiary record that was the basis for the trial court’s decision. For instance, section II of the statement of facts in Petitioner Jennings’ Petition (entitled “Contemporaneous Evidence Pointed to Pervasive Malfunctioning of Sarasota County’s iVotronic System”) characterizes as fact certain eyewitness accounts of voting problems, even though Petitioner offered no evidence to substantiate these accounts at the evidentiary hearing. Similarly, the Voter Plaintiffs’ Joinder cites to voting

problems by the Voting Plaintiffs despite the fact that none of the Voter Plaintiffs testified via affidavit or otherwise. Because these alleged “facts” were not part of the record before the trial court, the Court cannot consider them in reviewing the trial court’s decision. *Dade County v. Marca, S.A.*, 326 So. 2d 183 (Fla. 1976) (citing “well established rule applicable to this certiorari proceeding that the reviewing court’s consideration shall be confined strictly and solely to the record of proceedings by the agency or board on which the questioned order is based”); *State v. Hanna*, 901 So. 2d 201, 209 (Fla. 5th DCA 2005) (“certiorari is a record-based review procedure”).

V. ARGUMENT

A. **The Trial Court did not depart from the essential requirements of law in denying Petitioners’ Motion to Compel Production of ES&S’ Proprietary Technology based on the trade secret privilege.**

Petitioners allege in their amended complaint that the undervote in Sarasota County was due to a malfunction or “bug” in the software of ES&S’ iVotronic voting system. Relying on this allegation, Petitioners assert that they have a right to compel the state to produce the iVotronic voting system’s Source Code and Proprietary Technology, which are trade secrets of ES&S.

Florida courts have held that in order to properly weigh competing interests in litigation regarding disclosure of trade secrets, the court is required to inform itself by conducting an evidentiary hearing. *See Beck v. Dumas*, 709 So. 2d 601-

603 (Fla. 4th DCA 1998); *see also Uniroyal Goodrich Tire Company v. Eddings*, 673 So. 2d 131 (Fla. 4th DCA 1996). The conditions for the exercise of the Court's power to compel discovery of trade secrets is "governed by the facts of each case." *Goodyear Tire & Rubber Co. v. Cooley*, 359 So. 2d 1200, 1202 (Fla. 1st DCA 1978)(citing *Ray v. Allied Chemical Corp.*, 34 F.R.D. 456 (S.D. N.Y. 1964)).

Florida case law establishes a three-prong analysis for determining whether disclosure of trade secrets is appropriate. First, a threshold determination will usually require that a trial court conduct an *in camera* inspection of the materials in question to determine whether they are, in fact, trade secrets. *See American Express Travel Related Services, Inc. v. Cruz*, 761 So. 2d 1206 (Fla. 4th DCA 2000). However, as will be discussed, *infra*, an *in camera* inspection was not necessary in this case as a result of the Petitioners' stipulation that the materials they were requesting were trade secrets.

Second, once the materials in question are determined to contain trade secrets, the burden shifts to the party seeking production to establish that there is a "reasonable necessity" for the requested materials, in order to compel production. *See Rare Coin-It, Inc. v. I.J.E., Inc.*, 625 So. 2d 1277 (Fla. 3d DCA 1993). Finally, if a reasonable necessity for disclosure of the trade secret information is established, the party seeking production must further show that the necessity for the privileged information outweighs the harm that disclosure would cause the

trade secret owner. *See Inrecon v. Village Homes at Country Walk*, 644 So. 2d 103, 105 (Fla. 3d DCA 1994).

- 1. Based on Petitioner's stipulation and court's instructions, ES&S was not required to introduce evidence to establish that items requested were trade secrets or that economic harm would result from their disclosure.**

Petitioner argues that there was no evidence of harm to ES&S that would result from disclosure of its trade secrets, and therefore the court erred in refusing to compel production of these items. However, based on Petitioners' stipulation and the instructions of the lower court, this argument has no merit.

Section 688.002(4), Florida Statutes, states in pertinent part that a trade secret is defined as

information, including a formula, pattern, compilation, program, device, method, technique or process that: (a) *Derives independent economic value, actual or potential, from not being generally known to and not being readily ascertainable by proper means* by, other persons who can obtain economic value from its disclosure or use, and; (b) Is the subject of efforts that are reasonable under the circumstances to maintain its secrecy. (Emphasis added.)

The trade secret status of the materials that Petitioner and Voter Plaintiffs sought to discover was never at issue. In her Motion for Entry Of A Protective Order filed on November 30, 2006, Jennings conceded that the items that were the subject of the Motion to Compel were trade secrets, as defined by law. (A. 241-253) On December 7, 2006, the Voter Plaintiffs filed their Joinder to Petitioner's Motion to Compel and Voter Plaintiffs' Motion to Compel. (A. 373) In this

document, the Voter Plaintiffs asserted that “With no party contesting trade secrecy status in order to facilitate the production of discoverable materials, plaintiffs need only demonstrate a ‘reasonable necessity’ for the information.” (A. 383)

At the December 8, 2006 hearing, ES&S made it clear that it had requested only one full day of evidentiary hearing, premised on the understanding that the parties had stipulated that the proprietary technology in question was a trade secret. (A. 420-421) Counsel for ES&S advised the court below that if it was necessary to prove this issue, a much longer evidentiary hearing would be required. (*Id.*) Counsel for Petitioner vehemently opposed even a one day evidentiary hearing, arguing:

[W]e would certainly, certainly emphasize that, yes, there’s no dispute, we’re saying it’s a trade secret. And of course, that’s exactly why you don’t need a full day when all you’re really assessing is the traditional judicial function of determining relevancy and considering the intended factors. These are trade secrets. *And we’ve heard a lot from Mr. Thomas (counsel for ES&S) about the value of them to him....*” (A. 444)

The court acknowledged the parties’ stipulation, stating: “there is no issue on whether or not we have a trade secret here. Everybody sit up and say that’s a trade secret so for the -- it’s a trade secret.” (A. 460)

A straightforward reading of Florida’s trade secret statute leaves no doubt that there was simply no need to produce any evidence of harm because, as a

matter of law, once the items are determined to be trade secrets, disclosure is presumed to cause economic harm. Otherwise, it would not be a trade secret under Florida Law.

At the December 8 hearing, the trial court clearly indicated in open court, without objection, that the scope of the evidentiary hearing on December 19-20 would be limited to the reasonable necessity issue. (A. 444, 460-461) The trial court subsequently confirmed this by entering an order stating that the December 19-20 hearing “will be limited to the issue of the reasonable necessity for the production of ES&S’ trade secret materials. ...” (A. 484-485) Notably, at no time did Petitioners ask the trial court to expand the scope of the hearing to include other issues such as the harm to ES&S that would result from disclosure. ES&S clearly relied on the Petitioners’ stipulation and the trial court’s order. As a result, having failed to object to what all parties understood the scope of the hearing to be, Petitioners cannot now argue that the trial court erred by not considering other issues besides reasonable necessity. *See Beck, supra* at 603 (“[t]he parties had agreed (for the purpose of the hearing) that the requested materials were a trade secret. Thus, the hearing was for Dumas to show reasonable necessity for the requested materials”).

2. Petitioners failed to meet their threshold burden of showing a reasonable necessity for the disclosure of ES&S' trade secrets.

Florida courts have established a high evidential threshold before trade secrets will be disclosed, requiring the party seeking production to show that the trade secrets are *reasonably necessary* to their case. This is especially true in cases dealing with computer software. *Beck v. Dumas*, 709 So. 2d 601, 603 (Fla. 4th DCA 1998). Here, the Petitioner was required to show that the trade secrets in question are indispensable, meaning that there was no *reasonable*, as opposed to ideal, substitute that she could turn to if the trade secrets are not disclosed. *Goodyear Tire & Rubber Co. v. Cooley*, 359 So. 2d 1200, 1202 (Fla. 1st DCA 1978) (“the general rule is stated as follows: ‘... Disclosure of trade secrets is not required on discovery except in such cases and to such extent that the disclosure is *indispensable* to the ascertainment of the truth’”) (emphasis added). The reasonable necessity standard is applied even more stringently where the trade secret is being sought from a witness rather than a party. In *Inrecon*, *supra* at 105, the Third District wrote:

“The rule that allows a party to request production of its opponent’s records ‘is in no sense designed to afford a litigant an avenue to pry into his adversary’s business or go on a fishing expedition to uncover business methods, confidential relations, or other facts pertaining to the business.’” *Federal Deposit Ins. Corp. v. Balkany*, 564 So.2d 580, 581 (Fla. 3d DCA 1990). *The foregoing observation applies with greater force where, as here, the discovery sought is from a witness, not a party.*

(Emphasis added.)

Here, although ES&S has been named as a defendant, it is not a proper party. Section 102.168, Florida Statutes, lists the proper and indispensable parties to an election contest, and ES&S, as the vendor that sold the voting equipment to Sarasota County, is not on that list. *See Jackson County Hospital Corp. v. Aldrich*, 835 So. 2d 318, 329 (Fla. 1st DCA 2002) (“[i]t is a well-settled principle that when ‘a statute specifically enumerates those persons to be covered, ordinarily the statute will be construed as excluding from its operation all those other persons not expressly mentioned.’”) Because ES&S is a private entity with no lawful authority to provide Petitioner the remedy she seeks in this lawsuit, there was no reason to make ES&S a defendant, other than for the improper purpose of making it easier to obtain ES&S’ trade secrets. As a result, for purposes of the analysis of the relative positions of the parties, ES&S should be treated not as an adverse party, but as a witness who is entitled to greater protection with respect to its trade secrets.

In this case, the trial court found that Petitioners failed to prove reasonable necessity for accessing ES&S’ trade secrets. Because this finding is supported by competent, substantial record evidence, it must be deemed conclusive for purposes of this proceeding. *Chicken ‘N’ Things*, 329 So. 2d at 304.

Indeed, an examination of the record reveals that Plaintiffs presented absolutely no credible evidence to establish a reasonable necessity for ES&S’ trade

secrets. The Petitioner did not advance *one* theory as to why there was undervoting in her Congressional election, she put forth *an entire menu*. Professor Stewart, Petitioner's political science expert, posited several potential reasons for the undervote. As noted, *supra*, his theory regarding inattentive or careless conduct by Sarasota County Election employees during the clear and test process was not evidence of voting machine malfunction or the presence of a software bug. (A. 543) Moreover, this theory was discredited by the evidence which showed that the machines were subjected to a subsequent examination immediately prior to the election, known as a "zero tape" operation. (A. 585) In this examination, the machine is connected to a printer and a report is produced which verifies that the machine has an empty memory and no votes stored. (*Id.*) Dr. Wallach conceded during his cross-examination that this test would verify that the machines had an empty memory, thereby confirming that the clear and test had been done correctly. (*Id.*) For all of the statistical analysis that Stewart conducted, he admitted that his analysis provided "no direct evidence of any particular causes" or any problem with the source code or any software bugs or even any hardware malfunctions. (A. 545) The only other support that Stewart had for his supposition that a machine malfunction caused the undervote was an article that stated that callers to a newspaper reported problems, but he admitted that he did not even interview any of the voters. (A. 546)

Professor Wallach, Petitioner's computer expert, testified that he also had five hypotheses that might explain the undervote. This shotgun approach, saturated with academic speculation but devoid of factual support, led the lower court to properly conclude that the testimony of these two witnesses was "conjecture" and not supported by credible evidence. (A. 808) *See Desmond v. Medic Ayers Nursing Home*, 492 So. 2d 427, 429 (Fla. 1st DCA 1986) ("any conclusions or opinions 'of an expert witness based on facts or inferences not supported by the evidence in a cause [have] no evidential value'").

Wallach testified that he had never seen a software bug that caused an undervote for a particular candidate in actual voting, but did not show up in a parallel test. (A. 586) At the evidentiary hearing, the Petitioner failed to explain, other than through academic speculation, how this "undervote bug" could escape detection in pre and post-election system tests.

The trial court was also entitled to reject Wallach's testimony because of his acknowledged bias against electronic voting systems. The record shows that Wallach is associated with a group called "thecomputeratemyvote.com," an organization that opposes the use of paperless electronic voting machines. (A. 584) Wallach testified that "trade secrecy is not appropriate in electronic systems." (A. 590) Regardless of whether a candidate lost by 10, 20, or even 50 points, Wallach testified that he would still want to see the source code. (A. 586-587)

In addition, the testimony of Petitioner's two experts conflicted, allowing the trial court the liberty to reject them both. Wallach's report and testimony set forth the protocols accepted in the social sciences for determining whether a high undervote rate may be indicative of machine malfunction or a confusing ballot layout (human error). This involves an analysis of ballot layouts in other counties in Florida using touch screen voting equipment to compare the rate of undervoting in races that had a ballot layout similar to Sarasota County's. (A. 587-588) However, Stewart confined his analysis solely to counties within District Thirteen. (A. 531, 568-570)

a. The trial court correctly applied the reasonable necessity standard rather than the likelihood of success standard.

Petitioners argue that the trial court was applying a "reasonable likelihood of success standard" rather than the "reasonable necessity" standard. *See* Petition at 32. To the contrary, in finding that Petitioners had no basis for their allegation of a voting machine malfunction, the trial judge was not applying the likelihood of success standard. Instead, the trial court was exercising its discretion to deny Petitioners' request to confiscate ES&S' trade secrets where the need for the discovery was premised on a completely baseless allegation. Indeed, the record is devoid of *any* evidence that the undervote at issue was caused by a voting machine malfunction or software bug.

Under these circumstances, the trial court did not abuse its discretion in denying Petitioners' motions to compel the production of trade secrets. Under Florida law, absent any evidence whatsoever to support their allegation of a voting machine malfunction, Petitioners had no right to initiate the lawsuit in the first place. *See Moral Majority, Inc. v. Broward County Chapter of the National Organization for Women, Inc.*, 606 So. 2d 630, 630 (Fla. 4th DCA 1992) (addressing defendant's motion for attorney fees under Sections 772.104, 895.05(7), and 57.105, Florida Statutes):

While any plaintiff has the power to initiate a lawsuit, the right to do so is a limited one. The limits are, *inter alia*, those prescribed and proscribed by the statutes relied on by appellant here. Those limits were exceeded by appellees as exemplified by the trial court's finding there was not a scintilla of evidence to support their allegations against appellant.

Where the complaint itself is frivolous and unauthorized, Petitioners are not entitled to rely on the allegations therein to justify a fishing expedition into the privileged materials of ES&S, which should be viewed and afforded the same protections as privileged materials of a non-party witness. *Cf. Winn-Dixie Stores, Inc. v. Miles*, 616 So. 2d 1108, 1110 (Fla. 5th DCA 1993) (“[a]bsent some sort of basis for suspecting that Yandell is biased, Winn-Dixie should not be allowed to engage in an extensive fishing expedition which may prove worthless”).

To conclude otherwise would essentially allow any voter to obtain the state's voting system's source code merely by alleging a malfunction, even when that

allegation is completely frivolous. As the trial judge correctly observed, to allow the discovery of ES&S' trade secrets under these circumstances would "destroy 'or at least gut' the protections afforded those who own the trade secrets."

b. Evidence demonstrated the existence of alternative and less intrusive methods to detect machine malfunction or software problems.

However, even if the trial court could not consider the fact that Petitioners' malfunction allegations were groundless, Petitioners overlooked the trial court's other findings, which clearly supported his no reasonable necessity determination. In particular, the trial court's findings indicate that there is another method available for detecting the existence of a malfunction. This method, known as a parallel test, which is an election simulation that is based on actual election data, does not require the examination of the source code or ES&S' other trade secrets.

Clearly, the fact that a voting machine malfunction can be detected via a parallel test means that Petitioners can reasonably investigate their allegations of a malfunction without the necessity of the source code. This, therefore, is not a case where access to a trade secret is essential to proving the allegations in the complaint, which refutes Petitioners' reasonable necessity argument. Because there is a less intrusive alternative that would allow Petitioners to make their case even without disclosure of ES&S' trade secrets, the trial court did not abuse its

discretion in denying Petitioners' requested discovery. *See Goodyear, supra* at 1202.

Notably, Petitioners' expert conceded that parallel testing "can demonstrate beyond a doubt that a problem exists." (A. 591) Nevertheless, Petitioners assert that an examination of the source code is still reasonably necessary because it is the only way to "conclusively" *disprove* the existence of a software bug. (A. 591) This is based on the testimony of Petitioners' expert that it is *theoretically* possible that a software bug that resulted in a twelve percent undervote rate could escape detection during a parallel test no matter how many test votes are cast. (A. 588, 591)

Petitioners' argument must be rejected for several reasons. First, the trial court found the testimony of Petitioners' expert on this issue to be "nothing more than conjecture and not supported by credible evidence." Indeed, Petitioners' expert himself conceded that he has never seen a software bug "cause a voting machine to create undervotes for a specific candidate during an election but not show up at all in parallel testing." (A. 601) Because the trial court's finding is supported by the record, it is conclusive for purposes of this certiorari proceeding.

Even assuming the possibility of a software bug that could cause a twelve percent undervote in an election, yet show a zero undervote in a parallel test, Petitioners failed to show that such a possibility was anything but theoretical and

remote. In fact, Petitioners' expert testified that he could not assign probabilities as to the likelihood of a parallel test *not* detecting a software bug. (A. 591) In any event, such a remote, theoretical possibility would not preclude the trial court's consideration of the parallel test as a reliable, alternative method for investigating the undervote.

The trial court found Petitioners presented "no evidence to demonstrate that the parallel testing was flawed and/or the results not valid." Petitioners urge the Court to reject this finding as being contrary to the record, citing attempts by Petitioners' expert to criticize the parallel test methodology. However, this testimony does not constitute competent evidence, as the trial court found the testimony of Petitioners' expert not to be credible. Indeed, it was reasonable for the trial court to discount the expert's criticisms of the parallel tests where the expert had neither observed the parallel tests nor read the subsequently issued report describing the tests and admitted that parallel testing was not his expertise. (A. 584-585, 590, 595) Because the record reveals no *competent* evidence offered by the Petitioner on this issue, the trial court's finding is conclusive.

Alternatively, even if Petitioners had offered *some* evidence identifying potential flaws in how the state conducted its parallel tests, this would not demonstrate reasonable necessity for ES&S' trade secrets. At most, the criticisms by Petitioners' expert indicate that there may be ways to make the state's parallel

tests even more reliable and thus less likely to miss a software bug. And, to the extent that the state's parallel tests were flawed, the Petitioners' remedy is not to seek disclosure of the source code, but to challenge the procedures for the parallel tests in the trial court.

3. Because Petitioners failed to demonstrate reasonable necessity, there was no need for the trial court to balance the interests of the parties.

Petitioners spent a significant portion of their petitions complaining that the court below failed to conduct a balancing of interests, or consider whether a protective order could minimize the potential for harm to ES&S. Petitioners' assertion that the trial court was required to do more after finding no reasonable necessity is simply wrong.

Petitioners simply fail to understand the sequence of analysis established by Florida case law. The balancing of interests test is the third prong in an incremental analysis. A demonstration of reasonable necessity is a condition precedent to compelling the disclosure of a trade secret. As a result, where (as here) a trial court finds reasonable necessity lacking, the trial court cannot order the production of the trade secret. It would therefore be pointless for the trial court to consider other factors (including the harm to ES&S), which would not overcome the absence of reasonable necessity and could only provide additional reasons to deny the requested discovery.

In fact, courts have found other issues, including the harm disclosure would cause under a protective order, to be irrelevant once a no reasonable necessity determination has been made. *See Rare Coin-it v. I.J.E., Inc., supra* at 1278 (“[p]roduction of the source code, without a showing and finding of reasonable necessity, would cause [the owner of the trade secret] irreparable harm. This is true even when the trial court orders production subject to a protective order.”)

B. The trial court properly admitted the state’s Parallel Test Summary Report which confirmed that the voting system did not malfunction.

As their last argument, Petitioners contend that the trial court’s no reasonable necessity ruling hinges on the state’s Parallel Test Summary Report which the trial court erred in admitting under the public record exception to the hearsay rule for two reasons. First, Petitioners assert that the report is not a public record within the meaning of section 90.803(8), Fla. Stat., and is therefore inadmissible hearsay. Second, Petitioners assert that, based solely on the criticisms of the parallel tests by their own experts, other circumstances show the report’s lack of trustworthiness.

Petitioners’ argument is unfounded. First, there was nothing requiring the trial court to strictly apply the Rules of Evidence in a hearing on a preliminary question dealing with discovery and the existence of a privilege. *Cf. Bee Line Entertainment Partners v. State*, 791 So. 2d 1197, 1205-06 (Fla. 5th DCA 2001):

In deciding whether the admission of hearsay evidence was appropriate during a hearing concerning the entry of a preliminary injunction, a number of courts have held that “the court may rely on hearsay evidence and may even give inadmissible evidence some weight.” [Citations omitted.] We agree with those courts, because there was more than just hearsay presented.

However, even if the Rules of Evidence were strictly applicable, the Parallel Test Summary Report is *admissible* hearsay pursuant to the public record exception of the hearsay rule, which states in relevant part as follows:

PUBLIC RECORDS AND REPORTS.--Records, reports, statements reduced to writing, or data compilations, in any form, of public offices or agencies, setting forth the activities of the office or agency, *or matters observed pursuant to duty imposed by law as to matters which there was a duty to report . . .*, unless the sources of information or other circumstances show their lack of trustworthiness. . . .

§ 90.803(8), Fla. Stat. (emphasis added).

In this case, the state clearly had a statutory duty to conduct, observe and report on any testing of the voting system, which would include the parallel tests that are the subject of the state’s report. *See, e.g.*, § 101.58(1), Fla. Stat., which states in part:

The Department of State may, at any time it deems fit . . . or upon the petition of any candidate . . . appoint one or more deputies whose duties shall be to observe and examine the . . . condition, custody, and operation of voting systems and equipment in any county or municipality. . . . The deputy shall file with the Department of State a report of his or her findings and observations of the registration and election processes in the county or municipality, and a copy of the report shall also be filed with the clerk of the circuit court of said county. [Emphasis added]

Because the Parallel Test Summary Report contains “matters observed pursuant to duty imposed by law as to matters which there was a duty to report,” it is admissible as a public record or report. See *Desmond v. Medic Ayers Nursing Home*, 492 So. 2d 427, 430-31 (Fla. 1st DCA 1986) (state epidemiologist’s report regarding staph infection epidemic at nursing home admissible under the public records exception to the hearsay rule).

Petitioners’ reliance on *Lee v. Department of Health & Rehabilitative Services*, 698 So.2d 1194 (Fla. 1997), is misplaced. In *Lee*, the court was considering whether certain portions of an abuse report which included statements by the victim and other patients were admissible under section 90.803(8), Fla. Stat. Because these statements did not concern matters observed by the agency itself, but instead concerned matters observed by persons outside the agency, that part of the public records hearsay exception which covers “matters observed pursuant to duty imposed by law” did not apply.⁴ In refusing to admit this portion of the abuse report, the *Lee* court also noted that Florida’s hearsay exception, unlike its federal counterpart, did not include an exception for a third type of record which covers “a record setting forth factual findings resulting from an investigation made pursuant

⁴ See Charles W. Erhardt, *Florida Evidence* § 803.8 at 924 (2006 ed.) (“[t]he type of record encompassed by this portion of the exception is a record based upon a public official’s own first-hand observation of an event. In order to be admitted under this portion of the exception ... the source of information must have personal knowledge of the information recorded, as the phrase ‘matters observed’ implies.”)

to authority granted by law.” As stated by Charles W. Erhardt in *Florida Evidence*, § 803.8 at 925 (2006 ed.), which was relied on by the Supreme Court, “[t]he purpose of this provision in the Federal Rules is to provide for the admission of records and reports by a public official when the official is required to interpret and evaluate facts and information supplied by persons outside the agency.”

Clearly, the facts in the current proceeding are distinguishable from *Lee, supra*. In this case, the Parallel Test Summary Report contains matters observed by the public officials themselves who were overseeing the testing process and had first-hand knowledge of the facts set forth therein. Unlike the report in *Lee*, the Department of State’s report merely documents how the test was performed and sets forth the observations made in the conduct of the test as well as the results reported by the machines. Therefore, the Parallel Test Summary Report squarely fits within the hearsay exception for “matters observed” and reported by a public agency.

The Petitioners’ argument that the report should have been rejected by the court because it lacked trustworthiness is also without merit. First, Petitioners failed to raise this particular objection at the time the report was offered and it is therefore waived. See *W. R. Grace & Co. v. Dougherty*, 636 So. 2d 746, 749 (Fla. 2d DCA 1994) (“an appellate court may consider objections to admissibility of evidence only on grounds specifically stated at trial, and when the appellant raises

a different ground on appeal, the point is not preserved”); *Wykle v. State*, 659 So. 2d 1287 (Fla. 5th DCA 1995) (where appellant objected at trial to admission of hearsay statement under Section 90.803(23), Florida Statutes, but did not raise paragraph (23)(c), the appellant could not raise objection based on (23)(c) on appeal).

Alternatively, assuming the objection was not waived, the trial court did not abuse its discretion in not rejecting the Parallel Test Summary Report on the grounds that “other circumstances” show its lack of trustworthiness. As the trial court found, “Plaintiffs have presented no evidence to demonstrate that the parallel testing was flawed and/or the results not valid.” Petitioners point to criticisms of the report by their experts; however, the trial court appropriately rejected this testimony as not being credible, as neither expert had observed the testing or read the report. In any event, such criticisms relate to the weight to be given to the report, but not to its admissibility. Petitioners’ suggestion of bias on the part of the State officials in conducting the parallel tests also has no support in the record. Indeed, there is a contrary presumption of integrity on the part of public officials which Petitioners failed to rebut with any record evidence. *See* Charles W. Erhardt, Florida Evidence § 803.8 at 920:

Because of the accuracy of public records, resulting from the duty of public officials to accurately record matters, and from the public’s scrutiny of public records, the records have sufficient guarantees of

truthfulness. In addition, public officials lack any motive to falsify the entries.

Additionally, the circumstances of how the test was conducted show reliability and trustworthiness. The tests were conducted “in the Sunshine” and the media as well as the general public were allowed to observe. (A. 652-707) The candidates were also allowed to observe and provide input. (*Id.*) Indeed, *Petitioner was even permitted to designate precincts from which the test machines were selected. (Id.)*

Assuming, *arguendo*, that the trial court erred in admitting the Parallel Test Summary Report, this error was harmless because the trial court’s findings regarding the results of the parallel tests and the machines functioning properly are supported by other competent, substantial evidence. *See Jimenez v. Gulf & Western Manufacturing Co.*, 458 So. 2d 58 (Fla. 3d DCA 1984) (concluding that the “admission of evidence on the OSHA and ANSI standards in this case was harmless in light of the other, substantial, competent evidence presented”). First, Petitioners overlook the fact that the results of the pre-election test — the logic and accuracy test — were admitted into evidence without objection. (A. 603, 648-651) Under Florida law, voting equipment must undergo logic and accuracy testing prior to be used in an election.⁵ The trial court admitted the certification by Kathy

⁵ Under section 101.5612(2), at least 10 days prior to the commencement of early voting, the supervisor of elections of a County must have the automatic tabulating equipment publicly tested to ascertain that the equipment will correctly count the votes cast for all offices and on all measures. Section 101.5612(4)(a)1 provides

Dent, the Supervisor of Elections for Sarasota County, that the result of the logic and accuracy test showed that the voting equipment was functioning properly. (A. 648-51) The pre-election results mirror the post-election parallel test.

Second, ES&S offered without objection a public statement issued by the Department of State which announced the results of the first parallel test. According to this uncontested document, “[n]o anomalies were discovered in the machines; they functioned exactly as designed.” (A. 642) Before ES&S offered the Parallel Test Report for admission into evidence, Petitioners’ expert had already testified, without objection by Petitioners, as to the results of the parallel tests. (A. 584-585, 594, 596, 599, 600)

Any error was also harmless because, even if ES&S had not offered the Parallel Test Summary Report, Petitioners’ case would still be predicated on “conjecture and speculation.” In other words, Petitioners had failed to offer evidence establishing a *prima facie* case of reasonable necessity, and therefore

that either all or a sample of the devices to be used in the election shall be publicly tested. If a sample is tested, at least 2 percent of the touch screen machines must be tested by holding a scripted, mock election with a pre-determined outcome. *Id.* If any tested device is found to have an error in tabulation, it must be deemed unsatisfactory and the canvassing board must take steps to determine the cause of the error, and must attempt to identify and test other devices that could reasonably be expected to have the same error, and must also test a number of additional devices sufficient to determine that all devices are satisfactory. § 101.5612(4)(a)2, Fla. Stat.

failed to meet their burden of proof regardless of whether ES&S offered any evidence at all.

C. Even absent ES&S' trade secret privilege, Petitioners are barred by the election laws and the discovery rules from confiscating the state's voting system and electronic records to conduct their own tests.

Petitioners seek an order compelling the state to hand over to them the state's voting system and electronic ballots stored therein so that they can conduct their own tests to ascertain whether the system malfunctioned. Petitioners base this request on the bald assertion that "the adversarial system generally and Florida's election-contest statute specifically entitled each candidate to conduct his or her own tests." (Petition at 9) In fact, Petitioners' position is at odds with both the election laws and the discovery rules that apply in adversarial proceedings.

In this regard, it is clear that the election laws seek to protect the integrity and security of the election process by limiting access to the voting system to the agencies responsible for overseeing the elections process. For instance, Section 101.34, Florida Statutes, designates the county supervisor of elections as the sole custodian of the voting system. Notably, no statute or rule authorizes possession of the voting system by any other person or entity.

Moreover, the Legislature has specifically assigned the responsibility for examining and testing the voting systems to the agencies responsible for overseeing elections. Although others may have a right to participate in the testing

of the voting system to assure openness and fairness, that participation is expressly limited to an observational role. *See, e.g.*, § 101.5607(1)(c), Fla. Stat. (“[t]he Department of State may, at any time, review the voting system of any county to ensure compliance with the Electronic Voting Systems Act”); § 101.58(1), Fla. Stat. (“[t]he Department of State may, at any time it deems fit . . . or upon the petition of any candidate . . . appoint one or more deputies whose duties shall be to observe and examine the . . . condition, custody, and operation of voting systems and equipment in any county or municipality”); § 101.5612(2), Fla. Stat. (requiring the supervisor of elections to publicly test the voting systems to confirm that they will correctly count the votes cast, and allowing each political party to designate a person to be present during such tests, but stating that such “designee shall not interfere with the normal operation of the canvassing board”). District Judge James I. Cohn, wrote in *Wexler v. Lepore*, 342 F. Supp.2d 1097, 1108 (S.D. Fla. 2004):

Concerns about physical and communication security, software configuration, and system malfunction are investigated and dealt with by the State during the certification process. Both prior to and after certifying the machines, the State has procedures and testing mechanisms in place to ensure that the machines work accurately.

(Emphasis added) *Cf.* § 101.572, Fla. Stat. (allowing public inspection of ballots, but stating that “no persons other than the supervisor of elections or his or her employees or the county canvassing board shall handle any official ballot or ballot

card”); Rule 1S-9.005(6)(c), F.A.C. (“any ballot transportation or tabulation must be done under the supervision and control of the affected supervisor of elections or municipal clerk who shall at all times have the responsibility to ensure the safety and safekeeping of the ballots and election results”).

In short, having expressly authorized only certain agencies or officials to examine or test the voting system, the inescapable conclusion is that the Legislature intended to preclude testing by others. *Jackson County Hospital*, 835 So. 2d at 329 (Fla. 1st DCA 2002) (“when ‘a statute specifically enumerates those persons to be covered, ordinarily the statute will be construed as excluding from its operation all those other persons not expressly mentioned”). This would necessarily include disappointed candidates and voters like the Petitioners in this case who have initiated an election contest. To conclude otherwise would require the state to transfer custody of the voting system and electronic voting records contained therein to persons whose primary interest is in overturning an election rather than serving the public interest. Clearly it would not be possible for the state to assure the integrity and security of the voting system under these circumstances.

Plaintiffs’ claim that “Florida’s election-contest statute specifically entitled each candidate to conduct his or her own tests” is unfounded. There is absolutely nothing in the election contest statute, Section 102.168, Florida Statutes, which purports to give any litigant the right to confiscate the state’s voting system.

Indeed, given the fact that every voter has standing to initiate an election contest, the election process would likely grind to a halt in any case involving numerous voter-plaintiffs if each could demand custody of the voting system to test their theory of the case.

Nor does the fact that an election contest is adversarial in nature compel a different conclusion. The discovery rules upon which the Petitioners rely do not trump the provisions of the election laws that limit outside access to the state's electronic voting system. Moreover, even if this were a non-election suit between private litigants, the discovery rules would *not* give a plaintiff the right to access (by way of comparison) the computer system of his adversary except in rare circumstances, particularly given the possibility of damage to the system. *See Menke v. Broward County School Board*, 916 So. 2d 8 (Fla. 4th DCA 2005):

[W]e held that rule 1.350(a)(3) was broad enough to encompass requests to examine a computer hard drive but only in limited and strictly controlled circumstances. . . . [I]ntrusive searching of the entire computer by an opposing party should not be the first means of obtaining the relevant information.

Where a need for electronically stored information is demanded, such searching should first be done by defendant so as to protect confidential information, unless, of course, there is evidence of data destruction designed to prevent the discovery of relevant evidence in the particular case. . . . In fact, in the few cases we have found across the country permitting access to another party's computer, all have been in situations where evidence of intentional deletion of data was present. [Citations omitted]

See also *Eugene J. Strasser, M.D., P.A. v. Bose Yalamanchi, M.D., P.A.*, 669 So. 2d 1142 (Fla. 4th DCA 1996) (requiring plaintiff to show as a condition to accessing defendant's computer system that "there is no other less intrusive manner to obtain the information," such as having the search performed by defendant's representative).

Menke and Strasser, supra, refute Petitioners' position that the discovery rules require that they be allowed to personally conduct the testing of the voting system. In fact, the limitations imposed on requests to search computer systems should be applied even more strictly in this case given the great public interest in assuring the security and integrity of the voting system. Here, the record conclusively shows that there is a less intrusive method for determining whether the voting system malfunctioned, which is to have the voting system tested by the state agency responsible for conducting such tests. Because Petitioners' discovery requests are inconsistent with the election laws, and because there is a less intrusive method for obtaining the requested information, the trial court properly denied Petitioners' motions to compel.

VI. CONCLUSION

Based on the foregoing record facts and the law applicable thereto, ES&S respectfully submits that Petitioner Jennings' Emergency Petition for Writ of Certiorari and the Voter Plaintiffs' joinder therein must be denied.

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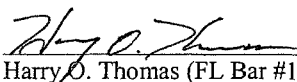
CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing has been sent by electronic transmission and U.S. Mail on this 9th day of February, 2007, to all counsel of record on the attached mailing list.

CERTIFICATE OF COMPLIANCE

I HEREBY CERTIFY that this Response complies with the font requirements of Fla. R. App. P. 9.100(l), by using Times New Roman 14-point font.

Respectfully submitted,



Harry O. Thomas (FL Bar #195097)
Jeffrey L. Frehn (FL Bar #817562)
RADEY THOMAS YON & CLARK, P.A.
Post Office Box 10967 (32302)
301 S. Bronough Street, Suite 200
Tallahassee, Florida 32301-1722
Telephone: (850) 425-6654
Facsimile: (850) 425-6694

Miguel A. De Grandy (FL Bar #332331)
Stephen M. Cody (FL Bar #334685)
MIGUEL DE GRANDY, P.A.
800 S. Douglas Road, Suite 850
Coral Gables, Florida 33134-2088

COUNSEL FOR RESPONDENT
ELECTION SYSTEMS &
SOFTWARE, INC.

SA-150

MAILING LIST

Kendall Coffey
 Coffey & Wright, LLP
 2665 South Bayshore Drive
 PH-2, Grand Bay Plaza
 Miami, FL 33133
 Telephone: (305) 857-9797
 Facsimile: (305) 859-9919
 E-mail: kcoffey@coffeywright.com

Mark Herron
 Messer, Caparello & Self, P.A.
 2618 Centennial Place
 Tallahassee, FL 32308
 Telephone: (850) 222-0720
 Facsimile: (850) 558-0659
 E-mail: mherron@lawfla.com

Donald B. Verrilli, Jr.
 Sam Hirsch
 Jessica Ring Amunson
 Jenner & Block, LLP
 601 13th Street, NW
 Suite 1200 South
 Washington, DC 20005
 Telephone: (202) 639-6000
 Facsimile: (202) 639-6066
 E-mail: dverrilli@jenner.com
shirsch@jenner.com
jamunson@jenner.com

Attorneys for Plaintiff/Petitioner
 Jennings

Frederick J. Elbrecht
 Deputy County Attorney
 Stephen E. DeMarsh
 County Attorney
 Sarasota County Attorney's Office
 1660 Ringling Blvd., 2nd Floor
 Sarasota, Florida 34236-6870
 Telephone: (941) 861-7272
 Facsimile: (941) 861-7267
 E-mail: relbrecht@scgov.net

Attorneys for Defendant Sarasota
 County Canvassing Board

Peter Antonacci
 Allen C. Winsor
 Gray Robinson, P.A.
 P.O. Box 11189 (32302)
 301 S. Bronough St., Ste. 600
 Tallahassee, FL 32301
 Telephone: (850) 577-9090
 Facsimile: (850) 577-3311
 E-mail: pva@gray-robinson.com
awinsor@gray-robinson.com

Attorneys for State Defendants

Hayden R. Dempsey
 Glenn T. Burhans, Jr.
 Greenberg Traurig, P.A.
 101 East College Avenue
 Tallahassee, FL 32301
 Telephone: (850) 222-6891
 Facsimile: (850) 681-0207
 E-mail: dempseyh@gtlaw.com
burhansg@gtlaw.com

Attorneys for Defendant Vern
 Buchanan

Ronald A. Labasky
Young Van Assenderp, P.A.
225 South Adams Street
Tallahassee, FL 32301
Telephone: (850) 222-7206
Facsimile: (850) 561-6834
E-mail: rlabasky@yvlaw.net

Attorneys for Defendant Kathy Dent

Lowell Finley
Voter Action
1604 Solano Avenue
Berkeley, CA 94707
Telephone: (510) 318-2248
Facsimile: (415) 723-7141
E-mail: lfinley@wwc.com

Elliot M. Minberg
Judith E. Schaeffer
People for the American Way
Foundation
2000 M. Street N.W., #400
Washington, D.C. 20036
Telephone: (202) 467-4999
Facsimile: (202) 293-2672
E-mail: eminberg@pfaw.org
jschaeffer@pfaw.org

Reginald J. Mitchell
People for the American Way
Foundation
1550 Melvin Street
Tallahassee, FL 32301
Telephone: (850) 877-0307
Facsimile: (850) 402-1999
E-mail: rmitchell@pfaw.org

Muslima Lewis
Randall C. Marshall
Aziza Naa-Kaa Botchway
ACLU Foundation of Florida, Inc.
4500 Biscayne Boulevard, Suite 340
Miami, FL 33137-3227
Telephone: (786) 273-2729
Facsimile: (786) 363-1448
E-mail: mlewis@aclufl.org
rmarshall@aclufl.org
abotchway@aclufl.org

Rebecca Harrison Steele
Zeina N. Salam
ACLU West Central Florida Office
P.O. Box 18245
Tampa, FL 33679-8245
Telephone: (813) 254-0925
Facsimile: (813) 254-0926
E-mail: rsteele@aclufl.org
zsalam@aclufl.org

Cindy A. Cohn
Matthew J. Zimmerman
Electronic Frontier Foundation
454 Shotwell Street
San Francisco, CA 94110
Telephone: (415) 436-9333, x127
Facsimile: (415) 436-9993
E-mail: cindy@eff.org
mattz@eff.org

Attorneys for Fedder Plaintiffs

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IN THE FIRST DISTRICT COURT OF APPEAL
STATE OF FLORIDA

Case No. 1D07-11

CHRISTINE JENNINGS, ET AL.,

Appellants/Petitioners,

v.

ELECTION CANVASSING COMMISSION; ET AL.,

Appellees/Respondents.

RESPONSE OF CONGRESSMAN VERN BUCHANAN
TO PETITIONS FOR WRIT OF CERTIORARI

On Petitions for Writ of Certiorari to the Circuit Court of the
Second Judicial Circuit, Leon County

GLENN T. BURHANS, JR.
HAYDEN R. DEMPSEY
M. HOPE KEATING
GREENBERG TRAURIG, P.A.
101 EAST COLLEGE AVENUE
TALLAHASSEE, FL 32301
(850) 222-6891

*Counsel for Respondent
Vern Buchanan*

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PRELIMINARY STATEMENT

Before this court is a very narrow issue: whether petitioners met their burden of proving reasonable necessity to obtain what all parties agree is trade secret information of respondent Election Systems & Software, Inc. (“ES&S”). The trade secret petitioners seek is ES&S’s source code for the iVotronic touchscreen voting machines used by Sarasota County in the 2006 general election. Petitioners’ claimed need for the source code is based upon their allegations in the underlying election contest that a machine malfunction caused the rejection of a number of legal votes for Ms. Jennings sufficient to change or place in doubt the result of the election for United States Representative for the 13th Congressional District of Florida.

Upon petitioners’ motions to compel production of the trade secret source code, the trial court held an evidentiary hearing to determine whether petitioners could demonstrate reasonable necessity to gain access to the protected materials. During the two day evidentiary hearing the trial court heard and weighed testimony from three expert witnesses and considered some 18 exhibits admitted into evidence. Two of those experts and 10 of those exhibits were offered by Ms. Jennings in support of her claim of reasonable necessity. After evaluating all of the evidence and the post-hearing briefs of the parties the trial court concluded that the “testimony of [Ms. Jennings’] experts was nothing more than conjecture and

not supported by credible evidence.” The trial court found that “the machines now challenged were tested as required by law prior to the early voting and election day voting and were found to be working properly.” The trial court also held that the State of Florida’s post-election parallel testing of the iVotronic machines demonstrated “100% accuracy of the equipment in reporting the vote selections” and that Ms. Jennings presented “no evidence to demonstrate that parallel testing was flawed and/or the test not valid.”

The trial court concluded that petitioners’ claim of reasonable necessity for the source code was based on nothing more than “conjecture and speculation” and held that the petitioners failed to satisfy their burden of demonstrating reasonable necessity so as to outweigh ES&S’ statutory trade secret protection. In doing so the trial court denied petitioners’ motions to compel. Petitioners appeal from that order denying their motions to compel.

STATEMENT OF FACTS*General Background*

Christine Jennings lost the 2006 general election to the United States House of Representatives for the 13th Congressional District of Florida to respondent Congressman Vern Buchanan by 369 votes. (A:532).¹ As a result, petitioners filed the election contest below pursuant to section 102.168(c)(3), Florida Statutes, claiming the rejection of a number of legal votes for Ms. Jennings sufficient to change or place in doubt the result of the election. (A:206).² Petitioners seek to overturn the certified results of the election based upon the claim that legal votes cast for Ms. Jennings were “lost” and not counted because of “pervasive malfunctioning of electronic voting machines.” (A:206-07, 527). Specifically, petitioners claim that a software “bug” induced the alleged malfunction which in turn caused an abnormally high rate of undervotes to be reported among the election returns for the 13th Congressional District race in Sarasota County. (A:532, 569, 807-08).³ Ms. Jennings claims that “there is little doubt” that the use

¹ Citations to the Appendix to Jennings’ Petition for an Emergency Writ of Certiorari are cited by “A” followed by the page number.

² Ms. Jennings is joined in this petition by plaintiffs in the case *Fedder, et al. v. Gallagher, et al.*, 2006 CA 2996 (A:181), another election contest that was consolidated with the Ms. Jennings’ suit. (A:204). The Fedder plaintiffs assert claims under section 102.168(3)(a) and (3)(c), Florida Statutes.

³ “‘Undervote’ means that the elector does not properly designate any choice for an office or ballot question and the tabulator records no vote for the office or

of the iVotronic machines in Sarasota County caused the high rate of “excess” undervotes in the race. (A:214). Ms. Jennings claims that, if the excess undervotes had been properly recorded and counted as legal votes for Ms. Jennings, she would have won the election. (A:208).

Petitioners filed motions to compel production of the source code to the iVotronic machines and other proprietary technology related to the system which all parties agree is trade secret information. (A:807).⁴ The trial court held an evidentiary hearing on the motions on December 19 and 20, 2006. The trial court issued its order denying the motions on December 29, 2006. (A:806).

The Evidentiary Hearing and Trial Court's Order

All parties stipulated to the trade secret status of ES&S' source code and proprietary technology; thus, the only issue before the trial court at the evidentiary hearing was whether petitioners could demonstrate “reasonable necessity” to gain access to ES&S's trade secrets. (A:807). To show reasonable necessity, Jennings introduced the testimony of two experts: Charles Stewart II, a political science

question.” § 97.021(37), Fla. Stat. (2006) (emphasis added). With respect to the iVotronic System, the word “undervote” on the ballot image for the effected race demonstrates a “clear indication that the voter made a definite choice to undervote” See Fla. Admin. Code R. 1S-2.031(4)2.a.

⁴ As described by Ms. Jennings' counsel, “source code is programming statements and instructions written by a programmer, which, when converted into machine readable language, tells the computer what to do in a certain situation or in a myriad of situations.” (A:525).

professor at the Massachusetts Institute of Technology (A:530-555), and Dan Wallach, a computer science professor at Rice University (A:556-565, 584-603). In addition to the expert testimony, Jennings entered 10 exhibits into evidence. (A:567-582).

Mr. Stewart testified as to his statistical analysis of the election results. He opined that an excess number of undervotes was caused by the use of the iVotronic machines and that Ms. Jennings would have won the election if those excess undervotes were statistically “reallocated” as legal votes for the two candidates. (A:534). Exhibits 1 through 9 generally consist of charts prepared by Mr. Stewart that relate to his theory that “excess undervotes” in the District 13 race were caused by the use of iVotronic voting machines in Sarasota County. (A:579-580). Mr. Wallach testified regarding five hypotheses of potential causes of the undervotes, including the hypothesis relied upon petitioners that the excess undervotes could have been due to a software “bug.” Mr. Wallach further testified, generally, that “without source code we would be unable to rule out the software bug hypothesis.” (*See, e.g.*, A:563). Exhibit 10 is a computer program written by Mr. Wallach for the purpose of demonstrating how software can contain a “bug.” (A:560-61).

ES&S introduced Exhibits 1 through 7 into evidence which, among other things, included: the certification by the Florida Department of State, Division of

Elections, that the iVotronic software had been successfully tested and certified prior to the November 2006 election pursuant to section 101.015, Florida Statutes (A:643-47); the Sarasota County Canvassing Board's public notice of the October 20, 2006 public pre-election "logic and accuracy testing" of the voting machines pursuant to section 101.5612(1), Florida Statutes (A:648-49); the Sarasota Canvassing Board's October 20, 2006 certificate of correctness of testing, including testing for undervotes (A:650-51); the Florida Department of State's post-election parallel test report, dated December 18, 2006, showing that the machines performed with 100% accuracy in recording the vote selections as presented to voters on the summary screens (A:652-660). ES&S also entered into evidence the testimony of Michael Herron, a political science professor at Dartmouth College. (A:604-637). Mr. Herron testified about his alternative theory of a potential cause of the undervotes, one not involving machine malfunction. *Id.*

After considering all of the evidence and post-hearing briefing, the trial court entered an order outlining its findings and concluding that petitioners did not meet their burden of demonstrating reasonable necessity. Specifically, the trial court found that the "testimony of [Jennings'] experts was nothing more than conjecture and not supported by credible evidence." (A:808). The trial court also considered evidence of the voting machines' operations, including the results of pre- and post-election testing and certification conducted by the State of Florida

and Sarasota County. With respect to the pre-election testing and certification, the court held that “the machines now challenged were tested as required by law prior to the early voting and election day voting and were found to be working properly.” (A:808). Similarly, the court held that the State’s post-election “parallel testing” demonstrated “100% accuracy of the equipment in reporting the vote selections” and that Ms. Jennings presented “no evidence to demonstrate that parallel testing was flawed and/or the test not valid.” *Id.* The trial court denied the motions to compel disclosure of the trade secret material because petitioners’ claimed need of access was “based on nothing more than speculation and conjecture, and would result in destroying or at least gutting the protections afforded those who own the trade secrets.” *Id.*

SUMMARY OF ARGUMENT

The extraordinary remedy of certiorari review of a non-final discovery order is not appropriate where, as here, the trial court adhered to the essential requirements of law. The trial court appropriately applied well-established principles of law in denying the motion to compel because petitioners clearly failed to meet their burden of establishing a valid basis for obtaining access to the trade secrets. Petitioners’ claimed need for access to the protected materials consisted of nothing more than expert hypotheses based upon speculation, conjecture, and the assumption that the voting machines malfunctioned. In the end, their proffer of

reasonable necessity was based solely upon the unsupported claim that review of the source code was necessary to rule out the existence of a software bug. The mere claimed need of access to trade secrets is not sufficient under Florida law to establish reasonable necessity such that disclosure of the materials will be compelled.

ES&S, on the other hand, introduced direct, uncontroverted factual evidence that the machines were tested and certified by state and county elections officials on multiple occasions and that they functioned properly and recorded vote selections with 100% accuracy. The trial court adhered to the essential requirements of Florida law in weighing the competing interests of the parties and in determining that petitioners did not make a showing of reasonable necessity for the trade secrets so as to outweigh ES&S' statutory protections. Accordingly, the petition should be denied.

Petitioners are required to demonstrate that the order below created a material injury that cannot be remedied on direct appeal. They have failed to do so. Time, expense or trouble in adjudicating a matter do not constitute material injury sufficient to invoke the extraordinary relief of certiorari review. Any conceivable injury resulting from such order can be remedied on direct appeal. Petitioners' failure to demonstrate a material injury that cannot be remedied on

direct appeal creates a jurisdictional defect precluding this court from issuing the extraordinary relief sought. For this reason, too, the petition should be denied.

ARGUMENT

I. Petitioners fail to establish entitlement to a writ of certiorari.

Standard of Review

Certiorari is an extraordinary remedy that should not be used to circumvent non-final orders not reviewable under Rule 9.130, Florida Appellate Rules of Procedure. *Martin-Johnson, Inc. v. Savage*, 509 So. 2d 1097, 1099 (Fla. 1987). The standard of review for a non-final order not reviewable under Rule 9.130, such as an order pertaining to discovery, is whether the order departs from the essential requirements of law resulting in a material injury which cannot be remedied on direct appeal. *Martin-Johnson*, 509 So. 2d at 1099; *Allstate Ins. Co. v. Langston*, 655 So. 2d 91, 94 (Fla. 1995); *S.Y. v. McMillan*, 563 So. 2d 807, 809 (Fla. 1st DCA 1990). The court, on certiorari review, is to ascertain whether supporting evidence is totally lacking for the ruling in question; it cannot, however, reweigh or reevaluate the evidence. *Dade County v. Marca*, 326 So. 2d 183, 184 (Fla. 1976) (quoting *DeGroot v. Sheffield*, 95 So. 2d 912, 916 (Fla. 1957)); *Dresner v. City of Tallahassee*, 164 So. 2d 208, 211 (Fla. 1964); *Department of Children and Families*, 903 So. 2d 1011, 1013 (Fla. 5th DCA 2005); *St. Mary's Hosp. v. Bell*, 785 So. 2d 1261, 1262 (Fla. 4th DCA 2001).

A. The trial court adhered to the essential requirements of law.

Before granting access to trade secret information, the trial court must determine whether the party seeking production established reasonable necessity for access to the information. *E.g.*, *American Express Travel Related Servs., Inc. v. Cruz*, 761 So. 2d 1206, 1209 (Fla. 4th DCA 2000); *Scientific Games, Inc. v. Dittler Bros., Inc.*, 586 So. 2d 1128, 1131 (Fla. 1st DCA 1991); *Goodyear Tire & Rubber Co.*, 359 So. 2d 1200, 1203 (Fla. 1st DCA 1978). When considering a petition for certiorari review of an order pertaining to the discovery of trade secret information, the appellate court is to determine whether the trial court has correctly decided the issue; if so, then there is no departure from the essential requirements of law and the order should stand. *See Rare Coin-It, Inc. v. I.J.E., Inc.*, 625 So. 2d 1277, 1279 (Fla. 3d DCA 1993). Here, petitioners were given every opportunity during the course of a two-day hearing to show reasonable necessity; they failed. As a result, the trial court adhered to the essential requirements of law in denying their request to compel disclosure of ES&S' trade secrets.⁵

⁵ Petitioners incorrectly argue that the trial court applied the "reasonable likelihood of success on the merits" standard that courts use when deciding motions for temporary injunctions. *See Jennings' Emergency Petition for a Writ of Certiorari* at 35. There is nothing in the trial court's order to indicate that the court applied this standard or anything but the correct standard. (A:807-809). In fact, the trial court expressly recognized the correct standard: "The sole issue for determination is whether or not Plaintiffs can demonstrate a reasonable necessity to gain access to the trade secret." (A:807).

1. **Petitioners failed to demonstrate reasonable necessity for access to ES&S' trade secrets.**

All parties stipulated, for purposes of the motions to compel, that the source code and other proprietary technology related to the iVotronic machines is trade secret information belonging to ES&S. (A:807).⁶ Contrary to petitioners' assertions, ES&S was not required to show good cause for protecting or limiting discovery of the trade secrets. When a trade secret privilege has been asserted, a party is only required to show good cause for limiting production if it has not been determined that the information sought is a trade secret. *See American Express*,

⁶ Pursuant to Florida law, the very definition of trade secret presumes that the disclosure of such information will cause economic injury to its owner. Section 688.002, Florida Statutes, defines a "trade secret" as:

information, including a formula, pattern, compilation, program, device, method, technique or process that:

(a) Derives independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable by proper means by, other persons who can obtain economic value from its disclosure or use; and

(b) is the subject of efforts that are reasonable under the circumstances to maintain its secrecy.

§ 688.002(4), Fla. Stat. (2006). *See also Rare Coin-It*, 625 So. 2d at 127 (finding that disclosure of source code would cause irreparable harm even with a protective order); *Allstate Ins. Co.*, 655 So. 2d at 94 (discovery of trade secrets may reasonably cause material injury of an irreparable nature); *Superior Ins. Co. v. Cano*, 829 So. 2d 991, 992 (Fla. 2d DCA 2002) (disclosure of trade secrets creates potential for irreparable harm).

761 So. 2d at 1208-09.⁷ If, as here, the information constitutes a trade secret, the burden is on the party seeking discovery to demonstrate a reasonable necessity to obtain the information. *E.g.*, *Beck v. Dumas*, 709 So. 2d 601, 603 (Fla. 5th DCA 1998); *Scientific Games*, 586 So. 2d at 1131; *Rare Coin-It*, 625 So. 2d at 1277.

To meet the reasonable necessity requirement, a party must prove the information is reasonably necessary given the particular circumstances of the case. *See id.* This burden is considerably higher than that for the discovery of non-privileged information, and the mere assertion of need is insufficient to establish reasonable necessity. *Beck*, 709 So. 2d at 603 (“the court needed more than the argument of . . . counsel that he ‘needed’ the materials upon which to base its decision to override [the] statutory privilege against disclosure”); *Goodyear*, 359 So. 2d at 1203 (finding that request for access to defendant’s tire plant was not reasonably necessary where there was no finding that in fact the equipment located in that plant was used in producing the [tires at issue] or tires substantially identical or similar in construction); sufficient predicate of reasonable necessity had not been laid). Rather, there must be some evidentiary showing by the requesting party that there is a **valid basis** for review of the other party’s secret information.

⁷ The federal case law cited by petitioners on this point is inapplicable here where Florida law controls. One such case makes this inapplicability clear. *See Auto Owners Ins. Co. v. Totaltape, Inc.*, 135 F.R.D. 199, 203 (M.D. Fla. 1990) (in action pertaining to discovery of trade secrets under Florida law, “federal case law does not apply”).

See Strasser v. Yalamanchi, 669 So. 2d 1142, 1145 (Fla. 4th DCA 1996); *Beck*, 709 So. at 603; *Goodyear*, 359 So. 2d at 1203. Otherwise, any plaintiff could make a bare allegation in a complaint and obtain the defendant's trade secrets by simply claiming the "need" for the information.⁸ Such a prospect creates disclosure by fiat, eviscerates the statutory protections afforded trade secrets, and renders the case law requiring an evidentiary demonstration of reasonable necessity a nullity.

Once the requesting party has presented the required evidence of reasonable necessity, the court then weighs the competing interest of the parties in determining whether the reasonable necessity does or does not outweigh the trade secret statutory protections. *Beck*, 709 So. 2d at 603.

a. **Petitioners' claimed need of access to the source code was based solely upon speculation and conjecture.**

During the evidentiary hearing petitioners did little more than parrot the unsupported allegations in their complaints that the undervotes in the election were the result of "pervasive malfunctioning of voting machines." From the petitioners' offering, two things emerged: (i) there is no evidence of a physical malfunction of the machines, (A:545); rather, petitioners rely upon statistical speculation that is premised on the assumption that a malfunction occurred (A:548); and (ii) the

⁸ Ms. Jennings appears to do just that by relying upon the bare allegations of the complaint. *See, e.g.,* Jennings' Opposition to Motion to Strike Petition, at 1 (justifying inclusion of her amended complaint in the record appendix and reliance thereupon in support of the petition). Allegations in a pleading are no substitute for evidence.

proffered basis for reasonable necessity for access to the source code is that Ms. Jennings' expert cannot "rule out" the existence of a software bug without the code. (*E.g.*, A:563, 586).⁹

The statistical hypothesis introduced through Mr. Stewart is in no way probative of whether the iVotronic machines malfunctioned and cannot support the claim of reasonable necessity for access to the source code. At bottom, Mr. Stewart theorizes that an excess number of undervotes was caused by the use of the iVotronic machines and that Ms. Jennings would have won the election if those excess undervotes were statistically "reallocated" as legal votes for the two candidates. (A:534). Stewart conceded that "**there is no evidence of a physical malfunction of the machines,**" (A:545) and that his definition of "excess undervotes" "**presupposes** some peculiarity [*i.e.*, machine malfunction] associated with an election." (A:548) (emphasis added).¹⁰ Mr. Stewart's analysis has nothing

⁹ Petitioner's ultimate burden of proof at trial is not to "rule out" or disprove the existence of a "bug" but, rather, to prove the existence of a "bug" that caused the rejection of a number of legal votes for Ms. Jennings sufficient to change or place in doubt the result of the election. That Mr. Wallach views the inquiry here as the need to disprove a negative is confirmed when he attempted to downplay parallel testing by stating: "a broad truism is that [parallel] testing **can never identify the absence of bugs**; it can only show the presence of bugs." (A:586) (emphasis added).

¹⁰ Despite the lack of physical evidence, Mr. Stewart "concludes" that there was a machine malfunction based solely upon a newspaper article regarding individuals who reportedly had some voting problems; however, he could not identify any voters that had voting difficulties nor the nature of the alleged problems, nor had he interviewed any such voters. (A:546). Stewart's failure to interview a single

to do with any purported problems with the source code, software bugs or hardware malfunction, nor does it provide any direct evidence on those issues. (A:545).¹¹

voter is curious given that he surely had access to the “hundreds” of such voters alleged to have provided statements to Ms. Jennings in her complaint. (A:17, 223) (alleging that “hundreds of [voters] attest to pervasive difficulties in the recording of votes on the Thirteenth congressional district race.”).

¹¹ On a more fundamental level, Mr. Stewart’s testimony reveals that his hypothesis is not probative of any issue in this case, let alone establishing reasonable necessity. Mr. Stewart readily admits that he cannot determine voter intent; instead, he merely supplies statistics “about the behavior of voters using particular types of machines” (A:545), and offers an “attempt to estimate ... how that pool of voters **would have** cast their ballots in this particular case” absent the presumed malfunction. (A:551) (emphasis added). Critically, he cannot prove the actual number of “excess undervotes” in the Congressional District 13 race (A:550), let alone the precise number of claimed excess undervotes or “legal votes” that should have been counted for Ms. Jennings. Despite this and based upon his statistical “allocation” of the excess undervotes, Stewart believes that Ms. Jennings would have won if it can be shown that 10 percent of the excess undervotes were caused by machine malfunction. Incredibly, he cannot determine which, if any, of the five proffered hypotheses may have caused the excess undervotes, nor is he able to attribute any statistical probability to the likelihood that any one hypothesis might be responsible for causing the excess undervotes. The following exchange is telling:

- Q: Can you tell the court what percentage of the excess undervote is attributable to the voter abstention or turnoff hypotheses ...?
- A: **I've done no work that's attempted to identify that number.**
- Q: Are you able to tell the court the number of excess undervotes attributable to the [flawed] ballot design theory ...?
- A: **I've done no research to try to parse out the different contributing factors to the excess undervote.**
- Q: . . . [C]an you tell the court what percentage of excess undervotes is attributable to the malicious code hypothesis ...?

Stewart's testimony reveals nothing more than what is already known -- that there was an apparently large number of excess undervotes in the District 13 race and that iVotronic machines were used in Sarasota County. For purposes of the instant petition, it is clear that Stewart's testimony is in no way probative of whether the machines malfunctioned and is wholly insufficient to support a claim of reasonable necessity for access to the source code.

Mr. Wallach's testimony was likewise based upon assumptions that fail to sustain a claim of reasonable necessity. While Mr. Wallach offered five hypotheses¹² that might explain the excess undervotes, he reached no conclusion as

A: **I have no data about that.**

Q: And can you tell the court ... what percentage of the excess undervotes is attributable to this software bug that Dr. Wallach references in his report?

A: **I have no evidence about that.**

Q: Is there any way that you can tell the court what percentages are attributable to any of these hypotheses?

A: **I know of, off the top of my head, no way in which you could test those**, but I am not -- I am not an expert in how those bugs would manifest themselves in the voting record.

(A:531) (emphasis added). Thus, critically, Stewart cannot provide any support for his proposed allocation and is unable to validate his belief that Ms. Jennings would have won. More importantly, the evidentiary hearing revealed a key and uncontroverted fact: Stewart cannot determine the number of legal votes, if any, cast for Ms. Jennings that were not counted. (A:550) (emphasis added).

¹² A "hypothesis" is: "1A: *an assumption* or concession made for the sake of argument 2: *a tentative assumption* made in order to draw out and test its logical or empirical consequences." Miriam-Webster's Collegiate Dictionary 572 (10th ed. 1999) (emphasis added).

to which, if any, caused them.¹³ (A:584). One of his hypotheses, and the one relied upon by petitioners in their contests below, posits that the excess undervotes might be due to a software bug. Mr. Wallach claimed to need access to the source code because “[w]ithout the source code we would be **unable to rule out** the software bug hypothesis.” (A:563) (emphasis added). At the same time, he admitted that parallel testing of the voting machines, of the sort conducted by the State, could show the presence of software bugs. (A:586, 591, 594, 600). To this end he stated parallel “[t]esting can demonstrate beyond a doubt that a problem exists.” (A:591). Mr. Wallach testified that the review of a source code might never reveal the presence of a software bug or that such a review might take years to find a bug if one exists. (A:586). He also testified that he had never seen a bug causing a voting machine to create undervotes for a specific candidate during an election that did not show up at all in voting machine testing. (A:601). Mr. Wallach’s testimony does not support a finding of reasonable necessity of access to the source code; rather, it suggests parallel testing is a better indicator of machine malfunction.

From the above, it is clear that petitioners could offer no more than mere speculation and conjecture and did not meet their burden for demonstrating

¹³ Other of Mr. Wallach’s hypotheses include flawed ballot design, voter abstention, and intentional malicious programming of the software. (A:551, 589, 591-594).

reasonable necessity for access to the source code so as to outweigh ES&S' statutory protections of such trade secrets. *See Goodyear*, 359 So. 2d at 1203; *Beck*, 709 So. 2d at 603.¹⁴ On this basis alone, the trial court properly denied the motions to compel.

b. **Uncontroverted record evidence demonstrates the absence of reasonable necessity.**

Petitioners' failure to demonstrate reasonable necessity should end this court's inquiry and result in affirming the order below. Uncontroverted evidence below, however, confirms that the trial court complied with the essential requirements of law in denying the motions to compel. At the hearing, ES&S presented considerable direct -- and uncontroverted -- evidence to show that the iVotronic machines functioned with 100% accuracy.

***Pre-Election Testing and Certification
Demonstrates 100% Accuracy of Voting Machines***

The undisputed record evidence showed that prior to the 2006 elections, the Florida Department of State, Division of Elections, successfully tested and

¹⁴ Since petitioners did not meet their burden of establishing reasonable necessity, ES&S' trade secrets are not discoverable and it was not necessary for the trial court to decide the issue of whether a protective order could reasonably protect ES&S' trade secrets. *See Rare Coin-It*, 625 So. 2d at 1278 (without a showing of reasonable necessity for access to defendant's source code, disclosure of source code to plaintiff was inappropriate even subject to a protective order); *American Express*, 761 So. 2d at 1209 (disclosure of trade secrets pursuant to protective order or confidential agreement was not sufficient where there was no showing that necessity for trade secrets outweighed privilege).

certified the iVotronic voting system pursuant to its charge to examine and approve voting systems under the Electronic Voting Systems Act (the "Act"). §§ 101.5601 - 5614, Fla. Stat. (2006).¹⁵ (A:643-647). The undisputed record evidence also revealed that, prior to the election and pursuant to section 101.5612, Florida Statutes, the Sarasota Supervisor of Elections publicly conducted logic and accuracy testing of the voting machines at issue and the Sarasota Canvassing Board verified the correctness of all totals for votes cast during the tests including

¹⁵ The Act outlawed the use of punch card type voting systems and authorized "the use of electronic and electromechanical voting systems in which votes are registered electronically or are tabulated on automatic tabulating equipment or data processing equipment." §§ 101.5602, 101.56042, Fla. Stat. (2006). The Act also created a comprehensive legislative framework governing: (i) the performance and accessibility standards for electronic voting systems used in Florida, (ii) the pre-purchase testing and certification of electronic voting systems by the Florida Department of State, (iii) additional county-based pre-election testing and verification, and (iv) the post-election canvass of returns from the electronic voting systems. §§ 101.5601 - 5614, Fla. Stat. The electronic voting system's vote counting segment must meet electronic industry standards; in addition, Florida law requires that:

testing shall include, but is not limited to, testing of all software required for the voting system's operation; the ballot reader; the rote processor, especially in its logic and memory components; the digital printer; the fail-safe operations; the counting center environmental requirements; and the equipment reliability estimate. For the purpose of assisting in examining the system, the department shall employ or contract for services of at least one individual who is expert in one or more fields of data processing, mechanical engineering, and public administration

§ 101.5605(2)(a), Fla. Stat. (2006).

undervotes.¹⁶ (A:648-51). Petitioners presented no evidence challenging the results of these statutorily mandated pre-election voting machine tests and certifications.

***Post-Election Parallel Testing
Demonstrates 100% Accuracy of Voting Machines***

ES&S also presented evidence of the post-election audit of the Sarasota County iVotronic machines ordered by the Secretary of State pursuant to section 101.5607(1)(c), Florida Statutes.¹⁷ The audit consisted of a “parallel test” of the voting machines used by Sarasota County and a separate source code review. (A:529, 721). The Secretary of State, Division of Elections, issued a written report which was entered into evidence. (A:652-660). The parallel test “focused on the

¹⁶ If, as a result of a public logic and accuracy test, a device is found to have a single error it shall be deemed unsatisfactory for use in the election. § 101.5612(4)(a)(2), Fla. Stat. (2006). In such a case, the canvassing board is required to identify and test other devices that could reasonably be expected to have the same error; the canvassing board must test a number of additional devices sufficient to determine that all devices are satisfactory. *Id.* At the completion of testing, representatives of the canvassing board, political parties and the candidates (or their representatives) in attendance shall witness the resetting and sealing of each device that passed the pre-election testing. § 101.5612(4)(b), Fla. Stat. (2006).

¹⁷ Section 101.5607(1), Florida Statutes, requires that the Department of State must maintain on file information, specifications, or documentation relating to an approved electronic or electromechanical voting system and that:

The Department of State may, at any time, review the voting system of any county to ensure compliance with the Electronic Voting Systems Act.

§ 101.5607(1)(c), Fla. Stat. (2006).

iVotronic touchscreen's **ability to accurately record a voter's selections** as presented to the voter on the touchscreen's ballot review pages." (A:653) (emphasis added). The testing "also examined various complaints regarding a voter's ability or difficulty in making his or her vote selections." *Id.* As noted in the report, "[t]he intent of this parallel activity is to **ascertain the accuracy and reliability of the deployed voting devices** with consideration given to ballot style, layout, coding, demographics, and operation." (A:654) (emphasis added). The tests were performed on the machines with the highest undervote totals from the precincts that experienced the highest levels of undervotes and were selected by the parties to this proceeding. *Id.* The State's tests "were successful in **demonstrating 100% accuracy** in recording the vote selections as indicated on the review screens." (A:659) (emphasis added).

Petitioners offered absolutely no evidence to rebut the State's conclusion "that the iVotronic touchscreens accurately captures the voter's selection as presented to the voter on the review screens." (A:653). To the contrary, when cross-examined on the parallel testing report, Ms. Jennings' expert Dan Wallach admitted: "**I don't doubt its accuracy.**" (A:600) (emphasis added).¹⁸

¹⁸ Nevertheless, Mr. Wallach quibbled with the test's completeness. *Id.* On redirect, he was led down a laundry list of items by Jennings' counsel which, if included, he agreed would have made the parallel testing "more complete." (A:601-02). Such factors included demographic selection of test voters, the number of machines tested and the rapidity or steadiness of finger touches. *Id.*

The State's Parallel Test Report is Admissible

Petitioners incorrectly argue that the State's parallel test report is inadmissible hearsay and does not fall within the hearsay exception for public records under section 90.803(8), Florida Statutes. Under section 90.803(8), two types of public records and reports are admissible. The first type of public records within the hearsay exception are "records, reports, statements reduced to writing, or data compilations, in any form, of public offices or agencies, setting forth the activities of the office or agency." § 90.803(8), Fla. Stat. (2006). These records include official reports of a factual or statistical nature. *See* Charles W. Ehrhardt, *Florida Evidence* § 803.8 at 921 (2006 ed.). The second type of records falling within the exception are records of a public office or agency which set forth "matters observed pursuant to duty imposed by law as to matters which there was a duty to report." § 90.803(8), Fla. Stat.

A third type of public record which is not admissible under section 90.803(8), but which is admissible under the corresponding federal rule, is a public record setting forth "factual findings resulting from an investigation made pursuant to authority granted by law." Fed. R. Evid. 803(8). The purpose of this provision in the federal rules is to provide for admission of records and reports by a public

None of the factors, however, addressed the ultimate question of whether the iVotronic machines accurately recorded the voter's selection as presented to the voter on the review screens.

official when the official is required to interpret and evaluate facts and information supplied by persons outside the agency. Ehrhardt, § 803.8 at 925. While admissible under the federal rules, records that rely on information supplied by outside sources or that contain subjective evaluations or statements of opinion by a public official are inadmissible in Florida. *Lee v. Department of Health & Rehab. Servs.*, 698 So. 2d 1194, 1201 (Fla. 1997) (*citing* Ehrhardt, § 803.8). In Florida, a witness must be called when offering this type of public record. *Id.*

Petitioners rely upon *Lee* to support their argument that the State's parallel test report is inadmissible. *Lee* is clearly distinguishable and such reliance is misplaced given the circumstances at bar. In *Lee*, the court found that a report prepared by a state employee in the course of investigating the circumstances surrounding the impregnation of a severely retarded woman in the custody of the state was not admissible under section 90.803(8). The state employee's report included hearsay statements of the victim and other patients in the state facility who were not employees or agents of the state. The court found that the report fell squarely under the third category of documents described above and held that the report was inadmissible under Florida law. 698 So. 2d at 1201.

Here, the State's parallel test report does not suffer from the same hearsay and reliability concerns as the report at issue in *Lee*. The State's parallel test report does not rely upon information supplied by outside sources and does not contain

subjective evaluations or opinions based upon outside sources. Rather, it is a report of a factual or statistical nature. Moreover, it sets forth the activities of a state agency and records “matters observed pursuant to duty imposed by law as to matters which there was a duty to report.” Specifically, the Department of State, Division of Elections, is charged with the statutory duty to conduct and memorialize such testing as part of ensuring a voting system’s compliance with the Electronic Voting Systems Act. As such, the report falls directly within the ambit of section 90.803(8).¹⁹ In accordance with Florida law, the trial court appropriately admitted the parallel test report.²⁰

¹⁹ The report is also similar to others found admissible by this court pursuant to section 90.803(8). See *Desmond v. Medic Ayers Nursing Home*, 492 So. 2d 427, 430-31 (Fla. 1st DCA 1986) (finding report prepared by state epidemiologist pursuant to inspection of nursing home to ensure compliance with state standards and containing results of epidemiologists’ inspection and recommendations was admissible even though statute did not specifically require a written report to be prepared); *Florida Ass’n of Counties, Inc. v. Department of Admin.*, 580 So. 2d 641, 645-46 (Fla. 1st DCA 1991) (reports submitted in connection with activity of agency which was mandated by law were admissible); *Department of Prof’l Regulation v. Toledo Realty, Inc.*, 549 So. 2d 715, 717 (Fla. 1st DCA 1989) (investigative report of realty company was within exception to hearsay rule as a public record of the agency).

²⁰ It should also be noted that extensive corroborating testimony pertaining to the parallel test report was introduced during the evidentiary hearing without a single objection by petitioners. (See, e.g., A:588-89, 594, 596, 600-02). Although clearly admissible, to the extent petitioners might argue otherwise, the failure to object renders the testimony amenable to consideration by the trial court. See, e.g., *Laws v. Florida*, 356 So. 2d 7, 8 (Fla. 4th DCA 1977), *cert. denied*, 354 So. 2d 982 (Fla. 1977); *Baker v. Florida*, 336 So. 2d 364, 366 (Fla. 1976); *Smith v. Florida*, 73 So. 188 (Fla. 1916). Thus, even if it could be said that the parallel test report is

The only direct and uncontroverted evidence concerning the machines operations and performance introduced at the hearing showed that the voting machines performed with 100% accuracy in recording vote selections as indicated on the review screens. Petitioners merely repeated their bare allegations of voting machine malfunction without producing any credible supporting evidence. As a result, petitioners failed to meet their evidentiary burden of showing that they had a valid basis for obtaining the trade secrets.

Therefore, in considering and weighing all of the evidence presented by the parties, the trial court correctly found that there was no evidence of reasonable necessity for access to the secret information so as to outweigh the statutory trade secret protections afforded ES&S.²¹ There is more than ample evidence to support

inadmissible, the trial court was entitled to and apparently did rely upon the extensive testimony concerning the report.

²¹ Additionally, the production of confidential information should not be compelled where there is a less intrusive means of obtaining relevant information. *Menke v. Broward County School Bd.*, 916 So. 2d 8, 11-12 (Fla. 4th DCA 2005) (intrusive searching of entire computer by an opposing party should not be the first means of obtaining relevant information); *Compton v. West Volusia Hosp. Auth.*, 727 So. 2d 379, 381 (Fla. 5th Cir. 1999) (where information regarding whether testatrix' competency could be obtained in less intrusive ways, party was not entitled to production of her unpublished will); *Strasser*, 669 So. 2d at 1145 (plaintiff's search of defendant's computer system was improper if there was a less intrusive manner to obtain information). To this end, petitioners' own expert testified that that the testing of voting machines, certainly a less intrusive discovery method, could also show the presence of software bugs. (A:586, 591, 594, 600). Moreover, the Department of State is in the process of retaining a team of independent experts to conduct the source code review phase of its audit. (A:760).

the trial court's decision in this matter.²² Consequently, the trial court did not depart from the essential requirements of law in denying petitioners motions to compel so as to justify certiorari review by this court.

B. Petitioners have shown no material injury which cannot be remedied on direct appeal at the conclusion of the case.

While it is clear that the petitions should be denied because the trial court adhered to the essential requirements of law, the petitions should be denied for another reason: petitioners have not established that the order creates a material injury which cannot be corrected on direct appeal. Such a requirement is jurisdictional and prevents the appellate court from further consideration of the matter. *Sardinas v. Lagares*, 805 So. 2d 1024, 1025 (Fla. 3d DCA 2002). Because petitioners have made no showing of any conceivable injury resulting from the trial court's denial of their motions to compel that could not be remedied on appeal, certiorari is inappropriate and the court need go no further in its review. *Id.*

This is not a situation warranting the extraordinary remedy of certiorari review of a discovery order. Mere delay or time, trouble and expense of adjudication are not "irreparable harm" sufficient to invoke this extreme relief. *See, e.g., Smithers v. Smithers*, 743 So. 2d 605, 606 (Fla. 4th DCA 1999); *Brown &*

²² On certiorari review, it is not the practice of the reviewing court to reweigh or reevaluate the evidence. *Dade County*, 326 So. 2d at 185; *Dresner*, 164 So. 2d at 211; *Clem*, 903 So. 2d at 1013; *St. Mary's Hosp.*, 785 So. 2d at 1262.

Williamson Tobacco Corp. v. Carter, 680 So. 2d 546, 547 (Fla. 1st DCA 1996). When a discovery order is at issue, review by certiorari is most appropriate when the order at issue improperly *compels* discovery. *Gadsden County Times, Inc. v. Horne*, 426 So. 2d 1234, 1236 (Fla. 1st DCA 1983). To this end, district courts traditionally review orders wrongfully granting discovery where the information to be disclosed includes “cat-out-of-the bag” information that could be used to injure a party outside the context of the litigation, and information protected by a privilege or which is a trade secret or work product. *Allstate Ins. Co.*, 655 So. 2d at 94 (Fla. 1995); *Riano v. Heritage Corp. of South Fla.*, 665 So. 2d 1142, 1144 (Fla. 3d DCA 1996). Once disclosed, such information cannot be retracted. Even if an order mandating the discovery of this kind of information is reversed on appeal, there is no adequate remedy to correct such an irreparable injury -- the bell of compelled disclosure of a trade secret cannot be un-rung. *Id.*; *American Express*, 761 So. 2d at 1209 (order wrongfully requiring disclosure of computer trade secrets could not be remedied on appeal); *Rare Coin-It*, 625 So. 2d 1279 (order wrongfully requiring disclosure of source code subject to protective order would result in a material injury irreparable on appeal).

Conversely, courts on certiorari ordinarily do not review orders *denying* discovery because any harm resulting from such orders can be rectified on appeal. *See Riano*, 665 So. 2d at 1144. As such, while certiorari review of an order

denying discovery may be appropriate in very rare and extraordinary instances,²³ certiorari is not appropriate where the trial court has refused discovery of information protected by a privilege. *See Esman v. Board of Regents*, 425 So. 2d 156, 157 (Fla. 1st DCA 1983); *accord State Farm Mut. Auto. Ins. Co. v. Peters*, 611 So. 2d 597, 598 (Fla. 2d DCA 1993). Florida case law is devoid of authority where certiorari has been granted to overturn a trial court's denial of the disclosure of trade secrets. A trial court's interlocutory ruling denying access to such information "does not furnish the occasion for this court's intervention through the use of the extraordinary writ." *See Esman*, 425 So. 2d at 157. Moreover, as alternative means exist for petitioners to conduct discovery, *see* note 21, above, denial of access to the trade secrets here cannot constitute "irreparable" or "material" "injury" warranting certiorari review.

Given the law established by this and other Florida courts, the trial court's denial of petitioners' motions to compel trade secret information is not reviewable on certiorari, and the petitions should be denied.

²³ Exceptions to the general rule that certiorari will not be granted to review an order denying discovery are generally made only in those cases involving a material witness that is necessary to a party's case. *Duran v. MFM*, 841 So. 2d 500, 501 (Fla. 3d DCA 2003). *See also, e.g., Bush v. Shiavo*, 866 So. 2d 136, 140 (Fla. 2d DCA 2004); *Travelers Indemnity Co.*, 388 So. 2d 648, 650 (Fla. 5th DCA 1980).

CONCLUSION

For the foregoing reasons, Respondent Congressman Vern Buchanan respectfully requests that this court deny the petitions for a writ of certiorari.

GREENBERG TRAUIG, P.A.
101 E. COLLEGE AVENUE (32301)
P.O. DRAWER 1838
TALLAHASSEE, FL 32302
TELEPHONE: (850) 222-6891



GLENN T. BURHANS, JR.
FLORIDA BAR NO. 605867
HAYDEN DEMPSEY
FLORIDA BAR NO. 14435
M. HOPE KEATING
FLORIDA BAR NO. 0981915

*Counsel for Respondent
Congressman Vern Buchanan*


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CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing has been furnished by U.S. Mail this 9th day of February, 2007 to counsel of record on the attached service list.

CERTIFICATE OF COMPLIANCE

I certify that this brief was typed in Times New Roman 14-point font in compliance with Rule 9.100(l), Florida Rules of Appellate Procedure.



GLENN T. BURHANS, JR.

SERVICE LIST

Kendall Coffey
Coffey & Wright, L.L.P.
2665 South Bayshore Dr.
PH-2, Grand Bay Plaza
Miami, FL 33133
Telephone (305) 857-9797
Facsimile (305) 859-9919

Mark Herron
Messer, Caparello & Self, P.A.
2618 Centennial Place
Tallahassee, FL 32308
Telephone (850) 222-0720
Facsimile (850) 224-4359

Sam Hirsch
Jessica Amunson
Donald E. Verrilli
Jenner & Block
601 Thirteenth Street, N.W.
Suite 1200 South
Washington, DC 20006
Telephone (202) 637-6397
Facsimile (202) 639-6066

Attorneys for Plaintiff
Christine Jennings

John Bonifaz
Voter Action
1604 Solano Avenue
Berkeley, CA 94707
Telephone (510) 318-2248
Facsimile (415) 723-7141

Judith E. Schaeffer
David Becker
People for the American
Way Foundation
2000 M Street N.W. #400
Washington, DC 20036
Telephone (202) 467-4999
Facsimile (202) 293-2672

Reginald J. Mitchell
People for the American
Way Foundation
1550 Melvin Street
Tallahassee, FL 32301
Telephone (850) 877-0307
Facsimile (850) 402-1999

Muslima Lewis
Randall C. Marshall
Aziza Naa-Kaa Botchway
ACLU Foundation of Florida, Inc.
4500 Biscayne Boulevard
Suite 340
Miami, FL 33137-3227
Telephone (786) 273-2729
Facsimile (786) 363-1448

Rebecca Harrison Steel
Zeina N. Salam
ACLU Foundation of Florida, Inc.
West Central Florida Office
P.O. Box 18245
Tampa, FL 33679-8245
Telephone (813) 254-0925
Facsimile (813) 254-0926

Cindy A. Cohn
Matthew J. Zimmerman
Electronic Frontier Foundation
454 Shotwell Street
San Francisco, CA 94110
Telephone (415) 436-9333 x 127
Facsimile (415) 436-9993

Attorneys for Fedder Plaintiffs

Peter Antonacci
Allen C. Winsor
Gray Robinson, PA
301 South Bronough Street
Suite 600
Tallahassee, FL 32301
Telephone (850) 577-9090
Facsimile (850) 577-3311

*Attorneys for Defendants Elections
Canvassing Commission of the
State of Florida, Sue Cobb,
Secretary of State and Dawn K.
Roberts, Director, Division of Elections*

Ronald Labasky
Young Van Assenderp, PA
225 South Adams Street
Tallahassee, FL 32302
Telephone (850) 222-7206
Facsimile (850) 561-6834

Attorney for Defendant Kathy Dent

Frederick J. Elbrecht
Stephen E. DeMarsh
Office of the County Attorney
1660 Ringling Boulevard, Fl. 2
Sarasota, FL 34236-6870
Telephone (941) 861-7272
Facsimile (941) 861-7267

*Attorney for Defendants Sarasota
County Canvassing Board*

Miguel A. DeGrandy
800 S. Douglas Road, Ste. 850
Coral Gables, FL 33134
Telephone (305) 444-7737
Facsimile (305) 443-2616

Harry O. Thomas
Radey Thomas Yon & Clark, P.A.
301 S. Bronough Street
Suite 200
Tallahassee, FL 32301-1722
Telephone (850) 425-6654
Facsimile (850) 425-6694

*Attorneys for Election Systems &
Software, Inc.*

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Tab 10

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FIRST DISTRICT COURT OF APPEAL
STATE OF FLORIDA

CHRISTINE JENNINGS,

Petitioner,

v.

1st DCA Case No. 1D07-11
L.T. No. 2006-CA-2973

**ELECTIONS CANVASSING
COMMISSION OF THE STATE
OF FLORIDA, et al.,**

Respondents.

**RESPONSE OF STATE RESPONDENTS TO
EMERGENCY PETITION FOR A WRIT OF CERTIORARI**

On Petition for a Writ of Certiorari to the Circuit Court
of the Second Judicial Circuit, in and for Leon County
Honorable William L. Gary

PETER ANTONACCI
FLORIDA BAR NO. 280690
ALLEN WINSOR
FLORIDA BAR NO. 016295
GRAYROBINSON, P.A.
301 South Bronough Street
Tallahassee, Florida 32301
(850) 577-9090

*Attorneys for Kurt S. Browning, Secretary of State of the
State of Florida; Amy K. Tuck, Director of the Division
of Elections of the State of Florida; and the Elections
Canvassing Commission of the State of Florida*

SA-191

Respondents Kurt S. Browning, Secretary of State of the State of Florida; Amy K. Tuck, Director of the Division of Elections of the State of Florida¹; and the Elections Canvassing Commission of the State of Florida, submit this response to Jennings's Emergency Petition for a Writ of Certiorari.

INTRODUCTION

In the November 2006 general election, Petitioner Christine Jennings was a candidate for Representative of Florida's Thirteenth Congressional District. When the votes were tallied, Jennings narrowly lost. (A-3.)² Following a mandatory recount, the election results were confirmed and certified. (A-5.) Jennings then initiated the litigation below, contesting the election results and alleging pervasive voting system malfunction. (A-1.) Among her other discovery requests, Jennings sought production of computer source code and other materials, which she concedes are trade secrets owned by defendant Election Systems & Software, Inc., ("ES&S"). After finding that Jennings had failed to demonstrate a reasonable necessity for access to the protected materials, the circuit court entered an order denying the motion to compel. Jennings then petitioned this Court for a writ of

¹ As of January 8, 2007, Amy K. Tuck became Director of the Division of Elections. She succeeded Dawn K. Roberts, who was the named defendant below. Under Florida Rule of Appellate Procedure 9.360(c)(2), Tuck is automatically substituted as a party.

² Citations to Petitioner's "Appendix to Emergency Petition for a Writ of Certiorari" will be made as (A-[page]).

certiorari, asking this Court to quash the circuit court's order.³ At issue in this proceeding is whether that order constitutes a departure from the essential requirements of law. (Pet. at 26.) It does not.

ARGUMENT

Trial courts enjoy broad discretion in overseeing the discovery process, including protection of those from whom discovery is sought. *See Citigroup Inc. v. Holsberg*, 915 So. 2d 1265, 1270 (Fla. 4th DCA 2005). In a certiorari proceeding like this one, the trial court's decision on a discovery matter will be disturbed only if the order to be reviewed constitutes a departure from the essential requirements of law. *See Sheridan Healthcorp., Inc. v. Total Health Choice, Inc.*, 770 So. 2d 221, 222 (Fla. 3d DCA 2000). As explained below, the circuit court's denial of Jennings's motion was no such departure because Jennings failed to carry her burden of establishing a reasonable need for the requested materials.

The circuit court's denial of Jennings's motion to compel discovery is the sole issue before this Court. In her petition, Jennings takes issue with other decisions of the circuit court, arguing that it improperly refused to expedite her case and failed to enter her proposed scheduling order, (Pet. at 9-11). To the

³ After Jennings initiated her election contest, voter plaintiffs initiated a separate action. The two cases were consolidated in the circuit court, and the Voter Plaintiffs joined in Jennings's motion to compel. (A-372.) They have likewise joined in Jennings's emergency petition in this Court. *See* Voter Plaintiffs' Notice of Joinder.

contrary, the court has expedited Jennings's case considerably—scheduling the first hearing one day after the complaint was filed, (A-133), requiring defendants to respond to discovery requests in half the time allowed under the Florida Rules of Civil Procedure, (A-179), and ruling quickly on motions, (A-178, 806). Moreover, these complaints are improper in this certiorari case. The relief Jennings seeks is an order quashing the December 29 order denying her discovery motions. (Pet. at 24, 50.) Consideration of these other circuit court decisions is improper.

I. THE CIRCUIT COURT PROPERLY FOUND THAT JENNINGS FAILED TO DEMONSTRATE A REASONABLE NECESSITY FOR THE REQUESTED DISCOVERY.

When a party asserts the trade secret privilege in resisting discovery efforts, a court must determine, first, whether the requested discovery constitutes a trade secret, and, if so, whether the party seeking production can show a reasonable necessity for the requested materials. *Ameritrust Ins. Corp. v. O'Donnell Landscapes*, 899 So. 2d 1205, 1207 (Fla. 2d DCA 2005). This two-step inquiry is well established. *See, e.g., Sheridan Healthcorp.*, 770 So. 2d at 222; *American Exp. Travel Related Servs., Inc. v. Cruz*, 761 So. 2d 1206, 1209 (Fla. 4th DCA 2000); *Rare Coin-It, Inc. v. I.J.E., Inc.*, 625 So. 2d 1277, 1278 (Fla. 3d DCA 1993). In this case, the parties agree that the requested materials are protected trade secrets. (Pet. at 39.) Therefore, the circuit court correctly proceeded directly

to the second step of the inquiry—whether Jennings had demonstrated a reasonable necessity for the materials. The court properly concluded she had not.

A. The Court Properly Found There Was an Absence of Evidence Demonstrating Reasonable Necessity.

Jennings's legal theory is that the voting machines malfunctioned, altering the outcome of her election. As evidence of this malfunction, Jennings presented the testimony of Professor Charles Stewart, III, an expert in electoral politics. Based on his statistical analysis, Stewart testified that the use of the voting machines likely caused Jennings's electoral loss. (A-541.) Jennings also offered the testimony of Professor Dan Wallach, a computer expert who testified that a machine software malfunction could have caused the electoral loss and could not be ruled out as a possibility without analyzing the computer source code. (A-586.)

A court may not order disclosure of trade secrets without making factual findings of reasonable necessity. *See KPMG LLP v. State, Dept. of Ins.*, 833 So. 2d 285, 286 (Fla. 1st DCA 2002) (quashing discovery order because court failed to make factual findings supporting reasonable necessity). In this case, the circuit court properly concluded that there was no evidence upon which it could base such a factual finding. Jennings contends that such a finding should be based on the fact that she alleged a defect in the machines, and without access to the machines, she cannot prove her allegation. (Pet. at 27-28.) The problem with this logic is that it would require disclosure of trade secrets upon nothing more than allegations on the

face of a complaint. No trade secret would be immune from disclosure because a party can always frame allegations in a manner to make a trade secret a focal issue. As the circuit court noted, Jennings's theory "would result in destroying or at least gutting the protections afforded those who own the trade secrets." (A-808.)⁴

Because the Legislature has afforded substantial protection for trade secret owners, Jennings's logic cannot prevail. Instead, a showing of reasonable necessity demands something more than mere allegations. It must require a showing that the discovery sought would avoid what would otherwise amount to an injustice. *See* § 90.506, Fla. Stat. (2006) (a party may refuse to disclose a trade secret "if the allowance of the privilege will not conceal fraud or otherwise work injustice."). But no injustice results from disallowing a party's fishing expedition, and Jennings has not demonstrated that her discovery efforts are anything more than that.

Jennings accuses the circuit court of confusing the standard "reasonable necessity" with "reasonable likelihood of success on the merits." (Pet. at 32-35.) She argues that the circuit court erred by concluding that it could not allow the requested discovery without speculating as to the cause of the election results.

⁴ Indeed, although this election was close, Professor Wallach testified that his opinion regarding his need for a source code review would not change even if the margin were 50 points. (A-587.) Therefore, *any* election involving electronic machines would be subject to litigation including a full disclosure of trade secrets.

Jennings contends that the court improperly looked to the merits, rather than simply allowing her access to information she needs to prove her theory. *Id.* But the court had no obligation to ignore the absence of any evidence supporting Jennings's claim of machine malfunction. In *Winn-Dixie Stores, Inc. v. Miles*, 616 So. 2d 1108 (Fla. 5th DCA 1993), Winn-Dixie sought discovery of information to support a theory that lacked any basis other than conjecture:

[I]t is apparent that the type of information sought in the instant case could be highly relevant in that it might tend to establish bias on [a witness's] part if a significant part of his income is derived from plaintiffs' attorneys. However, the record contains no contention that Winn-Dixie has any information whatsoever that this is the case. Absent some sort of basis for suspecting that [the witness] is biased, Winn-Dixie should not be allowed to engage in an extensive fishing expedition which may prove worthless.

Id. at 1110. The same is true here. Jennings is not entitled to ES&S's trade secrets without some basis for suspecting that the source code is tainted. As the circuit court concluded, she had none. And as the court noted, granting Jennings's motion would require basing a reasonable necessity finding on "nothing more than speculation and conjecture." (A-808.)

Jennings will likely argue that the statistical evidence provided by Professor Stewart provides her basis.⁵ But ES&S provided its own statistical expert who

⁵ Notably, if Jennings's legal standard were correct—that she demonstrated reasonable necessity by merely alleging equipment malfunction and offering computer expert testimony that her theory could not be disproven without the source code—she would have had no need for Professor Stewart's statistical

testified that voter confusion—not machine malfunction—likely caused the unusual undervote. (A-613, 620.) The circuit court weighed these competing explanations and concluded that the evidence did not support a finding of reasonable necessity. And a circuit court’s factual findings should not be disturbed absent clear error. *State v. Shaw*, 784 So. 2d 529, 530 (Fla. 1st DCA 2001) (“Deference is given to findings of fact unless they are clearly erroneous. . . .”). Accordingly, the circuit court did not depart from the essential requirements of the law.

B. The Court Did Not Fail to Consider Harm to ES&S.

Jennings next argues that the court presumed harm to ES&S and failed to balance her needs against any harm to ES&S. (Pet. at 38-40.) In doing so, Jennings suggests that a finding of harm is necessary before a court can deny access to trade secrets. This is simply not the case. Once the court concludes that the party seeking discovery has failed to demonstrate reasonable necessity, the court’s inquiry ends.

In arguing otherwise, Jennings relies on three federal decisions. (Pet. at 38.) Although one of those cases looked to state law to determine whether the materials

evidence. Indeed, Jennings is in the awkward position of arguing both (i) she cannot prove her case without the access to the source code; and (ii) statistical evidence proves her case. The very fact that Jennings relies on statistical evidence to support her claim of machine malfunction undermines her argument that access to the privileged materials is necessary.

were protected trade secrets, they did *not* apply Florida law with respect to whether the trade secrets were subject to disclosure. Instead they properly applied the Federal Rules of Civil Procedure and federal decisions applying those rules. See *Cytodyne Tech., Inc. v. Biogenic Tech., Inc.*, 216 F.R.D. 533, 535-36 (M.D. Fla. 2003); *Kaiser Aluminum & Chem. Corp. v. Phosphate Eng'g & Constr. Co.*, 153 F.R.D. 686, 687 (M.D. Fla. 1994); *Empire of Carolina, Inc. v. Mackle*, 108 F.R.D. 323, 325-26 (S.D. Fla. 1985). These cases, therefore, do not support Jennings's position. Perhaps even more telling is Jennings's reliance on *Sabol v. Bennett*, 672 So. 2d 93 (Fla. 3d DCA 1996), which Jennings cites for the proposition that a party resisting discovery must make an affirmative showing of harm. That case has nothing to do with trade secrets; it involved a dispute over a party's access to information about a witness's prior drug and alcohol use. *Id.* at 94.

Moreover, any trade secret, as a matter of law, has economic value. See § 688.002(4), Fla. Stat. (2006) ("Trade secret" means information, including a formula, pattern, compilation, program, device, method, technique, or process that: (a) Derives *independent economic value*, actual or potential, from not being generally known to, and not being readily ascertainable by proper means by, other persons who can obtain economic value from its disclosure or use; and (b) Is the subject of efforts that are reasonable under the circumstances to maintain its

secrecy.”) (emphasis added). By stipulating to trade secret status, the parties stipulated to the economic value of the materials to their owner.

Finally, a protective order is not sufficient to offset the potential harm of disclosure. “Production of the source code, without a showing and finding of reasonable necessity, would cause [the trade secret owner] irreparable harm. This is true even when the trial court orders production subject to a protective order.” *Rare Coin-it*, 625 So. 2d at 1278; *see also American Exp. Travel*, 761 So. 2d at 1209 (“The trial court’s endorsement of Petitioner’s use of a confidential agreement is not sufficient to override Petitioner’s concern. Nor would a protective order be sufficient.”). There was testimony that Jennings’s expert, the person who would review the materials if they are produced, advocates open access to all election machine source code, believes that no such materials should be granted trade secret protection, and is critical of all machines that do not provide paper trails. (A-584, 590.). Although he testified that he would comply with any court order regarding confidentiality, he cannot “unlearn” what he gleans from a detailed analysis of ES&S’s trade secrets. That information—consciously or otherwise—will support his future advocacy undertakings to the detriment of ES&S.

Because the circuit court concluded that Jennings failed to meet her burden to demonstrate reasonable necessity, its inquiry appropriately ended there.

Nevertheless, there is ample support in the record for a conclusion that ES&S would suffer harm if its trade secrets were disclosed.

II. THE CIRCUIT COURT DID NOT ERR BY ADMITTING THE PARALLEL TEST SUMMARY.

Jennings argues that the circuit court rested its ruling almost entirely on the “Parallel Test Summary Report,” (the “Report”), which she contends was inadmissible hearsay. (Pet. at 41.) To the contrary, the court’s decision to admit the evidence was entirely proper. Alternatively, even if the court should not have considered the Report, its ultimate decision—that Jennings failed to demonstrate a reasonable necessity for her requested discovery—would not have changed. Accordingly, whether or not the Report was inadmissible hearsay, the court’s denial of Jennings’s motion to compel did not constitute a departure from the essential requirements of law.

A. The Court Properly Relied on the Public Records Exception to the Hearsay Rule.

Section 90.803(8), Florida Statutes (2006) exempts from the hearsay rule records and reports of public offices or agencies “setting forth the activities of the office or agency.” The obvious purpose of this hearsay exception is “to embrace records of a simple factual nature which primarily focus upon the functions of a public agency.” *Dykes v. Quincy Telephone Co.*, 539 So. 2d 503, 505 n.3 (Fla. 1st

DCA 1989) (quoting C. Ehrhardt, Florida Evidence § 803.8, at 498 (2d ed. 1984)). The Report fits squarely into this exception.

The nine-page Report succinctly details the Division of Elections' parallel tests conducted on the voting machines. (A-652-660.) It explains how the tests were conducted, what voting patterns were used, how votes were recorded, and—most importantly—how the machines reported accurate vote counts during the testing. *Id.* (“[T]he test results show that the iVotronic touchscreens accurately captures the voter’s selection as presented to the voter on the review screens. These tests did not identify any latent problems with respect to vote selection or the accuracy of the touchscreens’ tabulation of the votes as cast.”). The Report is an official report of the Division of Elections, and nothing about it suggests a lack of trustworthiness.⁶ Indeed, Jennings’s own expert indicated that he did not “doubt its accuracy.” (A-600.)

In arguing that Section 90.803(8) should not apply, Jennings cites one case: *Lee v. Department of Health & Rehabilitative Services*, 698 So. 2d 1194 (Fla. 1997). That case, though, involved a document entirely different from the Report in this case. In *Lee*, a severely retarded woman became pregnant while in the care of the Department of Health and Rehabilitative Services (“HRS”), and her family

⁶ There is an exception to the exception. Section 90.803(8) does not except public records from the hearsay rule when “the sources of information or other circumstances show their lack of trustworthiness.” *Id.* The court did not find any lack of trustworthiness, nor is there any.

sued for damages. *Id.* at 1196. Following the tragic incident, HRS assigned an employee to investigate the matter. *Id.* In the course of the investigation, the HRS employee interviewed witnesses, including the victim, other patients, and other HRS employees. *Id.* The investigator then drafted a report, which included witness statements as well as his opinions and conclusions regarding the case. *Id.* The court concluded that this report was not admissible under Section 90.803(8) because “[r]ecords that rely on information supplied by outside sources or that contain evaluations or statements of opinion by a public official are inadmissible under this provision.” *Id.* at 1201.

In this case, the Report includes only facts discerned during official conduct—the Division of Elections’ parallel tests. *Cf. Claussen v. State, Dept. of Transp.*, 750 So. 2d 79, 82 (Fla. 2d DCA 1999) (“The letter in this case contained no information compiled by the DOT in the course of its duties; rather, the letter described a prior property owner’s objection to the proposed highway expansion. Because the letter was based upon information *from an outside source* it was inadmissible as a DOT public record under section 90.803(8).”) (emphasis added). The Report is an official public record and was properly admitted under Section 90.803(8). *See Arthur v. State*, 818 So. 2d 589, 591 n.1 (Fla. 5th DCA 2002)

(driving records are admissible under Section 90.803(8) because they are “public records and reports of a public office or agency”).⁷

B. Even Without the Report, the Court Would Have Found that Jennings Failed to Establish Reasonable Necessity of Access to the Trade Secret Materials.

Jennings contends not only that the Report was inadmissible hearsay evidence, but also that the court’s conclusion was based almost entirely on it. (Pet. at 41.) Instead, the court based its conclusion on Jennings’s failure to provide sufficient evidence of reasonable need for the trade-secret materials. That failure existed with or without the Report. Therefore, even if the admission of the Report was error, it was harmless error. Improper admission of hearsay evidence does not warrant reversal when the entire record demonstrates an absence of harm. *See Division of Corrections v. Wynn*, 438 So. 2d 446, 449 (Fla. 1st DCA 1983).

C. The Court Was Not Obligated to Rely on Jennings’s Evidence of Inadequacy of the Division of Elections’ Parallel Tests.

Jennings also argues that the circuit court ignored evidence of flaws in the Division of Elections’ parallel testing. (Pet. at 46-50.) But the court was not obligated to rely on the testimony of Jennings’s expert that the parallel tests were incomplete or otherwise flawed. It is up to the trial court to determine what

⁷ Jennings also suggests that the court confused issues of authentication and hearsay. (Pet. at 46.) It is clear from the record, though, that the court understood that distinction. The court’s inquiry into the origin of the Report, (A-604) (“This was issued by the Department of State, correct?”), was appropriate because Section 90.803(8) applies only to records and reports of “public offices or agencies.”

evidence to accept in making its fact-findings. “[I]t is for the trial court who heard the testimony below, not this court, to evaluate and weigh the credibility of witness testimony and other evidence adduced at trial.” *Adkins v. Adkins*, 650 So. 2d 61, 62 (Fla. 3d DCA 1994).⁸

CONCLUSION

In this original jurisdiction proceeding, the issue before this Court is whether the circuit court’s order constituted a departure from the essential requirements of law. As explained above, it did not. The circuit court’s order was legally and factually correct, and this Court should deny Jennings’s emergency petition.

⁸ Furthermore, Jennings’s specific complaints about the parallel testing undermine her argument that the voting machine’s software is to blame. For example, Jennings’s expert testified that the testing was flawed because the twelve test voters’ demographics did not match the demographic composition of Sarasota. (A-601.) He further testified that the test voters lacked the diversity appropriate for a proper test. (A-595.) Because software inside a voting machine cannot know the race, age, or gender of the voter using it, these complaints point toward some cause for the election results other than software or equipment malfunction.

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Respectfully submitted this 29th day of January, 2007.



PETER ANTONACCI

Florida Bar No. 280690

ALLEN WINSOR

Florida Bar No. 016295

GRAYROBINSON, P.A.

301 South Bronough Street
Suite 600 (32301)

Post Office Box 11189

Tallahassee, Florida 32302

Telephone (850) 577-9090

Facsimile (850) 577-3311

pva@gray-robinson.com

awinsor@gray-robinson.com

Attorneys for State Respondents

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing has been furnished by Electronic Transmission and United States Mail this 29 day of January, 2007, to the following:

Mark Herron
Messer, Caparello & Self, P.A.
2618 Centennial Place
Tallahassee, Florida 32308
Telephone (850) 222-0720
Facsimile (850) 558-0659
E-Mail: mherron@lawfla.com
Attorney for Plaintiff Jennings

Kendall Coffey
Coffey & Wright, LLP
2665 South Bayshore Drive
PH-2, Grand Bay Plaza
Miami, Florida 33133
Telephone (305) 857-9797
Facsimile (305) 859-9919
E-Mail: kcoffey@coffeywright.com
Attorney for Plaintiff Jennings

Donald B. Verrilli, Jr.
Jessica Ring Amunson
Sam Hirsch
Jenner & Block, LLP
601 Thirteenth Street N.W.
Washington, DC 20005-3823
Telephone (202) 693-6095
Attorneys for Plaintiff Jennings

Glenn T. Burhans, Jr.
Hayden R. Dempsey
Greenberg Traurig, P.A.
101 East College Avenue
Tallahassee, Florida 32301
Telephone (850) 222-6891
Facsimile (850) 681-0207
E-Mail Burhansg@gtlaw.com
Dempseyh@gtlaw.com
Attorney for Vern Buchanan

Ronald A. Labasky
Young Van Assenderp, P.A.
225 South Adams Street
Tallahassee, Florida 32302
Telephone (850) 222-7206
Facsimile (850) 561-6834
E-Mail rlabasky@yvlaw.net
Attorney for Supervisor Dent

Frederick J. Elbrecht
Deputy County Attorney
Sarasota County Attorney's Office
1660 Ringling Boulevard, Second Floor
Sarasota, Florida 34236
Telephone (941) 861-7272
Facsimile (941) 861-7267
E-Mail RElbrecht@scgov.net
Attorney for Sarasota Defendants

Lowell Finley
 Voter Action
 1604 Solano Avenue
 Berkeley, California 94707
 Telephone (510) 318-2248
 Facsimile (415) 723-7141
Attorney for Fedder Plaintiffs

Muslima Lewis, Director
 Voting Rights Project
 Randall C. Marshall, Legal Director
 Aziza Naa-Kaa Botchway
 ACLU Foundation of Florida, Inc.
 4500 Biscayne Boulevard, Suite 340
 Miami, Florida 33137-3227
 Telephone (786) 273-2729
 Facsimile (786) 363-1448
Attorneys for Fedder Plaintiffs

David J. Becker
 Judith E. Schaeffer
 People for the American Way
 Foundation
 2000 M Street N.W. #400
 Washington, DC 20036
 Telephone (202) 467-4999
 Facsimile (202) 293-2672
Attorneys for Fedder Plaintiffs

Richard T. Donelan, Jr.
 Julie C. Miller
 M. Drew Parker
 Florida Dept. of Financial Services
 200 East Gaines Street
 Tallahassee, Florida 32399-4247
 Telephone (850) 413-3010
 Facsimile (850) 413-3029
Attorneys for Tom Gallagher

Reginald J. Mitchell
 People for the American Way Foundation
 1550 Melvin Street
 Tallahassee, Florida 32301
 Telephone (850) 877-0307
 Facsimile (850) 402-1999
Attorney for Fedder Plaintiffs

Rebecca Harrison Steele
 Zeina N. Salam
 ACLU Foundation of Florida, Inc.
 West Central Florida Office
 Post Office Box 18245
 Tampa, Florida 33679-8245
 Telephone (813) 254-0925
 Facsimile (813) 254-0926
Attorneys for Fedder Plaintiffs

Cindy A. Cohn
 Matthew J. Zimmerman
 Electronic Frontier Foundation
 454 Shotwell Street
 San Francisco, California 94110
 Telephone (415) 436-9333 x 127
 Facsimile (415) 436-9993
Attorneys for Fedder Plaintiffs

Harry O. Thomas
 Radey Thomas Yon & Clark, P.A.
 301 South Bronough Street
 Suite 200
 Tallahassee, Florida 32301
 Telephone (850) 425-6654
 Facsimile (850) 425-6694
Attorneys for ES&S

Miguel A. DeGrandy
Miguel DeGrandy, P.A.
800 S. Douglas Road, Suite 850
Coral Gables, Florida 33134-2088
Telephone (305) 444-7737
Facsimile (305) 443-2616
Attorneys for ES&S

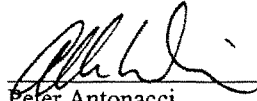


Peter Antonacci
Florida Bar No. 280690
Allen Winsor
Florida Bar No. 016295
GrayRobinson, P.A.
301 South Bronough Street
Suite 600 (32301)
Post Office Box 11189
Tallahassee, Florida 32302
Telephone (850) 577-9090
Facsimile (850) 577-3311
E-Mail pva@gray-robinson.com
awinsor@gray-robinson.com
Attorneys for State Defendants

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CERTIFICATE OF COMPLIANCE WITH FONT REQUIREMENT

I certify that the font used in this response is Times New Roman 14 point
and in compliance with the Florida Rules of Appellate Procedure.



Peter Antonacci
Florida Bar No. 280690
Allen Winsor
Florida Bar No. 016295

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Tab 11

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IN THE DISTRICT COURT OF APPEAL
FIRST DISTRICT OF FLORIDA
CASE NO. 1D07-11
LT NO. 2006 CA 2973

CHRISTINE JENNINGS,

Petitioner,

v.

ELECTIONS CANVASSING COMMISSION OF THE STATE OF FLORIDA;
SARASOTA COUNTY CANVASSING BOARD;
KATHY DENT, as SARASOTA COUNTY SUPERVISOR OF ELECTIONS;
KURT S. BROWNING, as SECRETARY OF STATE
OF THE STATE OF FLORIDA;
AMY K. TUCK, as DIRECTOR OF THE DIVISION OF ELECTIONS
OF THE STATE OF FLORIDA;
VERN BUCHANAN; and
ELECTION SYSTEMS & SOFTWARE, INC.,

Respondents.

REPLY BRIEF

On Petition for a Writ of Certiorari to the Circuit Court
of the Second Judicial Circuit, in and for Leon County
Honorable William L. Gary

Kendall Coffey
COFFEY & WRIGHT, LLP
2665 South Bayshore
Drive
PH-2, Grand Bay Plaza
Miami, FL 33133
(305) 857-9797

Mark Herron
MESSER, CAPARELLO &
SELF, P.A.
2618 Centennial Place
Tallahassee, FL 32308
(850) 222-0720

Donald B. Verrilli, Jr.
Sam Hirsch
Jessica Ring Amunson
JENNER & BLOCK LLP
601 13th Street, N.W.
Suite 1200
Washington, DC 20005
(202) 639-6000

Counsel for Petitioner

SA-211

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INTRODUCTION

Although they collectively consume nearly a hundred pages, Respondents' briefs are most notable for what they don't say:

- None of the Respondents disputes that “the primary consideration in an election contest is whether the will of the people has been effected.”¹
- No one refutes the conclusion of ES&S's expert, Professor Herron, that “there is essentially a 100 percent chance the 13th Congressional District election result would have been reversed in the absence of the large Sarasota County undervote.”²
- No one refutes the shared conclusion of both sides' experts (Professors Herron and Stewart) that the Sarasota County undervote cost Christine Jennings between 3,000 and 4,000 more votes than it cost Vern Buchanan.
- No one refutes that statistics alone can never determine whether, or how much, the malfunctioning of the iVotronic electronic touch-screen voting system contributed to the Sarasota County undervote.
- No one refutes that the key to making those determinations is to comprehensively test the iVotronic hardware, software, and source code.

¹ *Boardman v. Esteve*, 323 So. 2d 259, 269 (Fla. 1975).

² Michael C. Herron *et al.*, Ballot Formats, Touchscreens, and Undervotes: A Study of the 2006 Midterm Elections in Florida, at i, *available at* <http://www.dartmouth.edu/~herron/cd13.pdf> (accessed Feb. 20, 2007); *accord* A 623 (reaffirming that conclusion).

- No one contends that Jennings or her attorneys or experts are business competitors of the trade secrets' owner, ES&S, or that they would abuse their access to those trade secrets by leaking them to ES&S's competitors in violation of a protective order.

So the key question in this case is not *whether* democracy failed the people of Florida's Thirteenth District, but *why*. Respondents claim that the ballot format confused the voters, who therefore failed to cast their intended congressional ballots. Jennings claims that the voters cast their intended congressional ballots but the machines failed to record them correctly. The only way to resolve this dispute is to allow *all* parties to independently test the iVotronic system's hardware and software, including its source code.

I. The Trial Court's Order Created a Material Injury that Cannot Be Adequately Remedied on Appeal.

Neither ES&S nor the County Defendants — who filed no response to this Court's show-cause Order, even though they are the target of Jennings's motion to compel production of the iVotronic hardware (and much of the software, too) — even attempts to claim that the injury inflicted by the order below can be adequately remedied on appeal from a final judgment. Alone among the Respondents, Buchanan and the State Defendants assert that “[m]ere delay” can never irreparably harm a litigant (Buchanan Br. at 26) and that even acknowledging the trial court's refusal to expedite this case is “improper” (State

Br. at 3-4). But those arguments ignore the fact that this is an election contest for a public office whose term lasts only 24 months. In a case like this, justice delayed is justice denied. *See* Pet. at 30-31.

II. The Trial Court Departed from the Essential Requirements of Florida's Three-Step Legal Test for Discovery Disputes Involving Trade Secrets.

A. The Trial Court Did Not Apply the "Reasonable Necessity" Standard.

In defending the order below, Respondents proclaim a novel version of the "reasonable necessity" standard that places the proverbial cart squarely in front of the horse, demanding that Jennings prove her case in order to win access to the evidence that is "reasonably necessary" to prove her case. Under this standard, no corporation would ever have to disclose a trade secret: At the discovery phase, either the plaintiff will be unable to prove her case, or her ability to prove it will eviscerate her claim that access to the trade secret is "reasonably necessary."

So it is no surprise when Respondents find that Jennings has fallen short of their proposed standard. Seemingly oblivious to irony, they criticize Jennings's computer-science expert, Professor Wallach, for "reach[ing] no conclusion as to the cause of the undervote." ES&S Br. at 14; *see* Buchanan Br. at 16-17 (also complaining that he "reached no conclusion"). But the whole point of Professor Wallach's testimony was that no one could sensibly reach such a conclusion without full access to the iVotronic system. A 558-63.

Respondents repeatedly fault Jennings's experts for having nothing but "theories" to explain the undervote. But at this stage of the litigation, nothing more is required. As noted in a case requiring disclosure of one of the most closely guarded trade secrets in history — the formula for Coca-Cola — "[t]he level of necessity that must be shown is that the information must be necessary for the movant to prepare its case for trial, which includes proving its theories and rebutting its opponent's theories." *Coca-Cola Bottling Co. of Shreveport, Inc. v. Coca-Cola Co.*, 107 F.R.D. 288, 293 (D. Del. 1985). Clearly, Jennings has met this standard.

Nonetheless, Respondents assert that the record lacks "any evidence supporting Jennings's claim of machine malfunction" or software bugs, that her complaint is "completely frivolous," and that her allegations are "groundless." State Br. at 7; ES&S Br. at 33-35. Those assertions are baffling. Jennings has at least 14,000 reasons to "suspect[] that the source code is tainted" and the machines malfunctioned. State Br. at 7. Both sides' experts testified that the number of congressional undervotes in Sarasota County exceeded the norm by at least 14,000 ballots. A 532-34, 549, 621-22. Both sides' experts testified that this undervote rate was at least six times what they would have expected. *Id.* And both sides' experts testified that any alleged voter revulsion with the candidates could not possibly explain this historically aberrational undervote rate. *Id.* at 536, 544, 554,

622. Contrary to the trial court’s findings (*id.* at 808), there was nothing “speculat[ive]” or “conjectur[al]” about this uncontroverted evidence.³

Respondents’ briefs repeatedly misrepresent the record. Just to take one example, they attack Jennings’s political-science expert, Professor Stewart, for “conclud[ing]” that there was a machine malfunction based *solely* upon a newspaper article regarding individuals who reportedly had some voting problems.” Buchanan Br. at 14 n.10 (citing A 546) (emphasis added); *accord* ES&S Br. at 13 (calling the newspaper report “the sole basis” for his conclusion) (citing A 546). The actual trial transcript says nothing of the sort:

Q: Now, *in your declaration, there at page 36*, you support your conclusion of a possible cause of machine malfunction by relying on a newspaper report stating that most callers to the newspaper reported voting problems; correct?

A: That’s the citation in that paragraph, yes, sir.

³ Where the two experts diverged was over the issue of causation. Relying heavily on undervote data for each of Sarasota County’s 1,500 machines, Professor Stewart testified that machine failure *likely* caused the excess undervote. A 540-41, 553-54, 579-80. But ES&S’s expert, Professor Herron, testified that “voter confusion — not machine malfunction — *likely* caused the unusual undervote.” State Br. at 8 (emphasis added) (citing A 613, 620). He relied heavily on county-level data showing high undervote rates for the Attorney General’s race in Charlotte, Lee, and Sumter Counties, where the ballot format allegedly resembled that found in the congressional race in Sarasota County. A 694, 697. On cross-examination, however, Professor Herron conceded that there was another common thread connecting the four counties — they all used the same version of the iVotronic system, with the same type of hardware and the same source code. *See id.* at 624-25, 629-30.

Q: That's *the sole basis in that section of your report* for a conclusion that there was a machine malfunction; correct, sir?

A: That is — *that's the citation, yes, sir.*

A 546 (emphasis added). So this testimony focused on a single citation on a single page of Professor Stewart's pre-hearing declaration. As Respondents well know, Professor Stewart's three hours of live, in-court testimony documented extensive statistical evidence pointing directly to a failure of the machines. *See* Pet. at 17-18 (citing, *e.g.*, A 540-41, 553-54, 579-80). Unfortunately, this instance of Respondents misrepresenting testimony is but one of many examples.⁴

Respondents' twisting of the record evidence cannot disguise what lies at the core of this dispute. ES&S's trade secrets are indispensable to ascertaining the truth about the 2006 election. At this point, Jennings's case is founded on allegations of machine malfunction that are backed by compelling expert testimony, much of which is undisputed. But to prepare her case for trial, Jennings needs access to the machines to prove her theories and to rebut Respondents'. Because denying her that access would "work [an] injustice," FLA. STAT. ANN. § 90.506, the trade-secret privilege must give way.

⁴ For example, in asserting that there is "no evidence" of a "physical" malfunction of the machines, Buchanan Br. at 13 (citing A 545 (Prof. Stewart)); ES&S Br. at 13 (same), Respondents take Professor Stewart's testimony wildly out of context. Professor Stewart was responding to counsel's specific question about pages 24 to 35 of his declaration and merely confirmed that he had made no mention of a "physical malfunction" in those particular pages. A 545.

B. The Trial Court Bypassed Florida's Balancing Test.

Misapplying the “reasonable necessity” standard led the trial court to depart from the essential requirements of law by refusing to conduct the proper balancing test. *See* Pet. at 32-34, 38-41. Contrary to Respondents’ contention (*see, e.g.*, State Br. at 8-9; ES&S Br. at 38-39), numerous Florida decisions expressly mandate this balancing test in all cases of reasonable necessity, requiring trial courts to weigh the plaintiff’s interest in production against the defendant’s interest in maintaining confidentiality.⁵ Respondents plainly recognized this blackletter law when, at the hearing’s opening, *they* asked the trial judge to undertake a “balancing of interest[s],” weighing Jennings’s “necessity for this privileged information [against] the harm that disclosure will cause to the trade-secret owner.” A 528-29. The next day, however, Respondents made a tactical decision not to put on any evidence of such harm. Now they must live with that decision.

Respondents’ failure to adduce evidence of harm cannot be cured simply by highlighting the statutory definition of a “trade secret” as something that has “independent economic value.” State Br. at 9-10 (quoting FLA. STAT. ANN.

⁵ *See, e.g., Sheridan Healthcorp, Inc. v. Total Health Choice, Inc.*, 770 So. 2d 221, 222-23 (Fla. 3d DCA 2000); *American Express Travel Related Servs., Inc. v. Cruz*, 761 So. 2d 1206, 1208-09 (Fla. 4th DCA 2000); *Beck v. Dumas*, 709 So. 2d 601, 603 (Fla. 4th DCA 1998); *Inrecon v. Village Homes at Country Walk*, 644 So. 2d 103, 105 (Fla. 3d DCA 1994); *Freedom Newspapers, Inc. v. Egly*, 507 So. 2d 1180, 1184 (Fla. 2d DCA 1987); *Fortune Pers. Agency of Ft. Lauderdale, Inc. v. Sun Tech Inc. of S. Fla.*, 423 So. 2d 545, 546 n.6 (Fla. 4th DCA 1982).

§ 688.002(4)); *see* ES&S Br. at 26-28; Buchanan Br. at 11 n.6. That argument confuses the fact of injury with the degree of harm. For a court to “balance” the *amount* of harm to a defendant against the *amount* of benefit to a plaintiff, it must assess not only whether the defendant would be harmed, but also how much it would be harmed — specifically, how much it would be harmed by disclosure *pursuant to a protective order*.

In the hope of skirting that assessment, Respondents repeatedly paint this as an “all or nothing” case, pretending that the issue here is full, unfettered, public disclosure of ES&S’s trade secrets. *See, e.g.*, State Br. at 6 n.4 (warning against “full disclosure”); ES&S Br. at 2 (“unfettered possession of the source code”). But unconstrained access is not at stake here. Jennings has voluntarily agreed to be bound (and to have her attorneys and experts bound) by a stringent protective order. Courts routinely hold that a protective order can adequately accommodate a party’s interest in confidentiality. *See Federal Open Market Comm. of Fed. Reserve Sys. v. Merrill*, 443 U.S. 340, 362 n.24 (1979) (“Actually, orders forbidding any disclosure of trade secrets or confidential commercial information are rare. More commonly, the trial court will enter a protective order restricting disclosure to counsel.”).

But Respondents apparently are concerned more with reputation than confidentiality. They argue that ES&S’s trade secrets should not be disclosed to

Professor Wallach, even pursuant to the protective order (which they concede he would comply with), because, as a foe of paperless voting systems, he might draw on “[t]hat information — consciously or otherwise — [in] his future advocacy undertakings to the detriment of ES&S.” State Br. at 10; *see* ES&S Br. at 32. But a “claim that public disclosure of information will be harmful to a defendant’s reputation is not ‘good cause’ for a protective order,” much less for blocking discovery altogether. *Culinary Foods, Inc. v. Raychem Corp.*, 151 F.R.D. 297, 301 (N.D. Ill. 1993).⁶

C. Trade-Secret Precedents Involving Defective Products Uniformly Reject Respondents’ Arguments.

Because this case is about defective machines, the analogy to products-liability cases is instructive. Those cases rebut Respondents’ arguments in two respects.

First, Respondents suggest that Jennings should be content so long as the State Defendants can conduct their own tests of the iVotronic system. That is absurd. In a products-liability action involving a machine malfunction, it would be unthinkable to require a plaintiff to proceed to trial without equal access to the

⁶ ES&S also frets that Petitioners will “tear apart the machines” and seize “actual electronic ballots cast which are contained in the [machines’] memory.” ES&S Br. at 2. But by adopting a charter amendment last fall, the people of Sarasota County already have banned these machines from future use. A 214. And by design, it is impossible to defeat ballot secrecy and trace “actual electronic ballots” back to particular voters because the electronic ballots are “stripped of any identifying information.” ES&S Br. at 2, 17.

machines. *See, e.g., Sponco Mfg., Inc. v. Alcover*, 656 So. 2d 629, 630-31 (Fla. 3d DCA 1995) (entering a default judgment for plaintiff because the allegedly defective product was damaged or destroyed during testing by the defendant); *Rockwell Int'l Corp. v. Menzies*, 561 So. 2d 677, 679 (Fla. 3d DCA 1990) (same); *DePuy, Inc. v. Eckes*, 427 So. 2d 306, 308 (Fla. 3d DCA 1983) (same).

Here, Respondents contend that Jennings should be denied access to the iVotronic system precisely because the State Defendants have been given access to it. That is backwards. In *National Healthcorp Limited Partnership v. Close*, 787 So. 2d 22 (Fla. 2d DCA 2001), the court noted that defendants “‘absolutely’” were barred from “‘introducing evidence to which the plaintiff had been denied access during discovery.’” *Id.* at 25 (quoting trial court). Indeed, the court could not “‘imagine that [defendants] would think otherwise.’” *Id.* Yet here, that is exactly what has happened. Respondents have been permitted to introduce “evidence” from their own tests of the machines — the Parallel Test Summary Report — while plaintiffs have been denied access to those same machines.

Second, Respondents ignore the fact that Jennings is not a business competitor and that the whole point of trade-secrecy law is to protect confidential materials from competitors. When sued by non-competitors, products-liability defendants who invoke the trade-secret privilege almost invariably lose. *See, e.g., Bridgestone Americas Holding, Inc. v. Mayberry*, 854 N.E.2d 355, 363-64 (Ind. Ct.

App. 2006) (requiring defendant to disclose its proprietary formula for making tires because the formula was “reasonably necessary for [the plaintiff] to have a fair opportunity to develop and prepare her case for trial” and would be disclosed only “to a party who is not in competition with the holder of the trade secret”); *Culligan v. Yamaha Motor Corp., USA*, 110 F.R.D. 122, 125 (S.D.N.Y. 1986) (requiring defendant to disclose product-design information after finding the balance of interests weighed in favor of plaintiff because “the plaintiff is not a competitor, and has no interest in the research data except as it relates to this case” and “an appropriate confidentiality order can fully protect [the manufacturer’s] interest in shielding its research information from its competitors”); *Snowden ex rel. Victor v. Connaught Labs., Inc.*, 136 F.R.D. 694, 699 (D. Kan. 1991) (requiring defendant to disclose the formula for a vaccine where plaintiffs had “no other source for this particular information” and any “harm to defendants can and will be lessened by the entry of a protective order”). Here, the trial court simply ignored that the purpose of the privilege is to prevent disclosure of proprietary information to business competitors and Jennings is no competitor to ES&S. Moreover, the trial court did not even consider whether a protective order could adequately accommodate ES&S’s interests.

III. The Trial Court Departed from the Essential Requirements of the Florida Evidence Code.

Respondents do not even agree among themselves about what might have been a proper basis for admitting the Parallel Test Summary Report. The State Respondents claim that the Report is a public record “setting forth the activities of the office or agency,” within the meaning of Section 90.803(8) of the Evidence Code. State Br. at 11. But that exception to the hearsay rule is limited to “records of a simple factual nature,” such as “records showing the receipts and disbursements of a governmental department or official reports of a statistical nature.” CHARLES W. EHRHARDT, FLORIDA EVIDENCE § 803.8 (2006 ed.) (citing cases involving tax receipts, land-sales records, dates and check numbers of payments, and index cards assigning numbers to filed claims); *see also Dykes v. Quincy Tel. Co.*, 539 So. 2d 503, 505 & n.3 (Fla. 1st DCA 1989) (applying this exception, and refusing to admit records that set forth findings of fact).

Implicitly rejecting the State Respondents’ argument, ES&S instead claims that the Report falls within a different hearsay exception, for public records setting forth “matters observed pursuant to duty imposed by law as to matters which there was a duty to report.” FLA. STAT. ANN. § 90.803(8).

Tellingly, the State — which should know best which matters it is duty-bound to observe and report upon — does not argue that the Report falls within this exception. Nor could the State make such an argument because there is simply

no statutory duty to conduct post-election parallel testing and report on it. The statute that ES&S cites (Br. at 40) as creating this duty — Section 101.58(1), Florida Statutes — does no such thing. Rather, Section 101.58(1) simply requires the Department of State to provide official observers and reports *upon the petition of the electorate or candidates*. See FLA. STAT. ANN. § 101.58(1). That was not the basis for the Department of State’s audit here.

It is well-established that “[i]f there is not a duty both to observe and to make the report, the document is not admissible.” EHRHARDT, *supra*, § 803.8; see *University of N. Fla. v. Unemployment Appeals Comm’n*, 445 So. 2d 1062, 1063 (Fla. 1st DCA 1984) (refusing to admit documents absent a statutory duty “that they be made or maintained”). Here, none of the Respondents can point to a statute creating a duty to conduct parallel testing and report on it.

The Parallel Test Summary Report is exactly the type of “evaluative report” meant to be excluded under Section 90.803(8). “The drafters felt that the results of official investigations lacked sufficient reliability to offset the prejudice that would result to the party against whom an unreliable report is introduced.” EHRHARDT, *supra*, § 803.8. That is why “[i]n Florida, rather than offering this type of record, a witness must be called who has personal knowledge of the facts.” *Lee v. Department of Health & Human Servs.*, 698 So. 2d 1194, 1201 (Fla. 1997) (citation omitted).

The weakness of Respondents' arguments is demonstrated by the lengths to which they go to provide "alternative" arguments. For example, ES&S contends that the Rules of Evidence do not "strictly apply" here because this was "a hearing on a preliminary question dealing with discovery and the existence of a privilege." ES&S Br. at 39-40. That is bizarre. Florida's Rules of Evidence apply to *all* judicial proceedings "[u]nless otherwise provided by statute," and no statutory exception applies here. FLA. STAT. ANN. § 90.103(1).

Furthermore, as the Petition explains (Pet. at 41, 46-50), the trial court clearly erred when it found that Jennings had "presented no evidence" demonstrating the Report's invalidity. A 808. Professor Wallach testified that, although he did not doubt the "accuracy" of the State's audit, he did doubt its "completeness" and thus viewed its results as untrustworthy. A 600; *see* Pet. at 45-50 (citing A 559, 563, 586-89, 594-96, 600-02 (cataloging six key shortcomings that rendered the audit's parallel test incomplete and untrustworthy)).

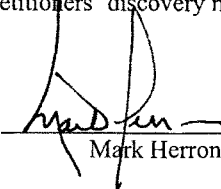
IV. Florida's Election Laws Do Not Preclude the Requested Discovery.

Recognizing the weakness of its position on the trade-secrets privilege, ES&S asserts that Florida's election laws somehow independently bar Jennings from discovery in this case. *See* ES&S Br. at 46-50. To the contrary, in election contests Florida courts routinely have allowed plaintiffs to access and examine voting machines and ballots. For example, in *Wikler v. Haber*, 277 So. 2d 51 (Fla.

3d DCA 1973), by court order, “[p]etitioner, his attorney and his representatives” were allowed to “examine[] all the voting machines” used in key precincts where problems allegedly had arisen. *Id.* at 52. After the petitioner’s “check, recheck, and tabulation” of those machines showed no error, the court dismissed the election contest. *See id.*; *see also, e.g., Beckstrom v. Volusia County Canvassing Bd.*, 707 So. 2d 720, 726 (Fla. 1998); *McLean v. Bellamy*, 437 So. 2d 737, 750 (Fla. 1st DCA 1983); *Barber v. Moody*, 229 So. 2d 284, 286-87 (Fla. 1st DCA 1969); *Spradley v. Bailey*, 292 So. 2d 27, 30 (Fla. 1st DCA 1974). ES&S’s interpretation of the election statutes is simply erroneous and, tellingly, is not shared by those charged with enforcing and administering the statutes — the State Respondents.

CONCLUSION

This Court has long held that “the purpose of the statutes permitting election contests is to prevent the thwarting of the will of the electors either by fraud or by common mistakes honestly made.” *Barber*, 229 So. 2d at 286. To effectuate that purpose, the Court should grant the writ of certiorari on an expedited basis and quash the trial court’s order denying Petitioners’ discovery motions.



Mark Herron

Kendall Coffey
Florida Bar No. 259861
COFFEY & WRIGHT, LLP
2665 South Bayshore
Drive
PH-2, Grand Bay Plaza
Miami, FL 33133
P: (305) 857-9797
F: (305) 859-9919
kcoffey@coffeywright.com

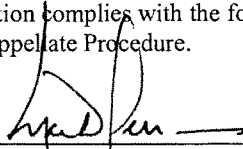
Mark Herron
Florida Bar No. 199737
MESSER, CAPARELLO &
SELF, P.A.
2618 Centennial Place
Tallahassee, FL 32308
P: (850) 222-0720
F: (850) 558-0659
mherron@lawfla.com

Donald B. Verrilli, Jr.
Sam Hirsch
Jessica Ring Amunson
JENNER & BLOCK LLP
601 13th Street, N.W.
Suite 1200
Washington, DC 20005
P: (202) 639-6000
F: (202) 639-6066
dverrilli@jenner.com
shirsch@jenner.com
jamunson@jenner.com

2919

CERTIFICATE OF COMPLIANCE

I HEREBY CERTIFY that this Petition complies with the font requirements of Rule 9.100(1) of the Florida Rules of Appellate Procedure.



Mark Herron

Kendall Coffey
Florida Bar No. 259861
COFFEY & WRIGHT, LLP
2665 South Bayshore Dr.
PH-2, Grand Bay Plaza
Miami, FL 33133
Telephone: (305) 857-9797
Facsimile: (305) 859-9919
E-mail: kcoffey@coffeywright.com

Mark Herron
Florida Bar No. 199737
Messer, Caparello & Self, P.A.
2618 Centennial Place
Tallahassee, Florida 32308
Telephone: (850) 222-0720
Facsimile: (850) 558-0659
E-mail: mherron@lawfla.com

Donald B. Verrilli, Jr.
Sam Hirsch
Jessica Ring Amunson
JENNER & BLOCK LLP
601 13th Street, NW
Suite 1200 South
Washington, DC 20005
Telephone: (202) 639-6000
Facsimile: (202) 639-6066
E-mail: dverrilli@jenner.com
shirsch@jenner.com
jamunson@jenner.com

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CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a copy of this motion was furnished to the following by United States Mail, this 20th day of February, 2007:

Peter Antonacci
 Allen C. Winsor
 GrayRobinson, P.A.
 P.O. Box 11189
 Tallahassee, FL 32302
 Telephone: (850) 577-9090
 Facsimile: (850) 577-3311
 E-mail: pva@gray-robinson.com
 awinsor@gray-robinson.com
Attorneys for State Defendants

Hayden R. Dempsey
 Glenn T. Burhans, Jr.
 Greenberg Traurig, P.A.
 101 East College Avenue
 Tallahassee, FL 32301
 Telephone: (850) 222-6891
 Facsimile: (850) 681-0207
 E-mail: dempseyh@gtlaw.com
 burhansg@gtlaw.com
*Attorneys for Defendant Vern
 Buchanan*

Reginald J. Mitchell
 People for the American Way
 Foundation
 1550 Melvin Street
 Tallahassee, FL 32301
 Telephone: (850) 877-0307
 Facsimile: (850) 402-1999
 E-mail: rmitchell@pfaw.org
Attorney for Fedder Plaintiffs

John Bonifaz
 Voter Action

Ronald A. Labasky
 Young Van Assenderp, P.A.
 225 South Adams Street
 Tallahassee, FL 32301
 Telephone: (850) 222-7206
 Facsimile: (850) 561-6834
 E-mail: rlabasky@yvlaw.net
*Attorney for Defendant Supervisor Kathy
 Dent*

Frederick J. Elbrecht
 Sarasota County Attorney's Office
 1660 Ringling Blvd., Floor 2
 Sarasota, FL 34236-6870
 Telephone: (941) 861-7272
 Facsimile: (941) 861-7267
 E-mail: relbrecht@scgov.net
*Attorney for Defendant Sarasota County
 Canvassing Board*

Miguel De Grandy P.A.
 800 S. Douglas Rd., Suite 850
 Coral Gables, FL 33134-2088
 Telephone: 305-444-7737
 Facsimile: 305-443-2616
 Email: mad@degrandylaw.com
Attorney for Defendant ES&S

Harry O. Thomas
 Radey Thomas Yon & Clark, P.A.
 P.O. Box 10967
 Tallahassee, FL 32302-2967
 Telephone: 850-425-6654
 Facsimile: 850-425-6694
 Email: hthomas@radeylaw.com

2921

c/o Demos
27 School Street, Suite 500
Boston, MA 02108
Telephone: (617) 624-3900, ext. 22
Facsimile: (617) 624-3911
E-mail: jbonifaz@demos.org
Attorney for Fedder Plaintiffs

David Becker
Judith E. Schaeffer
People for the American Way
Foundation
2000 M Street N.W. #400
Washington, D.C. 20036
Telephone: (202) 467-4999
Facsimile: (202) 293-2672
E-mail: dbecker@pfaw.org
jschaeffer@pfaw.org
Attorneys for Fedder Plaintiffs

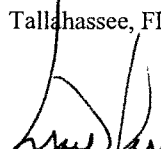
Muslima Lewis
Randall C. Marshall
Aziza Naa-Kaa Botchway
ACLU Foundation of Florida, Inc.
4500 Biscayne Boulevard, Suite 340
Miami, FL 33137-3227
Telephone: (786) 273-2729
Facsimile: (786) 363-1448
E-mail: mlewis@aclufl.org
rmarshall@aclufl.org
abotchway@aclufl.org
Attorneys for Fedder Plaintiffs

Attorney for Defendant ES&S

Cindy A. Cohn
Matthew J. Zimmerman
Electronic Frontier Foundation
454 Shotwell Street
San Francisco, CA 94110
Telephone: (415) 436-9333 x127
Facsimile: (415) 436-9993
E-mail: cindy@eff.org
mattz@eff.org
Attorneys for Fedder Plaintiffs

Rebecca Harrison Steele
Zeina N. Salam
ACLU Foundation of Florida, Inc.
West Central Florida Office
P.O. Box 18245
Tampa, FL 33679-8245
Telephone: (813) 254-0925
Facsimile: (813) 254-0926
E-mail: rsteele@aclufl.org
zsalam@aclufl.org
Attorneys for Fedder Plaintiffs

The Honorable William L. Gary
The Circuit Court for the Second Judicial
Circuit
Leon County Courthouse
301 S. Monroe Street
Tallahassee, FL 32301


COUNSEL FOR PETITIONER
Kendall Coffey
Florida Bar No. 259861
COFFEY & WRIGHT, LLP
2665 South Bayshore Dr.

SA-234

2922

PH-2, Grand Bay Plaza
Miami, FL 33133
Telephone: (305) 857-9797
Facsimile: (305) 859-9919
E-mail: kcoffey@coffeywright.com

Mark Herron
Florida Bar No. 199737
MESSER, CAPARELLO & SELF, P.A.
2618 Centennial Place
Tallahassee, Florida 32308
Telephone: (850) 222-0720
Facsimile: (850) 558-0659
E-mail: mherron@lawfla.com

Donald B. Verrilli, Jr.
Sam Hirsch
Jessica Ring Amunson
JENNER & BLOCK, LLP
601 13th Street, NW, Suite 1200 South
Washington, DC 20005
Telephone: (202) 639-6000
Facsimile: (202) 639-6066
E-mail: dverrilli@jenner.com
shirsch@jenner.com
jamunson@jenner.com

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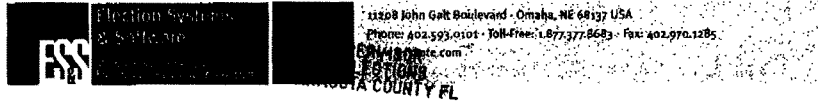
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ELECTIONS SARASOTA CNTY

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2006 AUG 22 A 8 52

August 15, 2006

Dear FL Users:

FILED FOR RECORD
KATHY BENT

It has come to our attention after a number of inquiries from several of our iVotronic 12 inch screen users that some of your screens are exhibiting slow response times. After receiving some of these terminals in our Omaha, NE facility we were able to replicate a slow response during our testing.

After further analysis of the issue it has been determined that touchscreens on units with previous versions of firmware did not exhibit this condition. Therefore, our Engineering and Development Teams reviewed the differences in firmware code for versions 8.0.1.2 and 7.4.5.0 to establish the possible cause of this condition.

We have determined that the delayed response time is a result of a smoothing filter that was added to iVotronic firmware versions 8.x and higher. This smoothing filter waits for a series of consistent touchscreen reads before a candidate name is highlighted on the ballot. In some cases, the time lapse on these consistent reads is beyond the normal time a voter would expect to have their selection highlighted. This delayed response to touch may vary from terminal to terminal and also may not occur every single time a terminal is used.

The improvement will require an update to the firmware, and state-level certification. We have already taken steps to make the necessary changes to the firmware. Our plans are to certify this in the state of Florida in time for use for the November, 2006 General Election. This firmware upgrade would not involve any Unity software changes or upgrades to any other component of your voting system. This firmware change is only necessary for the 12" size iVotronic screens.

In order to avoid any potential issues at the polls on September 5th, it is our recommendation that you train your poll workers and voters to expect this slightly delayed response time for their highlighted selections. We have included with this mailing a sample voting booth instruction sign for your review and use.

It is important to note that this delayed response time in no way affects the integrity or reliability of the iVotronic voting system. All votes will be recorded securely and accurately as they always have been. No other functionality within the iVotronic system is compromised or affected by this issue.

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03/14/07 WED 12:20 FAX 841 861 8809

ELECTIONS SARASOTA CNTY

003

It is our goal and focus at ES&S to provide secure, accurate and reliable voting systems to all of our clients worldwide. On behalf of ES&S, I can assure you that we are working with the Florida Division of Elections to rectify this situation and to prevent it from being an issue in all other future elections.

We will keep you posted on our developments as we work through the necessary phases of implementing this firmware in our 12" iVotronic screen counties in Florida.

Thank you for continued support.

Sincerely,

Linda Bennett
Regional Account Manager

Cc: David R. Drury, Chief, Bureau of Voting Systems Certification

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Tab 13

tampabay.com Know it now.

Sarasota officials ignored warning about voting machines

An alert on glitches came ahead of recent election troubles but no one followed up.

By ANITA KUMAR
Published March 15, 2007

The maker of the voting machines used in last fall's disputed Sarasota area congressional race warned state and county officials that voters might have trouble recording their votes but the company's advice for fixing the problem went unheeded.

And as the controversy swirled into another national debate about another troubled Florida election, state and county officials never told anyone about the company warning that some of its touch-screen machines could produce a seconds-long delay before recording votes.

An Aug. 15 letter from Election Systems & Software told state and county officials about "slow response times" in recording votes on some of its machines. The company said an "update to the firmware" was required and also suggested counties post signs and train poll workers and voters about the need to press firmly for several seconds to ensure that the machine properly recorded the vote.

That never happened in Sarasota County.

And although state, county and company officials insist the accuracy of the vote counting was not in jeopardy, Pasco County got the same letter and chose not to use the 40 affected machines on Election Day in November.

"It wasn't any big deal," Sarasota Supervisor of Elections Kathy Dent said Wednesday.

Letter comes to light

The Election Systems & Software letter made its way into public light this week on a North Carolina-based Web site devoted to election issues. Officials with the Florida Division of Elections and the Sarasota County Elections Supervisor could not explain why the memo had not been previously released, particularly since the losing candidate in the race had filed a lawsuit and a public records request to collect all relevant documents.

"Clearly we should have gotten this letter," said Sam Hirsh, attorney for Christine Jennings, the Democrat who lost. "I think they knew it was a smoking gun. This goes to the very core of the case."

Dent said her attorney advised her not to talk about the lack of disclosure of the letter and the state's attorneys were still reviewing the issue and would not comment.

Rep. Chris Van Hollen, chairman of the group that helps Democrats get elected to Congress, said Wednesday that he was disturbed "that election officials withheld the information about the voting machine problem" before and after the election.

Republican Vern Buchanan was sworn into the U.S. House in January, but Jennings refuses to concede, disputing her loss in the Florida courts and in Congress.

Voters complaints

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At issue: More than 18,000 people, or 13 percent of all voters, did not record a vote in the race, a rate higher than in other counties in the congressional district. On election day and afterward many voters complained that they had tried to vote in the race, but said the machine wouldn't take their ballot.

The state examined the machines and paid independent researchers to investigate before concluding that the computers were not faulty.

The letter from Election Systems & Software was sent to the state official responsible for certifying machines used in Florida and to the 11 Florida counties that use the company's touchscreen machines, including Pasco.

The company said it planned to solve the problem before the November election. But in a statement released Wednesday, company spokesman Ken Fields said there was not enough time to make the fix and get the machines recertified by the state before Election Day.

County and state officials said Wednesday they did not question the company when it failed to bring forward an upgrade before the election because, despite the response delay, the machines were working properly.

"We weren't experiencing a problem," Dent said.

"There was no need to go to the vendor to change the systems that close to the election," said Sterling Ivey, spokesman for the state Division of Elections. "The elections were not in jeopardy."

State and county officials said the company was responsible for bringing any necessary machine upgrades to the state to be tested and certified.

Post-election lawsuits

Auditors who conducted a state-funded investigation after the election determined the machines' slow response time did not contribute to the undervote, said Alec Yasinsac, an FSU computer science professor and project leader.

Yasinsac said the team looked into the slow response time after seeing a copy of the company's letter and reviewing logs of poll workers who complained about a delay in votes being recorded.

The company has repeatedly stressed that the delay, which will be fixed later this year, "did not affect any race or the accumulation of votes," Fields said.

But similar undervoting problems occurred in the attorney general's race on machines used in Lee, Charlotte and Sumter counties, though not enough to make a difference in the outcome of the election.

Jennings filed a lawsuit in November, asking for a new vote, as well as access to the disputed machines' hardware and software. A Leon County judge ruled against Jennings with regard to access to the machines, but she has appealed. A decision is expected any day.

Jennings also has taken the extreme measure of asking the U.S. House to intervene.

The case has been tied up in courts for months, and any action by the House - if there is any - will likely wait until the lawsuit is settled.

Calls to Buchanan's attorney were not returned Wednesday.

Times staff writer Rebecca Catalanello and staff researcher Caryn Baird contributed to this report. Anita Kumar can be reached at akumar@sptimes.com or 202 463-0576.

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A warning to election officials

Election Systems & Software, which designed the touch screen machines used in Sarasota, sent a letter to elections officials on Aug. 15 warning that voters might have difficulty registering their choices on some machines. An excerpt of the letter is shown below, as well as a sign provided by the company that could have been used to instruct voters. The sign was not used in Sarasota.

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http://www.sptimes.com/2007/03/15/news_pf/State/Sarasota_officials_ig.shtml

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Coffey & Wright, LLP
Attorneys at Law

KENDALL COFFEY
MARY ANN HUEY
MARK A. JOURNEY
ANGELA D. SHERRILL
ROBERT T. WRIGHT, JR.

OF COUNSEL: LISA B. HOGAN

GRAND BAY PLAZA • PENTHOUSE 2B
2665 SOUTH BAYSHORE DRIVE
MIAMI, FLORIDA 33133-5462

TELEPHONE • 305-857-9797
TELECOPIER • 305-859-9919

November 8, 2006

*Via Federal Express
and Facsimile: (941) 861-8609*
The Honorable Kathy Dent
Supervisor of Elections
Sarasota County Department of Elections
101 South Washington Boulevard
Sarasota, FL 34236

Re: *Christine Jennings for Congress
13th Congressional District, Florida*

Dear Ms Dent:

This letter is directed to you as custodian for the Sarasota County Department of Elections of all documents, records, devices, ballots, forms, and other election materials within the meaning of Chapters 119 and 101, Florida Statutes.

First, in accordance with Florida Statute §119.07, we serve the following public records request. As §119.07 requires, please make the following documents and items described below available for inspection, examination, and copying within a reasonable time as promptly as possible. Failure to permit inspection, examination, and copying of the following described items within a reasonable time may result in the assessment of all reasonable costs, suit monies, and attorney's fees associated with enforcement proceedings in this matter against the County, as §119.12 provides. This request includes the following categories:

1. All original absentee ballots cast in connection with the General Election,
2. All original provisional ballots cast in the General Election (including both the early voting period and the day of the General Election),

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3. The zero tape printout(s) for each precinct, showing registration of "0" votes on all voting equipment before the commencement of the early voting period as well as in the morning of November 7, 2006; the day of the General Election,
4. The results tape for each precinct, showing the total Public Count and the Public Count for each electronic voting machine, including, but not limited to, the votes cast on each of the electronic voting machines for both the early voting period and the day of the General Election, November 7, 2006,
5. Any and all documents pertaining to the number of voters voting at each early voting precinct per day including, but not limited to, the early voting certificate generated for each voter voting at each precinct,
6. Any and all documents pertaining to the number of voters voting at each precinct on November 7, 2006, the day of the General Election including, but not limited to, the original, signed Authorization Slips and the original Precinct Registers, and any computer printouts that could provide information as to the number of voters per precinct, and
7. Any and all documents including, but not limited to, correspondence, emails, notes, reports, memoranda, and/or all other similar documents received in your office and/or generated by or within your office (including, but not limited to, internal documents), from January 1, 2006 to the date of production, evidencing complaints or concerns about actual or alleged problems with the electronic voting equipment and its components.

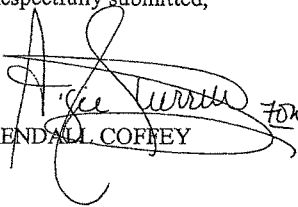
Second, and in addition to the foregoing categories, we ask that, in conformance with Florida Statute §101.545, you retain and sequester "all ballots, forms, and other election materials." Consistent with this requirement, we seek to review and inspect the actual electronic voting equipment and voting devices utilized at each precinct during the period of early voting as well as on the day of the General Election, November 7, 2006, including the voting machines themselves, memory cards for each machine, PEB and other devices, any documents evidencing the votes harvested from each machine, and all other electronic voting equipment and devices utilized in the General Election (during both the early voting period as well as on November 7, 2006). As required by Florida Statutes §101.545, please immediately take steps to sequester, preserve, and secure these machines and their components and all other evidence of votes cast in this election.

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The Honorable Kathy Dent
November 8, 2006
Page 3

Should Sarasota County contend that any category or portion thereof is exempt from disclosure, please promptly state the basis for each claimed exemption and provide us with a redacted copy of the item(s) for which an exemption is claimed. The legal authority governing public records requests indicates that such records must be open and available at all reasonable times for review and inspection. Please contact us if you have any questions. We appreciate your consideration of these matters.

Respectfully submitted,


KENDALL COFFEY

AS/tsd

SA-243

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Tab 15

IN THE CIRCUIT COURT OF THE SECOND JUDICIAL CIRCUIT
IN AND FOR LEON COUNTY, FLORIDA
CIVIL DIVISION

ELLEN FEDDER, LANCE JONES,
ERNEST LASCHE a/k/a MIKE LASCHE,
BARBARA KLEIN, LOIS HARMES,
JOHN MINDER, DOVIE MURRAY,
JOHN MCBRIDE, SUSAN GAAR,
GARY LAMER, CHARLES CLIFTON,

Plaintiffs,

v.

No. 06 CA 2996

TOM GALLAGHER, CHIEF
FINANCIAL OFFICER, STATE OF
FLORIDA, and GOVERNOR JEB
BUSH, and STATE SENATOR DAN
WEBSTER, as members of and as the
FLORIDA ELECTIONS CANVASSING
COMMISSION, and SUE M. COBB,
as SECRETARY OF STATE,
STATE OF FLORIDA,

and

THE SARASOTA COUNTY
CANVASSING BOARD,
SARASOTA COUNTY JUDGE
PHYLLIS GALEN, SARASOTA
COUNTY COMMISSIONER
PAUL MERCIER, and KATHY
DENT, SARASOTA COUNTY
SUPERVISOR OF ELECTIONS,
as members of and as THE
SARASOTA COUNTY
CANVASSING BOARD, and KATHY
DENT, as Supervisor of Elections,

and

VERN BUCHANAN, Nominee of
the Republican Party of Florida for
the 13th Congressional District of Florida,

Defendants.

**VOTER PLAINTIFFS' FIRST SET OF REQUESTS FOR
PRODUCTION AND INSPECTION TO ES&S**

Pursuant to Rule 1.350 of the Florida Rules of Civil Procedure, Plaintiffs request that Election Systems and Software ("ES&S") produce all Documents responsive to the following Requests for Production at the offices of undersigned counsel as soon as practicable and, in any event, within 10 days of the service of these Requests. Plaintiffs also request that ES&S make available for inspection as soon as practicable all things sought in its Requests for Inspection.

INSTRUCTIONS

1. These requests require the production and/or inspection of all responsive materials within the sole or joint possession, custody, or control of ES&S, including, without limitation, any such Documents that lie within the possession, custody, or control of any agents, agencies, departments, attorneys, employees, consultants, representatives, or other persons or entities acting for, or otherwise subject to the control of, ES&S.

2. These requests are continuing in nature and require prompt supplemental responses for any and all responsive Documents that come into ES&S's sole or joint possession, custody, or control after the service of any initial responses.

3. Each of these requests requires a separate answer. For each Document, indicate the Request to which it responds.

4. All responsive Documents are required to be produced either (a) as they are kept in the usual course of business (together with copies of any file labels or binder covers for the files or binders in which they are maintained) or (b) organized and labeled to correspond with the categories of the Requests to which they respond (see Rule 1.350(b)).

5. For any responsive Document or portion thereof that is either redacted or withheld, in whole or in part, on the basis of any assertion of privilege or other asserted exemption from discovery, identify (a) the title or identity of the Document; (b) the date of the Document; (c) the type or nature of the Document; (d) the identity, title or responsibilities, and relationship to ES&S of all persons who either prepared or received the Document; (e) the type and nature of the privilege or exemption asserted; and (f) the contents or subject matter of the Document, with sufficient detail to explain the basis for the privilege or exemption asserted (see Rule 1.280(b)(5)). For any such responsive Document or portion thereof that may not properly be redacted or withheld in its entirety, produce each and every portion thereof to which the claimed privilege or exemption does not apply and specify, on the face of each such page or portion, the fact and reason for the redaction or withholding.

6. Wherever possible or necessary to render a given Request more inclusive than it otherwise might be, the singular should be construed to include the plural, and vice versa; the disjunctive should be construed to include the conjunctive, and vice versa; and any verb tense should be construed to include other tenses.

DEFINITIONS

1. "Defendants" means any and all named Defendants in this action, both individually and jointly, their offices, subordinates, employees, agents and representatives.
2. "Election official" means any employee, agent, or representative of Florida state or local government authorized to take part in (or otherwise participates in) the administration of any election held within Florida.
3. "Document" is used in the broadest sense permissible under the Florida Rules of Civil Procedure to encompass and mean the product of any method of recording information,

whether by writing or otherwise, including without limitation: any written, electronic, or computerized files, data, or software; memoranda; correspondence; communications; records; reports; summaries; studies; analyses; evaluations; notes or notebooks; indices; logs; books, booklets, or binders; pamphlets; calendar or diary entries; press clippings; graphs; tables; charts; drawings; maps; meeting minutes; photographs; transcripts; audio or video recordings or tapes; facsimile transmissions; electronic mail messages; administrative decisions, orders, or rulings; and the like.

The term "Document" should be construed to encompass all responsive Documents and related materials of any nature and each and every copy or draft of a Document that is not identical to the original or to any other copy or draft.

4. The term "DRE" refers to direct recording electronic voting machines.

5. The term "OPSCAN" refers to optical scan voting machines.

6. The term "voting system" refers to the total combination of mechanical, electro-mechanical, or electronic equipment, and any ancillary equipment and software, firmware, and documentation required to program, control, and support the equipment, all of which is used to define ballots, cast and count votes, report and/or display election results, and maintain and produce any audit trail information. Only systems that utilize DRE or OPSCAN voting machines are included in this definition unless otherwise stated.

7. The term "malfunction" refers to any event reported by anyone regarding any voting system or any component thereof indicating (1) that the voting system did not record or may not have accurately recorded a voter's vote, (2) that voters encountered difficulty using the voting system, (3) that voting system exhibited anomalous or unexpected behavior, or (4) that the

voting system failed to properly perform any function for which it was certified under state or federal law.

8. Unless otherwise specified, "November 7, 2006, election" and "election of November 7, 2006" refers to the November 7, 2006, general election in Sarasota County, Florida as well as any corresponding early voting.

REQUESTS FOR PRODUCTION

Request for Production No.1.

Documents sufficient to show the name, address, and job title of all employees that participated in the administration of the November 7, 2006, election.

Request for Production No.2.

For the November 7, 2006, election, all Documents discussing, relating to, reflecting, or in any manner memorializing any reported voting system malfunction, including but not limited to Documents identifying any components that reportedly malfunctioned and any remedial action taken.

Request for Production No.3.

For any election in any jurisdiction, all Documents discussing, relating to, reflecting, or in any manner memorializing any reported voting system malfunction, including but not limited to Documents identifying any components that reportedly malfunctioned and any remedial action taken.

Request for Production No.4.

Any election plan, manual, guide, policy, rule, procedure, or practice provided to any Sarasota County election official or poll worker regarding the administration or use of voting equipment, creating and loading ballots, or tabulating and submitting results.

Request for Production No.5.

For the November 7, 2006, election all data generated by any voting machine that reportedly malfunctioned, including but not limited to ballot images, redundant or backup vote data, and audit data from DRE and OPSCAN voting machines.

Request for Production No.6.

For the November 7, 2006, election, all communications between and/or among Defendants (including ES&S), election officials, or poll workers regarding the malfunction of any voting system or component thereof.

DATED: December 11, 2006

Respectfully submitted,

By _____

Counsel for Voter Plaintiffs

Lowell Finley, Esq.
(Pro hac vice application to be filed)
VOTER ACTION
1604 Solano Avenue
Berkeley, California 94707
Telephone: (510) 318-2248
Facsimile: (415) 723-7141

Cindy A. Cohn, Esq.
Matthew J. Zimmerman, Esq.
(Pro hac vice applications to be filed)
ELECTRONIC FRONTIER
FOUNDATION
454 Shotwell Street
San Francisco, California 94110
Telephone: (415) 436-9333 x127
Facsimile: (415) 436-9993

Elliot M. Minberg, Esq.
Judith E. Schaeffer, Esq.
(Pro hac vice applications to be filed)
PEOPLE FOR THE AMERICAN WAY
FOUNDATION
2000 M Street N.W. #400
Washington, D.C. 20036
Telephone: (202) 467-4999
Facsimile: (202) 293- 2672

Rebecca Harrison Steele, Esq.
Fla. Bar No. 067326
Zeina N. Salam, Esq.
Florida Bar No. 653632
ACLU FOUNDATION OF FLORIDA,
INC.
West Central Florida Office
112 N. Delaware Ave.
Tampa, FL 33606
P.O. Box 18245
Tampa, FL 33679-8245
Telephone: (813) 254-0925
Facsimile: (813) 254-0926

Reginald J. Mitchell, Esq.
Florida Bar No.0621293
PEOPLE FOR THE AMERICAN WAY
FOUNDATION
1550 Melvin Street
Tallahassee, FL 32301
Telephone: (850) 877-0307
Facsimile: (850) 402-1999

Muslima Lewis, Esq.
Director – Voting Rights Project
Florida Bar No. 0158305
Randall C. Marshall, Esq.
Legal Director
Florida Bar No. 181765
Aziza Naa-Kaa Botchway
Florida Bar No.: 017803
ACLU FOUNDATION OF FLORIDA,
INC.
4500 Biscayne Boulevard, Suite 340
Miami, FL 33137-3227
Telephone: (786) 273-2729
Facsimile: (786) 363-1448

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the above has been furnished by
facsimile on this 11th day of December 2006 to the following:

Kendall Coffey, Esq.
Florida Bar No.: 259861
Coffey & Wright, LLP
2665 South Bayshore Dr.
PH-2, Grand Bay Plaza
Miami, FL 33133
Telephone: (305) 857-9797
Facsimile: (305) 859-9919
*Attorney for Plaintiff Candidate
Christine Jennings*

Ron Labasky, Esq.
Florida Bar No.: 206326
Young Van Assenderp, P.A.
225 South Adams Street
Suite 200
Tallahassee, FL 32301-1700
Telephone: (850) 222-7206
Facsimile: (850) 561-6834
*Attorney for Defendants Supervisor of
Elections Kathy Dent and Judge Phyllis
Galen*

Sam Hirsch, Esq.
Jessie Amunson, Esq.
Donald E. Verrilli, Esq.
(Pro hac vice applications filed)
Jenner & Block, LLC
601 Thirteenth Street, NW
Suite 1200 South
Washington, DC 20005
Telephone: (202) 639-6000
Facsimile: (202) 661-4900
*Attorneys for Plaintiff Candidate
Christine Jennings*

Glenn Thomas Burhans Jr., Esq.
Florida Bar No.: 605867
Hayden R. Dempsey, Esq.
Florida Bar No.: 0014435
Greenberg Traurig, P.A.
101 East College Avenue
Tallahassee, FL 32301
Telephone: (850) 222-6891
Facsimile: (850) 681-0207
*Attorneys for Defendant Candidate Vern
Buchanan*

Mark Herron, Esq.
 Florida Bar No.: 199737
 Messer, Caparello & Self, P.A.
 2618 Centennial Place
 Tallahassee, Florida 32308
 Telephone: (850) 222-0720
 Facsimile: (850) 558-0659
***Attorney for Plaintiff Candidate
 Christine Jennings***

Pete Antonacci, Esq.
 Florida Bar No.: 280690
 Allen C. Winsor, Esq.
 Florida Bar No.: 16295
 Gray Robinson, P.A.
 300 South Bronough Street
 Suite 600
 Tallahassee, FL 32301
 Telephone: (850) 577-9090
 Facsimile: (850) 577-3311
***Attorneys for Defendants, Governor Jeb
 Bush, Secretary of State Sue M. Cobb
 and State Senator Daniel Webster***

Richard T. Donelan, Jr., Esq.
 Florida Bar No.: 198714
 Chief Counsel
 Department of Financial Services
 200 East Gaines Street
 Tallahassee, FL 32399-4727
 Telephone: (850) 413-3010
 Facsimile: (850) 413-3029
***Attorney for Defendant Tom Gallagher,
 Chief Financial Officer***

Stephen Demarsh
 Florida Bar No.: 335649
 Frederick J. Elbrecht
 Florida Bar No.: 314609
 Office of the County Attorney
 1660 Ringling Boulevard, Second Floor
 Sarasota, FL 34236-6870
 Telephone: (941) 861-7272
 Facsimile: (941) 861-7267
***Attorneys for Defendant County
 Commissioner Paul Mercier
 Miguel A. DeGrandy
 Florida Bar No.: 332331
 Miguel DeGrandy P.A.
 800 S. Douglass Road, Suite 850
 Coral Gables, FL 33134-2088
 Telephone: (305) 444-7737
 Facsimile: (305) 374-8743
 Attorney for Defendant Election Systems
 & Software, Inc.***

Harry O. Thomas, Esq.
 Florida Bar No.: 195097
 Radey Thomas Yon & Clark, P.A.
 Post Office Box 10967
 Tallahassee, Florida 32302
 301 S. Bronough Street, Suite 200
 Tallahassee, FL 32301-1722
 Telephone: (850) 425-6654
 Facsimile: (850) 425-6694
***Attorney for Defendant Election Systems
 & Software, Inc.***

By: _____
 Rebecca Harrison Steele, Esq.

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Tab 16

IN THE CIRCUIT COURT FOR THE SECOND JUDICIAL CIRCUIT
IN AND FOR LEON COUNTY, FLORIDA
CIVIL DIVISION

CHRISTINE JENNINGS, nominee of the
Democratic Party for Representative in
Congress from the State of Florida's
Thirteenth Congressional District,

Plaintiff,

CASE NO. 2006-CA-2973

Consolidated with Case No. 2006-CA-2996

vs.

ELECTIONS CANVASSING COMMISSION
OF THE STATE OF FLORIDA, consisting of
Governor Jeb Bush, Chief Financial Officer
Tom Gallagher and State Senator Daniel Webster,
et al.,

Defendants.

**DEFENDANT ELECTION SYSTEMS & SOFTWARE, INC., RESPONSE TO VOTER
PLAINTIFFS' FIRST SET OF REQUESTS FOR PRODUCTION AND INSPECTION**

Defendant, Election Systems & Software, Inc., ("ES&S") responds to Voter Plaintiffs' First Set of Requests For Production and Inspection ("Discovery Request") as follows:

GENERAL OBJECTIONS

1. ES&S objects to the Discovery Requests to the extent they seek information that was prepared for or in anticipation of litigation, that constitute work product, that is protected by the attorney-client privilege, that is protected by the trade secret privilege or that is otherwise privileged or protected against discovery.
2. ES&S objects to providing information called for by the Discovery Requests that is publicly available or that is already or should be in the possession, custody, or control of Voter Plaintiffs or that was provided or will be provided to the Voter Plaintiffs by other Defendants.
3. ES&S objects to the Discovery Requests to the extent they purport to require ES&S

to provide information not presently in its possession, custody, or control, or to make unreasonable inquiries of persons or other entities.

4. ES&S objects to the Discovery Requests to the extent that they are vague, overly broad, unduly burdensome, harassing, and/or not reasonably calculated to lead to the discovery of relevant or admissible evidence.

5. ES&S' responses to the Discovery Requests are made without in any way waiving or intending to waive, and ES&S expressly preserves:

- (A) all objections it may have as to the competence, relevance, materiality, and admissibility as evidence for any purpose of the information to be produced, or the subject matters thereof;
- (B) the right to object on any ground to the use of the information in any aspect of this or any other court action or judicial or administrative proceeding or investigation;
- (C) all applicable privileges, exemptions, and protections from discovery; and
- (D) the right at any time to supplement their responses to the

Discovery Requests.

6. ES&S objects to the Discovery Requests to the extent that they seek documentation which is confidential and exempt trade secrets as defined by §§ 688.002, 812.081 Florida Statutes (2006). Voter Plaintiffs have moved to compel production of privileged trade secret documentation from the State Defendants and Sarasota County Defendants. ES&S will not produce any such documentation unless and until ordered by the Court.

7. ES&S objects to the Discovery Requests to the extent that they are continuing in nature and require prompt supplemental responses. *See* Rule 1.280(e), Fla.R.Civ.P.

8. ES&S objects to the Discovery Requests to the extent that they require separate answers and for each document to indicate the response to which it responds. ES&S has the option to produce any responsive documents as they are kept in the usual course of business. *See* Rule 1.350(b), Fla.R.Civ.P.

9. ES&S objects to the Discovery Requests to the extent that they seek documents to which Plaintiff Jennings is not entitled to seek through discovery. The Voter Plaintiffs have no greater rights in this action than Plaintiff Jennings.

RESPONSE TO REQUESTS FOR PRODUCTION

Subject to the objections below and the general objections which are incorporated by reference into each specific response below, ES&S will produce the requested documents as detailed below.

RFP NO. 1:

Documents sufficient to show the name, address, and job title of all employees that participated in the administration of the November 7, 2006, election.

RESPONSE TO RFP NO. 1:

ES&S objects to RFP No. 1 because it is vague and ambiguous with regard to what is meant by the words: "participated in the administration of the November 7, 2006, election." As ES&S understands such words, no ES&S employees participated in the administration of the November 7, 2006, election.

RFP NO. 2:

For the November 7, 2006 election, all Documents discussing, relating to, reflecting, or in any manner memorializing any reported voting system malfunction, including but not limited to Documents identifying any components that reportedly malfunctioned and any remedial action taken.

RESPONSE TO RFP NO. 2:

ES&S objects to this request as vague, and also as overbroad based on Voter Plaintiffs' definition of the term malfunction. RFP No. 2, similar to other requests, presumes the existence of a malfunction as that term is defined in the Discovery Requests. Since becoming a party to this litigation, ES&S has been made aware that certain voters provided affidavits relating to the operation of the voting machines to Plaintiff Jennings. These affidavits have now been provided to ES&S and ES&S understands that these affidavits have also previously been provided to Voter Plaintiffs. Accordingly, ES&S objects to producing the voter affidavits since they are already in the possession of Voter Plaintiffs. Other than the voter affidavits, ES&S is currently unaware of any other documents currently in its possession relating to or memorializing voting system malfunction as that term is defined in the Discovery Requests. ES&S has no documents showing that the voting system did not record or may not have accurately recorded a voter's vote, that the voting system exhibited anomalous or unexpected behavior or that the voting system failed to properly perform any function for which it was certified under state or federal law. Should ES&S subsequently discover any such documents, ES&S will produce for inspection any responsive non-privileged documents in its possession that are not duplicative of documents already produced by another party to Voter Plaintiffs. To date, all the documents that have come into the possession of ES&S demonstrate that a malfunction did not occur. See the Secretary of State's Parallel Test Summary Report issued December 18, 2006.

RFP NO. 3:

For any election in any jurisdiction, all Documents discussing, relating to, reflecting, or in any manner memorializing any reported voting system malfunction, including but not limited to Documents identifying any components that reportedly malfunctioned and any remedial action taken.

RESPONSE TO RFP NO. 3:

ES&S objects to this request as vague, and also as overbroad because it seeks documents not related to the November 7, 2006 general election in Sarasota County or not related to the iVotronic voting system utilized in the November 7, 2006, general election in Sarasota County which is the election at issue in this lawsuit. To the extent this request also refers to malfunctions of voting machines in the November 7, 2006, general election in Sarasota County, ES&S adopts and incorporates by reference its response to RFP No. 2, above.

RFP NO.4:

Any election plan, manual, guide, policy rule, procedure, or practice provided to any Sarasota County election official or poll worker regarding the administration or use of voting equipment, creating and loading ballots, or tabulating and submitting results.

RESPONSE TO RFP NO.4:

ES&S objects to this request as calling for the production of privileged confidential trade secret documents. Documents that may be responsive to RFP No. 4 are currently the subject of pending motions to compel filed by Voter Plaintiffs and Plaintiff Jennings directed to the State Defendants and the Sarasota County Defendants. ES&S objects to producing any documents responsive to this request unless the Court, in ruling on the pending motions to compel, orders the production of such documents.

RFP NO. 5:

For the November 7, 2006, election all data generated by any voting machine that reportedly malfunctioned, including but not limited to ballot images, data stored in redundant or backup memory, and audit data from DRE and OPSCAN voting machines.

RESPONSE TO RFP NO. 5:

ES&S objects to this request as vague, overbroad, and calling for the production of privileged confidential trade secret materials and information. Documents that may be responsive to RFP No. 5 are currently the subject of pending motions to compel filed by Voter Plaintiffs and Plaintiff Jennings directed to the State Defendants and the Sarasota County Defendants. ES&S objects to producing any documents responsive to this request unless the Court, in ruling on the pending motions to compel, orders the production of such documents. In addition, RFP No. 5, similar to other requests, presumes the existence of a malfunction as that term is defined in the Discovery Requests. Other than the voter affidavits described in response to RFP No. 2 above, ES&S is currently unaware of any other documents currently in its possession relating to or memorializing voting system malfunction as that term is defined in the Discovery Requests. ES&S has no documents showing that the voting system did not record or may not have accurately recorded a voter's vote, that the voting system exhibited anomalous or unexpected behavior or that the voting system failed to properly perform any function for which it was certified under state or federal law. To date, all the documents that have come into the possession of ES&S demonstrate that a malfunction did not occur. See the Secretary of State's Parallel Test Summary Report issued December 18, 2006. Furthermore, ES&S is currently unaware of any non-privileged documents currently in its possession related to ballot images, redundant or backup vote data or audit data. ES&S also objects because discovery responses served by Defendant Dent, indicate that ballot images and audit logs have previously been produced to Voter Plaintiffs.

RFP NO. 6:

For the November 7, 2006, election, all communications between and/or among Defendants (including ES&S), election officials, or poll workers regarding the malfunction of any voting system or component thereof.

RESPONSE TO RFP NO. 6:


ES&S objects to this request as vague and also overbroad to the extent that it seeks documents not related to the November 7, 2006, general election in Sarasota County and presumes the existence of a malfunction as that term is defined in the Discovery Requests. See response to RFP No. 2 above regarding the voter affidavits provided to ES&S by Plaintiff Jennings which are documents regarding voters who claim they encountered difficulty using the voting system. ES&S has no documents showing that the voting system did not record or may not have accurately recorded a voter's vote, that the voting system exhibited anomalous or unexpected behavior or that the voting system failed to properly perform any function for which it was certified under state or federal law. In fact, all the documents that have come into the possession of ES&S demonstrate that a malfunction did not occur. See the Secretary of State's Parallel Test Summary Report issued December 18, 2006. ES&S also objects to production of the requested documents because a discovery response served by Defendant Dent states that any responsive documents to this request will be produced.

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing has been sent by electronic transmission and U.S. Mail on this 26th day of December, 2006, to all counsel of record on the attached mailing list.

2951

RADEY THOMAS YON & CLARK, P.A.


HARRY O. THOMAS (Florida Bar #195097)
JEFFREY L. FREHN (Florida Bar #817562)
Post Office Box 10967 (32302)
301 S. Bronough Street, Suite 200
Tallahassee, Florida 32301-1722
Telephone: (850) 425-6654
Facsimile: (850) 425-6694

Miguel A. De Grandy (Florida Bar #332331)
Miguel De Grandy P.A.
800 S. Douglas Road, Suite 850
Coral Gables, Florida 33134-2088

COUNSEL FOR DEFENDANT
ELECTION SYSTEMS & SOFTWARE, INC.

MAILING LIST

Kendall Coffey, Esq.
Coffey & Wright, LLP
2665 South Bayshore Drive
PH-2, Grand Bay Plaza
Miami, FL 33133
and
Mark Herron, Esq.
Messer, Caparelo & Self, P.A.
2618 Centennial Place
Tallahassee, FL 32308

Counsel for Plaintiff Jennings

Stephen E. DeMarsh
County Attorney
Frederick J. Elbrecht
Deputy County Attorney
Office of the County Attorney
1660 Ringling Blvd., 2nd Floor
Sarasota, Florida 34236

Attorneys for Defendant, Sarasota County
Canvassing Board, Sarasota County Judge
Phyllis Galen, Sarasota County Commissioner
Paul Mercier and Kathy Dent, Sarasota
County Supervisor of Elections, as members
of and the Sarasota County Canvassing Board

Peter Antonacci, Esq.
Allen C. Winsor, Esq.
Gray Robinson, P.A.
301 S. Bronough St., Ste. 600
P.O. Box 11189
Tallahassee, FL 32301

Attorneys for Defendants, Elections
Canvassing Commission of the State of
Florida, Sue Cobb, Secretary of State and
Dawn K. Roberts, Director, Division of
Elections and Defendants, Tom Gallagher,
Chief Financial Officer, State of Florida, and
Governor Jeb Bush, and Senator Dan
Webster, as members of and as the Florida
Elections Canvassing Commission

Hayden R. Dempsey, Esq.
Glenna Burhans, Esq.
Greenberg Traurig, P.A.
101 East College Avenue
Tallahassee, FL 32301

Attorneys for Defendant, Vern Buchanan

Ronald A. Labasky, Esq.
Young Van Assenderp, P.A.
225 South Adams Street
Tallahassee, FL 32302

Attorneys for Defendant, Kathy Dent

Lowell Finley, Esq.
1604 Solano Avenue
Berkeley, CA 94707

Elliot M Mineberg, Esq.
Judith E. Schaeffer, Esq.
2000 M. Street N.W., #400
Washington, D.C. 20036

Reginald J. Mitchell, Esq.
1550 Melvin Street
Tallahassee, FL 32301

Muslima Lewis, Esq.
Randall C. Marshall, Esq.
4500 Biscayne Boulevard, Suite 340
Miami, FL 33137-3227

Rebecca Harrison Steele, Esq.
Seina N. Salam, Esq.
ACLU West Central Florida Office
P.O. Box 33679-8245
Tampa, FL 33679-8245

Cindy A. Cohn, Esq.
Matthew J. Zimmerman, Esq.
454 Shotwell Street
San Francisco, CA 94110

Counsel for Plaintiffs in Fedder lawsuit

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Tab 17

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YOUNG VANASSENDERP, P.A.

ATTORNEYS AT LAW

ATTORNEYS:

TASHA O. BUFORD
DAVID S. DEE
RONALD A. LABASKY
JOHN T. LAVIA, III
PHILIP S. PARSONS
TIMOTHY R. QUALLS
KENZA VAN ASSENDERP
ROBERT SCHEFFEL WRIGHT
ROY C. YOUNG

GALLIE'S HALL
225 SOUTH ADAMS STREET
SUITE 200
POST OFFICE BOX 1833
(ZIP 32302-1833)
TALLAHASSEE, FLORIDA 32301

TELEPHONE: (850) 222-7208
TELECOPIER: (850) 561-0834

OF COUNSEL ATTORNEYS:

DANIEL H. COX
DAVID B. ERWIN
JOSEPH W. LANDERS, JR.

GEORGE ANN C. BRACKO
EXECUTIVE DIRECTOR

March 16, 2007

VIA EMAIL AND U.S. MAIL

Sam Hirsch
Jenner & Block
601 Thirteenth Street, N.W.
Suite 1200 South
Washington, D.C. 20006

Re: Supplemental Response to Public Records Request

Dear Sam:

As you are aware, there have been recent reports in the press concerning the existence of correspondence dated August 15, 2006 from Election Systems & Software ("ES&S") relating to ES&S's election equipment. After hearing of the August 15, 2006 correspondence, staff for Sarasota County Supervisor of Elections Kathy Dent searched their files. After several hours, a copy of the August 15, 2006 correspondence was located in a file containing technical bulletins from ES&S.

It is unclear to us whether the August 15, 2006 correspondence falls within any of the enumerated public records requests contained in Kendall Coffey's letter of November 8, 2006. However, in an abundance of caution, Supervisor Dent is hereby providing you with a copy of the August 15, 2006 correspondence as well as copies of two related documents: (1) a voter information poster prepared by ES&S; and (2) a voter information poster prepared by Supervisor Dent.

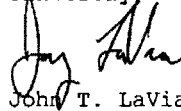
SA-261

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Sam Hirsch
March 16, 2007
Page 2

Please feel free to contact me if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "John T. LaVia, III". The signature is written in a cursive style with a large initial "J".

John T. LaVia, III

Enclosures

SA-262


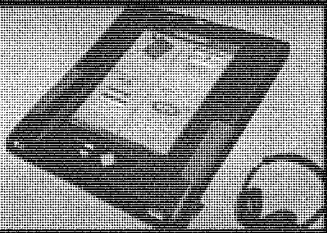
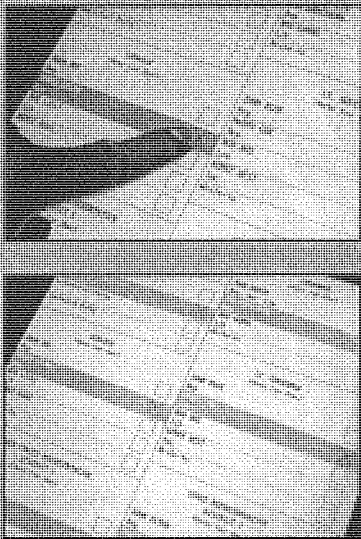
**ATTENTION
VOTERS**

Take Care When Voting!


To ENSURE YOUR BALLOT IS CAST PROPERLY,
please follow the below instructions:

- ✓ Make your selections by pushing firmly on the touch screen.
- ✓ Hold down your selection until it is highlighted. This may take several seconds.
- ✓ Take the time to review your selections. Ensure that all of your intended selections are reflected on the summary screen.

If you have any questions about voting, please ask a poll worker before you have cast your ballot.



The ESSS (VoteBook) receives the leading edge of voting technology. All votes cast on the platform are recorded securely and accurately.





Touch Screen Voting

Easy As One, Two, Three

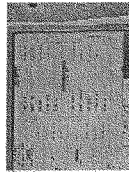
1 Make your selections

Make your selection by touching your choice on the screen until it becomes highlighted. If you change your mind, touch the new choice and the highlight will appear on your new choice or touch the same choice again to undo the highlight, as appropriate.

Touch "Next Page" at the bottom right of the screen to move to the next ballot page.

Touch "Previous Page" at the bottom left of the screen to move back one page.

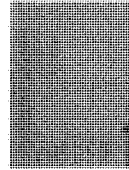
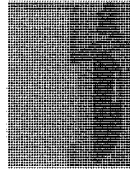
To vote for a candidate whose name is not printed on the ballot, touch "Write-In" and a touch keyboard will appear. Type the candidate's name and touch "Accept."



2 Review your selections

Touch "Review Ballot" on the last ballot page to review your selections.

To change vote, touch the name or issue on the "Review Ballot" page or step back through the Ballot using "Previous Page" in the lower left corner of the screen.



3 Push the flashing red "VOTE" button

Press the flashing red "VOTE" button at the top of the screen to cast your ballot.

"Thank you for Voting" means your vote has been cast.



Kathy Dent
Supervisor of Elections, Sarasota County
101 South Washington Blvd., Sarasota, FL 34230-4194
telephone: 941-861-8600 www.srlections.com

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Tab 18

Orlando Sentinel: Florida elections officials knew of glitch in voting machines

By Mark K. Matthews

The Orlando Sentinel

(MCT)

WASHINGTON - Months before the 2006 general election, a top voting-machine manufacturer sent a written warning to elections officials in Florida about a glitch in its equipment.

That letter has re-ignited debate over the results of a contested Sarasota area congressional race in which Republican Vern Buchanan won by only 369 votes.

But election officials said Wednesday the defect did not have an impact on the results.

In the Aug. 15 memo, a representative from Election Systems and Software wrote that people using its touch-screen voting machines might notice a slight delay between the time they voted and when that choice actually appeared on-screen.

The company recommended a patch to fix the time-lapse problem - estimated to be about two to three seconds - but the update was never put on the machines because there wasn't enough time before the election, said state and company officials.

"We were not alarmed by the delay because we knew it was not jeopardizing the votes being cast or the votes being counted," said Sterling Ivey, spokesman for the state Division of Elections.

That decision sparked an outcry from Democrat Christine Jennings, who has contested her loss to Buchanan on grounds that ES&S machines in her race malfunctioned.

"It's shameful and shocking that our election system was not fixed," said Jennings, who ran last fall to represent Florida's House District 13. As part of her lawsuit, Jennings wants see the inner workings of the ES&S equipment - a request now under the consideration of a state appeals court.

In that race, almost 18,000 electronic ballots in Sarasota County registered no choice, also known as an "under vote." The under vote rate there was about six times greater than in the rest of the district.

After the election, the state examined the machines and found nothing wrong with the equipment. Included in this audit were questions about the time delay, said lead investigator Alec Yasinsac.

He said the lapse was "irritating," but noted his team never found an example where the delay led to a vote not being recorded. He said the system had safeguards to protect the machines from lost votes.

Yasinsac also dismissed concerns that the time lapse could cause some voters to continually press their choice - potentially causing them to "uncheck" their initial, first selection.

He said the machine's software prevented any action during the time lapse, including the potential to uncheck a candidate choice.

Still, at least one computer expert has questioned whether these machines should have been used in the first place.

"Having this kind of delay is a serious of enough problem that you shouldn't have used (these machines) them in the election," said Avi Rubin, a voting-machine expert at Johns Hopkins University

He called the delay a mistake in the system that could cause voters to take a number of actions, including skipping the race or changing their selection when that wasn't the intention.

Bradenton Herald: Lawmaker requests hearing on D-13 votes

LESLEY CLARK and DUANE MARSTELLER Herald Staff Writers

A Congressional committee might enter a growing flap over a potential glitch with Sarasota County's touch-screen voting machines that was identified - but not corrected - before the election.

House Administration committee Chairwoman Rep. Juanita Millender-McDonald, D-Calif., said Thursday she plans to convene a hearing into state and local elections officials' actions after the manufacturer's pre-election warning of possible slow response times.

Millender-McDonald, whose committee will oversee Congress' inquiry into the disputed House District 13 race, said she plans to call state election officials, Sarasota Supervisor of Elections Kathy Dent and Election Systems & Software officials to testify.

"I want to find out, given that they were notified, why they didn't see a need to tell the poll workers," McDonald said. "The voters' voting rights were disenfranchised. That's a big violation of voting rights, the information was there.

"They had an opportunity to let voters know that something was going on and they didn't."

On Aug. 15, ES&S told elections officials in Florida counties that use the company's iVotronic machines that a "smoothing filter" problem sometimes delayed machines' responses to voters' touches. The memo said it would not affect the machines' accuracy, but recommended elections officials "train your poll workers and voters to expect this slightly delayed response time."

Dent has said she did that through an instruction sign posted in voting booths. The sign clearly told voters to make sure the machines recognized their votes before going to another race, she said.

The memo also said the company planned to issue a fix before the Nov. 7 general election, but that didn't happen. There wasn't enough time to get the fix certified by the state, so it wasn't submitted, said Ken Fields, an ES&S spokesman.

Although the memo said a copy also was sent to David Drury, the state official who certifies voting machines, Drury never got it, said Sterling Ivey, spokesman for the Florida Secretary of State's office.

Still, Ivey said, Drury and others knew of the issue in mid-August through other communications with ES&S.

"This came up two weeks before statewide primary elections, and it didn't rise to a level that the state felt that the elections were in jeopardy," Ivey said.

A team of computer scientists the state later hired to examine the machines' source code concluded the problem, if it existed, wouldn't have caused Sarasota's machines to miss 18,000 votes in the 13th District race.

But others said the memo, and how it was discovered, raise troubling questions.

"Why didn't they do anything?" said David Kochman, spokesman for Christine Jennings, who is disputing her 369-vote loss to U.S. Rep. Vern Buchanan and suing for a new election. "Why is it that (Thursday), seven months after this memo was written, they still haven't fixed it?"

Fields, the company spokesman, said the fix will be included in an upgrade that will be submitted for state certification later this year.

Kochman and Jennings' lawyers also question why state elections officials and Dent's office didn't release the memo in response to various public records and discovery requests.

The lawyers recently discovered the memo posted on a North Carolina voter-advocacy group's Web site. That copy had a date-time stamp from the Leon County Supervisor of Elections' office, although that county doesn't use ES&S' machines and wouldn't have been an original recipient of the memo.

"It's just another reason why a full, independent investigation is needed," said Kochman, who added Jennings' lawyers are "exploring their options" regarding the memo.

Dent referred questions to her attorney, who did not return telephone calls. Ivey said state officials could find no copy of the memo in their records.

"We can't give the attorneys something we don't have," he said.

McDonald's committee is expected to review Jennings' election contest once the case has been resolved in the Florida courts. That could take months and McDonald said she's not had any conversations with Jennings about the contest - one of several filed in the wake of the November elections.

"I do not want to taint in any way, our review of the case," McDonald said.

However, she has fired off letters to the Tallahassee court that is hearing Jennings' appeal of a lower court ruling barring access to the computer code, and to Dent, reminding them of the House's interest in the contest and asking Dent to preserve evidence in the case.

McDonald said she views the call for a hearing as appropriate because it involves issues that pre-dated the election. Her committee also began hearings Thursday on legislation that would require voting machines to have a paper trail.

IN THE

United States House of Representatives

CHRISTINE JENNINGS,

Contestant,

v.

VERN BUCHANAN,

Contestee.

**SUPPLEMENTAL APPENDIX TO CONTESTANT JENNINGS'S MEMORANDUM
RESPONDING TO THE HONORABLE CHARLES A. GONZALEZ'S APRIL 3, 2007
LETTER REGARDING THE INVESTIGATION OF THE ELECTION FOR
REPRESENTATIVE IN THE ONE HUNDRED TENTH CONGRESS FROM
FLORIDA'S THIRTEENTH CONGRESSIONAL DISTRICT**

VOLUME II OF II

KENDALL COFFEY
COFFEY BURLINGTON
2699 So. Bayshore Drive, PH1
Miami, FL 33133
(305) 858-2900

MARK HERRON
MESSER, CAPARELLO & SELF, P.A.
2618 Centennial Place
Tallahassee, Florida 32308
(850) 222-0720

DONALD B. VERRILLI, JR.
SAM HIRSCH
JESSICA RING AMUNSON
JENNER & BLOCK LLP
601 Thirteenth Street, N.W.
Washington, DC 20005
(202) 639-6000

April 13, 2007

CONTESTANT JENNINGS'S SUPPLEMENTAL APPENDIX

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16	ES&S's Response to Voter Plaintiffs' First Set of Requests for Production or Inspection (12/26/06)	SA-252
17	Letter from John LaVia to Sam Hirsch re ES&S August 15, 2006 Letter and County's Failure to Comply with Jennings's Public Records Request (3/16/07)	SA-261
18	Mark K. Matthews, "Florida Officials Knew of Glitch in Voting Machines," <i>Orlando Sentinel</i> (3/15/07); Lesley Clark & Duane Marsteller, "Lawmaker Requests Hearing on D-13 Votes," <i>Bradenton Herald</i> (3/16/07)	SA-265
19	Voter Plaintiffs' Motion for Reconsideration of Order Denying Motion to Compel Production (3/20/07)	SA-269
20	Letter from Kendall Coffey to Peter Antonacci re Deficiencies in State Parallel Testing (11/29/06)	SA-352
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22	Software Review and Security Analysis of the ES&S iVotronic 8.0.1.2 Voting Machine Firmware (2/23/07)	SA-369
23	Ed Felten, "Sarasota: Limited Investigations," <i>available at</i> http://www.freedom-to-tinker.com/?p=1116 (2/5/07)	SA-436
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28	Order on Stipulated Agreement of Parties in the Trial Court re Preservation of Evidence (2/21/07)	SA-505
29	Letter from Chairwoman Juanita Millender-McDonald to Ms. Jennings and Mr. Buchanan re Committee's Consideration of Notice of Contest and Motion to Dismiss (2/6/07)	SA-539

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Tab 19

COPY

IN THE CIRCUIT COURT OF THE SECOND JUDICIAL CIRCUIT
IN AND FOR LEON COUNTY, FLORIDA
CIVIL DIVISION

CHRISTINE JENNINGS, a nominee of the
Democratic Party for Representative in Congress
from the State of Florida's Thirteenth Congressional
District.

CASE NO. 2006 CA 2973

Plaintiff.

v.

ELECTION CANVASSING COMMISSION
OF THE STATE OF FLORIDA, et. al.,

Defendants.

ELLEN FEDDER, et. al.,

CASE NO.2006 CA 2996
(Consolidated)

Plaintiffs,

v.

TOM GALLAGHER, et. al.,

Defendants.

**VOTER PLAINTIFFS' MOTION FOR RECONSIDERATION OF
ORDER DENYING MOTION TO COMPEL PRODUCTION**

Based on newly-discovered evidence and what now appear to be misleading statements made to this Court by Defendant ES&S concerning the reliability of the voting machines used in the November 2006 election, the Plaintiffs Ellen Fedder, Lance Jones, Ernest Lasche a/k/a Mike Lasche, Barbara Klein, Lois Harnes, John Minder, Dovie Murray, John McBride, Susan Gaar, Gary Lamer, and Charles Clifton (collectively, "Voter Plaintiffs") hereby move this Court to

reconsider its order of December 29, 2006, denying the Voter Plaintiffs' motion to compel discovery.

At the evidentiary hearing on December 19 and 20, 2006, and in its post-hearing brief, Defendant ES&S represented to the Court that the iVotronic "systems performed as they were designed and accurately recorded the votes which were input into them." ES&S Post-Hearing Brief ("ES&S Brief") at 35.

Contrary to the rosy picture painted by ES&S at the hearing and in its brief, a newly-discovered, and wrongly-withheld, communication from ES&S has surfaced to tell a different story. In August, 2006 – months before the November election – ES&S wrote to Florida election officials, including Sarasota Supervisor of Elections Dent, to warn about a flaw in the firmware of the machines, and to recommend that the machines be fixed. While at least one other county in Florida received this same alert and did not use the defective iVotronics,¹ Dent ignored the warning. Furthermore, Defendants now confirm that they knew about this firmware bug and failed to bring it to this Court's attention, all while Defendant ES&S was assuring the Court that the "election systems utilized in Sarasota County performed their function with 100% accuracy." See Jeremy Wallace, *Voting Machine Maker Warned of "Issue"*, Sarasota Herald-Tribune, March 14, 2007, Exh. "B" attached and ES&S Brief at 1-2. The numerous reports of voting problems and touchscreen failures documented in Defendant Dent's own technical logs confirm that all did not work well on election day.

¹ It was the current Secretary of State, then Pasco County Supervisor of Elections Kurt Browning, who adjusted his procedures in light of the ES&S letter. See Anita Kumar, *Sarasota officials ignored warning about voting machines*, St. Petersburg Times, March 15, 2007, Exh. "A" attached.

This new evidence casts serious doubt on Defendants' claims of perfect function presented to the Court in opposition to the plaintiffs' requested discovery. Therefore, the Voter Plaintiffs respectfully request that this Court revisit its ruling in light of the evidence that was wrongfully withheld from the Plaintiffs and the lack of which allowed Defendant ES&S to give this Court the mistaken impression that the iVotronic systems worked exactly as they should.²

In support of their Motion, the Voter Plaintiffs state the following:

1 On December 11, 2006, the Voter Plaintiffs served Defendant ES&S with Requests for Production seeking, among other things, production of the following:

- A. "For any election in any jurisdiction, all Documents discussing, relating to, reflecting, or in any manner memorializing any reported voting system malfunction, including but not limited to Documents identifying any components that reportedly malfunctioned and any remedial action taken."
(Voter Plaintiffs' Request for Production #2, Exh. "C" attached.)
- B. "Any . . . guide, policy rule, procedure or practice provided to any Sarasota County election official or poll worker regarding the administration or use of voting equipment . . ." (Voter Plaintiffs' Request for Production #4, Exh. "C" attached.)
- C. "For the November 7, 2006, election, all communications between and/or among Defendants (including ES&S) election officials, or poll workers regarding the malfunction of any voting system or component thereof."

² In referring to "Defendants" in this Motion, the Voter Plaintiffs do not include Defendant Buchanan, who is a defendant solely because the statute requires it and not because of any known misconduct with respect to the election. The Voter Plaintiffs are themselves voters of differing political parties.

(Voter Plaintiffs' Request for Production #6, Exh. "C" attached.)

2. Defendant ES&S objected to production of all documents requested by the Voter Plaintiffs, averring repeatedly that "ES&S has no documents showing that the voting system did not record or may not have accurately recorded a voter's vote, that the voting system exhibited anomalous or unexpected behavior or that the voting system failed to properly perform any function for which it was certified under state or federal law." (ES&S Response to Voter Plaintiffs' Request for Production at Responses 2, 3, 5, & 6; Exh. "D" attached.)

3. During the evidentiary hearing, and in its post-hearing brief, ES&S represented to this Court repeatedly that there were no machine malfunctions and that the voting systems worked properly. During the hearing, ES&S's counsel stated that "there is no computer malfunction . . ." (Transcript of Hearing at 26). He represented that the tests run by the Defendants and/or their experts showed that the voting systems were 100% accurate. In its post-hearing brief, ES&S stated:

- "ES&S utilized the hearing time given by this Court to introduce evidence which demonstrated that its election systems utilized in Sarasota County performed their function with 100% accuracy." (ES&S Brief at 1-2) (emphasis in original);
- "the iVotronic machines functioned correctly during the election . . ." (*Id.* at 2);
- "[T]hese systems performed as they were designed and accurately recorded the votes which were input into them." (*Id.* at 35).

4. These representations made in the context of the motion to compel failed to present the whole story. It has just come to the plaintiffs' attention that Defendants failed to disclose a significant communication from ES&S, sent August 15, 2006 to Defendant Dent and other Florida iVotronic users. The ES&S letter warned that the latest version of the firmware

caused the voting-machine touchscreens to delay registering a vote “beyond the normal time a voter would expect to have their selection highlighted,” and stated that an update was “required.” See Aug. 15, 2006 Letter from ES&S to Florida iVotronic users, Composite Exh. “E” attached.

5. So, at least by August 15, 2006, Defendant Dent was informed that the “smoothing filter” used in the iVotronic machines created a time delay for voters. The problem was unpredictable. It varied from terminal to terminal. Not only that, a particular terminal could have the problem sometimes and at other times would work fine. *Id.*

6. Although ES&S included some self-serving verbiage in the letter stating that the voting systems would work accurately despite the flaw, in reality ES&S considered the problem serious enough that it said that updating the systems’ firmware was “require[d]” and “necessary.” *Id.* ES&S also recommended that elections officials train pollworkers to alert voters to the problem, and to post signs notifying voters that they might have to press the screen for **several seconds** before their votes were recorded. See *Sample Sign attached to Aug. 15, 2006 ES&S Letter*, Composite Exh. “E” attached.

7. Defendant Dent and her attorney now claim that Dent filed the letter away on August 22, 2006, forgot about it, and did nothing to fix the problem. See Jeremy Wallace, *Memo on Voting Machines Misfiled*, Sarasota Herald-Tribune, March 17, 2007, Exh. “F” attached. Dent did not install the updated firmware, nor did she put up any signs alerting voters to the lag time problem, as recommended by ES&S. Instead, she posted signs in the polling places stating (misleadingly): “Touch Screen Voting Easy As One, Two, Three.” Her signs completely failed to tell voters that they might have to press the screen for several seconds before the machine captured their selections. See *Dent Display*, Exh. “G” attached.

8. In addition, it appears that Defendant ES&S also did not follow through on what

it deemed “necessary” for Sarasota County voters, and failed to seek certification of the important update that ES&S had recommended be installed in order for the iVotronics to function as they were designed. ES&S apparently failed to seek certification not once (before the September 2006 primary), not twice (before the November 2006 general election), but three times (another election was held on March 13, 2007 – the same day this revelation was made public).

9. Additionally, the State of Florida failed the voters, and made misleading statements in its recent audit of the ES&S firmware. While the auditors stated that the issue with the smoothing filter was merely an “allegation that has been floated on Internet newsgroups” – making no mention that ES&S had identified the flaw itself last August – we now know that the lead auditor knew when conducting the audit that the smoothing filter issue was a real one, and a serious one, originally identified not by Internet newsgroups but rather by ES&S itself. See State Audit Report, Sec. 8.4.9, Exh. “H” attached, and Anita Kumar, *Sarasota Officials Ignored Warning about Voting Machines*, St. Petersburg Times, March 15, 2007, Exh. “A” (“[Chief Auditor Alex] Yasinsac said the team looked into the slow response time after seeing a copy of the company’s memo and reviewing logs of poll workers who complained about a delay in votes being recorded.”).

10. Though the August 15 ES&S letter was clearly responsive to the Voter Plaintiffs’ discovery and public records requests, and not proprietary at all, Defendants ES&S and Dent never produced it to the Plaintiffs until yesterday. Indeed, until the last few days, neither ES&S nor Dent produced this document to any of the parties or the Court, nor did they call this flaw to the attention of Sarasota County voters. The Voter Plaintiffs only became aware of this letter, and the defect identified in it, when the existence of the letter became widely known last week.

11. Although Dent and ES&S may attempt to downplay the deleterious effect of this flaw, at least one expert has noted that the problem was important. Avi Rubin, a voting-machine expert from John Hopkins University, stated: "Having this kind of delay is a serious enough problem that you shouldn't have used them in the election." See Mark K. Matthews, *Elections Officials Warned of Glitch*, South Florida Sun-Sentinel, Mar. 15, 2007, Exh. "I" attached.

And indeed, the turn of events supports Professor Rubin's conclusion. As one might expect after seeing the August 15, 2006 letter, Sarasota county voters had tremendous problems with touchscreens exhibiting the very flaw that ES&S warned about. See Zone Tech Log Sheets from Nov. 2006 Election, Composite Exh. "J" attached. Election workers noted numerous problems with touchscreens failing to capture votes. Here are merely a few examples:

- "Problem with votes being unchecked on review screen" (Precinct 18);
- "Two voters complained that their selection did not register" (Precinct 18);
- "Touchscreen not working properly, hard to record vote, needed to **push hard and jiggle** to record vote" (Precinct 32) (emphasis added);
- "Touch screen has a **weak spot that is a nuisance to voters**. Misses selections on some pages. **Wait is too long – more than 5 sec.**" (Precinct 46) (emphasis added);
- "One iVo they say seems a little slow to touch. They are very busy and still using it." (Precinct 71);
- "Terminal S/N 105705B will not register votes, no matter how hard you press screen." (Precinct 78);
- "iVo #0118359 is still recalcitrant [sic]." (Precinct 87: report indicates they decided not to use it "unless absolutely necessary");
- Especially troublesome are the reports of problems with machines for disabled voters, for

example: “Screen requires firm/extended touch to record vote . . . Difficult for challenged individuals.” (Precinct 99: it took 3 hours for a replacement ADA-compliant machine to be delivered.) (similar problems were noted in Precinct 3).

12. This Court retains the inherent power to reconsider nonfinal orders, including the discovery order in question. *See, e.g., North Shore Hosp. v. Barber*, 143 So. 2d 849, 851 (Fla. 1962); *Francisco v. Victoria Marine Shipping, Inc.*, 486 So. 2d 1386, 1389 n. 2 (Fla. 3d DCA 1986). Although a motion for reconsideration is not strictly a Rule 1.540 motion, which applies only to relief from an order that is final. *see Wagner v. Bielev. Wagner & Assocs.*, 263 So. 2d 1 (Fla. 1972); *Bennett’s Leasing, Inc. v. First St. Mortgage Ass’n*, 870 So. 2d 93 (Fla. 1st DCA 2003); the policy is similar – allowing the Court to re-visit a ruling when new evidence is discovered or when one side has misrepresented the facts or law to the court. *Cf. Fla. R. Civ. P.* 1.540(b).

13. Both grounds apply here. ES&S knew, at least by August 2006, that the iVotronic machines used in Sarasota County were flawed. Because of a “smoothing filter” used in the system’s firmware, the machines had an unpredictable tendency to fail to record votes within the normal time. ES&S’s own letter admits that the lag time could be several seconds, longer than a voter would normally expect. *See Aug. 15 ES&S Letter*, Composite Exh. “E” attached. ES&S failed to produce this letter to the Voter Plaintiffs, misleadingly stating that no documents showed that the voting systems failed to work exactly as they should have during the November 2006 election. Now that this letter has surfaced, however, this Court has evidence that the iVotronic systems had a problem that frustrated the voters’ rights to cast a vote in a way that counted. That this flaw affected the November 2006 election is amply shown by precinct logs noting numerous problems with touchscreens being slow to capture votes, or even to fail to

record them at all. *See* Composite Exh. "J" attached.

14. Further, ES&S told this Court that the voting systems worked properly and that there was "no evidence" that there were any problems with the iVotronic systems. This misrepresentation was at best an incomplete statement of the facts and cannot be reconciled with its August 2006 statement that the firmware needed to be fixed and that, meanwhile, election officials should prominently call voters' attention to the potential problem.

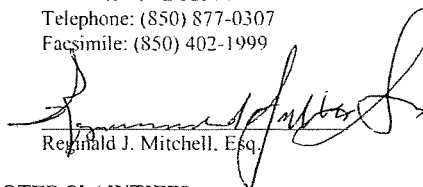
15. Defendants now must acknowledge that the machines did not work with "100% accuracy," by their own admissions. The Voter Plaintiffs are entitled to the discovery they have sought all along – a dynamic analysis of the firmware on Sarasota County's iVotronic machines to determine exactly what went wrong in the November elections. Such an analysis has yet to be conducted, largely because of ES&S's misrepresentations and the Defendants' obfuscations.

For all the above reasons, the Voter Plaintiffs respectfully request that this Court reconsider its December 29, 2006 order denying them discovery, and enter an order allowing the Plaintiffs and their experts access to the evidence necessary to determine what went wrong in the November 2006 election. The Voter Plaintiffs reaffirm their willingness to enter into an appropriate protective order as needed to protect the proprietary interests of ES&S. Because the newly-discovered evidence shows a problem with the iVotronic system, a problem that the Defendants knew about and failed to disclose to either the Plaintiffs or this Court, reconsideration is appropriate.

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Respectfully submitted.

Reginald J. Mitchell, Esq.
Florida Bar No. 0621293
PEOPLE FOR THE AMERICAN WAY
FOUNDATION
1550 Melvin Street
Tallahassee, FL 32301
Telephone: (850) 877-0307
Facsimile: (850) 402-1999



Reginald J. Mitchell, Esq.

COUNSEL FOR VOTER PLAINTIFFS

John Bonifaz
(Pro hac vice application to be filed)
VOTER ACTION
c/o Demos
27 School Street, Suite 500
Boston, MA 02108
(617) 624-3900, ext. 22
(617) 624-3911 (fax)

Matthew J. Zimmerman
(Pro hac vice)
ELECTRONIC FRONTIER FOUNDATION
454 Shotwell Street
San Francisco, California 94110
Telephone: (415) 436-9333 x127
Facsimile: (415) 436-9993

Judith E. Schaeffer
David J. Becker
(Pro hac vice applications filed)
PEOPLE FOR THE AMERICAN WAY
FOUNDATION
2000 M Street N.W. #400
Washington, D.C. 20036
Telephone: (202) 467-4999
Facsimile: (202) 293-2672

Rebecca Harrison Steele
Florida Bar No.: 067326
Zeina N. Salam
Florida Bar No.: 653632
ACLU FOUNDATION OF FLORIDA, INC.
West Central Florida Office
P.O. Box 18245
Tampa, FL 33679-8245
Telephone: (813) 254-0925
Facsimile: (813) 254-0926

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Reginald J. Mitchell
Florida Bar No.0621293
PEOPLE FOR THE AMERICAN WAY
FOUNDATION
1550 Melvin Street
Tallahassee, FL 32301
Telephone: (850) 877-0307
Facsimile: (850) 402-1999

Muslima Lewis
Florida Bar No.: 0158305
Randall C. Marshall
Florida Bar No.: 181765
Aziza Naa-Kaa Botchway
Florida Bar No.: 017803
ACLU FOUNDATION OF FLORIDA, INC.
4500 Biscayne Boulevard, Suite 340
Miami, FL 33137-3227
Telephone: (786) 273-2729
Facsimile: (786) 363-1448

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the above has been furnished by e-mail
and U.S. Mail on this 20th day of March 2007 to the following:

Kendall Coffey, Esq.
Florida Bar No.: 259861
Coffey & Wright, LLP
2665 South Bayshore Dr.
PH-2, Grand Bay Plaza
Miami, FL 33133
Telephone: (305) 857-9797
Facsimile: (305) 859-9919

*Attorney for Plaintiff Candidate Christine
Jennings*

Sam Hirsch, Esq.
Jessie Amunson, Esq.
Donald E. Verrilli, Esq.
(Admitted Pro Hac Vice)
Jenner & Block, LLC
601 Thirteenth Street, NW
Suite 1200 South
Washington, DC 20005
Telephone: (202) 639-6000
Facsimile: (202) 661-4900
*Attorneys for Plaintiff Candidate Christine
Jennings*

Ron Labasky, Esq.
Florida Bar No.: 206326
Young Van Assenderp, P.A.
225 South Adams Street
Suite 200
Tallahassee, FL 32301-1700
Telephone: (850) 222-7206
Facsimile: (850) 561-6834

*Attorney for Defendants Supervisor of Elections
Kathy Dent and Judge Phyllis Galen*

Glenn Thomas Burhans Jr., Esq.
Florida Bar No.: 605867
Hayden R. Dempsey, Esq.
Florida Bar No.: 0014435
Greenberg Traurig, P.A.
101 East College Avenue
Tallahassee, FL 32301
Telephone: (850) 222-6891
Facsimile: (850) 681-0207
*Attorneys for Defendant Candidate Vern
Buchanan*

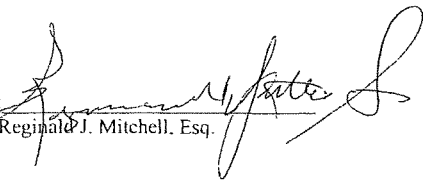
Mark Herron, Esq.
Florida Bar No.: 199737
Messer, Caparello & Self, P.A.
2618 Centennial Place
Tallahassee, Florida 32308
Telephone: (850) 222-0720
Facsimile: (850) 558-0659
Attorney for Plaintiff Candidate Christine Jennings

Richard T. Donelan, Jr., Esq.
Florida Bar No.: 198714
Chief Counsel
Department of Financial Services
200 East Gaines Street
Tallahassee, FL 32399-4727
Telephone: (850) 413-3010
Facsimile: (850) 413-3029
Attorney for Defendant Tom Gallagher, Chief Financial Officer





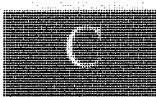



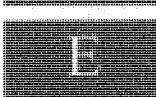





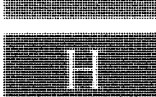



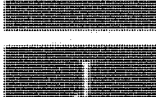

Harry O. Thomas, Esq.
Florida Bar No.: 195097
Radey Thomas Yon & Clark, P.A.
Post Office Box 10967
Tallahassee, Florida 32302
301 S. Bronough Street, Suite 200
Tallahassee, FL 32301-1722
Telephone: (850) 425-6654
Facsimile: (850) 425-6694
Attorney for Defendant Election Systems & Software, Inc.

Pete Antonacci, Esq.
Florida Bar No.: 280690
Allen C. Winsor, Esq.
Florida Bar No.: 16295
Gray Robinson, P.A.
300 South Bronough Street
Suite 600
Tallahassee, FL 32301
Telephone: (850) 577-9090
Facsimile: (850) 577-3311
Attorneys for Defendants, Governor Jeb Bush, Secretary of State Sue M. Cobb and State Senator Daniel Webster
Stephen Demarsh, Esq.
Florida Bar No.: 335649
Frederick J. Elbrecht, Esq.
Florida Bar No.: 314609
Office of the County Attorney
1660 Ringling Boulevard, Second Floor
Sarasota, FL 34236-6870
Telephone: (941) 861-7272
Facsimile: (941) 861-7267
Attorneys for Defendant County Commissioner Paul Mercier

Miguel A. DeGrandy, Esq.
Florida Bar No.: 332331
Miguel DeGrandy P.A.
800 S. Douglass Road, Suite 850
Coral Gables, FL 33134-2088
Telephone: (305) 444-7737
Facsimile: (305) 374-8743
Attorney for Defendant Election Systems & Software, Inc.

By: 
Reginald J. Mitchell, Esq.

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Voter Plaintiff's Motion For Reconsideration of Order Denying Motion to Compel Production**

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Exhibit A

Anita Kumar, ***Sarasota officials ignored warning about voting machines***, St. Petersburg Times, March 15, 2007

SA-282

lampabay  Know it now

Sarasota officials ignored warning about voting machines

An alert on glitches came ahead of recent election troubles but no one followed up.

By ANITA KUMAR
Published March 15, 2007

The maker of the voting machines used in last fall's disputed Sarasota area congressional race warned state and county officials that voters might have trouble recording their votes but the company's advice for fixing the problem went unheeded.

And as the controversy swirled into another national debate about another troubled Florida election, state and county officials never told anyone about the company warning that some of its touch-screen machines could produce a seconds-long delay before recording votes.

An Aug. 15 letter from Election Systems & Software told state and county officials about "slow response times" in recording votes on some of its machines. The company said an "update to the firmware" was required and also suggested counties post signs and train poll workers and voters about the need to press firmly for several seconds to ensure that the machine properly recorded the vote.

That never happened in Sarasota County.

And although state, county and company officials insist the accuracy of the vote counting was not in jeopardy, Pasco County got the same letter and chose not to use the 40 affected machines on Election Day in November.

"It wasn't any big deal," Sarasota Supervisor of Elections Kathy Dent said Wednesday.

Letter comes to light

The Election Systems & Software letter made its way into public light this week on a North Carolina-based Web site devoted to election issues. Officials with the Florida Division of Elections and the Sarasota County Elections Supervisor could not explain why the memo had not been previously released, particularly since the losing candidate in the race had filed a lawsuit and a public records request to collect all relevant documents.

"Clearly we should have gotten this letter," said Sam Hirsh, attorney for Christine Jennings, the Democrat who lost. "I think they knew it was a smoking gun. This goes to the very core of the case."

Source: http://www.sptimes.com/2007/03/15/news_pf/State/Sarasota_officials_ig.shtml 1

Dent said her attorney advised her not to talk about the lack of disclosure of the letter and the state's attorneys were still reviewing the issue and would not comment.

Rep. Chris Van Hollen, chairman of the group that helps Democrats get elected to Congress, said Wednesday that he was disturbed "that election officials withheld the information about the voting machine problem" before and after the election.

Republican Vern Buchanan was sworn into the U.S. House in January, but Jennings refuses to concede, disputing her loss in the Florida courts and in Congress.

Voters complaints

At issue: More than 18,000 people, or 13 percent of all voters, did not record a vote in the race, a rate higher than in other counties in the congressional district. On election day and afterward many voters complained that they had tried to vote in the race, but said the machine wouldn't take their ballot.

The state examined the machines and paid independent researchers to investigate before concluding that the computers were not faulty.

The letter from Election Systems & Software was sent to the state official responsible for certifying machines used in Florida and to the 11 Florida counties that use the company's touchscreen machines, including Pasco.

The company said it planned to solve the problem before the November election. But in a statement released Wednesday, company spokesman Ken Fields said there was not enough time to make the fix and get the machines recertified by the state before Election Day.

County and state officials said Wednesday they did not question the company when it failed to bring forward an upgrade before the election because, despite the response delay, the machines were working properly.

"We weren't experiencing a problem," Dent said.

"There was no need to go to the vendor to change the systems that close to the election," said Sterling Ivey, spokesman for the state Division of Elections. "The elections were not in jeopardy."

State and county officials said the company was responsible for bringing any necessary machine upgrades to the state to be tested and certified.

Post-election lawsuits

Auditors who conducted a state-funded investigation after the election determined the machines' slow response time did not contribute to the undervote, said Alec Yasinsac, an FSU computer science professor and project leader.

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Yasinsac said the team looked into the slow response time after seeing a copy of the company's letter and reviewing logs of poll workers who complained about a delay in votes being recorded.

The company has repeatedly stressed that the delay, which will be fixed later this year, "did not affect any race or the accumulation of votes," Fields said.

But similar undervoting problems occurred in the attorney general's race on machines used in Lee, Charlotte and Sumter counties, though not enough to make a difference in the outcome of the election.

Jennings filed a lawsuit in November, asking for a new vote, as well as access to the disputed machines' hardware and software. A Leon County judge ruled against Jennings with regard to access to the machines, but she has appealed. A decision is expected any day.

Jennings also has taken the extreme measure of asking the U.S. House to intervene.

The case has been tied up in courts for months, and any action by the House - if there is any - will likely wait until the lawsuit is settled.

Calls to Buchanan's attorney were not returned Wednesday.

Times staff writer Rebecca Catalanello and staff researcher Caryn Baird contributed to this report. Anita Kumar can be reached at akumar@sptimes.com or 202 463-0576.

A warning to election officials

Election Systems & Software, which designed the touch screen machines used in Sarasota, sent a letter to elections officials on Aug. 15 warning that voters might have difficulty registering their choices on some machines. An excerpt of the letter is shown below, as well as a sign provided by the company that could have been used to instruct voters. The sign was not used in Sarasota.

Source: http://www.sptimes.com/2007/03/15/news_pf/State/Sarasota_officials_ig.shtml

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Exhibit B

Jeremy Wallace, *Voting Machine
Maker Warned of "Issue"*, Sarasota
Herald-Tribune, March 14, 2007

SA-286

Article published Mar 14, 2007

Voting machine maker warned of 'issue'
By JEREMY WALLACE

H-T POLITICAL WRITER

jeremy.wallace@heraldtribune.com

A voting machine manufacturer warned state elections officials and Sarasota County's Supervisor of Election of an "issue" with its equipment months before the disputed Nov. 7 election but no changes were made, a new memo shows.

Even though Election Systems & Software recommended in the Aug. 15 memo that all of its Florida customers -- including Sarasota County -- train poll workers and voters to expect slow responses on the touch-screen voting machines when their selections were made, Sarasota Supervisor of Elections Kathy Dent said the state determined it was too close to the election to make any changes.

Dent also said the instructions on how to use the iVotronic machines at polling sites seemed to cover what ES&S recommended.

In addition, ES&S' promised fixes for the problem never were made available before the Nov. 7 election, state officials said.

Democrat Christine Jennings' attorney, Sam Hirsch, said the new memo is significant to Jennings' case for a new election for two key reasons. First, it shows that ES&S acknowledged problems with the equipment despite assurances that there were no problems, Hirsch said.

Secondly, Hirsch said it shows the state, ES&S and Dent have withheld information his team requested months ago. Jennings' legal team requested copies of all correspondence between Dent and ES&S, but the memo only became public after surfacing on an Internet site weeks ago, Hirsch said.

"How could we not have gotten this?" Hirsch asked.

What's troublesome, Hirsch said, is that ES&S said it would need to install a software patch to fix the problem, yet there never was any patch submitted to the state before the now controversial Nov. 7 election.

Republican Vern Buchanan was certified the winner of the Nov. 7 election by 369 votes. But Jennings is challenging the results, saying an abnormally high undervote cost her the election.

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About 18,000 Sarasota County voters who went to the polls did not cast a vote in the Congressional race. The 13 percent undervote was substantially higher than in surrounding counties or in other top-of-the-ticket races.

The case is before a state appeals court, which is supposed to rule soon on whether Jennings should have access to ES&S' software codes.

Jennings is also petitioning the U.S. House to overturn the election results. The House is expected to investigate after the Florida courts rule.

A state elections spokesman said a recent state audit of the Sarasota County results determined there was no correlation between the delay ES&S warned about and the undervote. Florida Division of Elections spokesman Sterling Ivey confirmed that no patch was ever submitted to the state for certification.

Hirsh said there is no correspondence showing what happened to the problem or if it was fixed after the primary election on Sept. 5 primary.

In the Aug. 15 letter, ES&S regional account manager Linda Bennett says "after a number of inquiries" ES&S verified that voting machines were showing slow response times. They pinpointed the problem to a "smoothing filter" that delayed selections after a voter touched the screen.

"In some cases, the time lapse on these consistent reads is beyond the normal time a voter would expect to have their selection highlighted," Bennett writes in the letter. "The delayed response to touch may vary from terminal to terminal and also may not occur every single time a terminal is used."

Jeremy Wallace can be reached at 361-4966 or jeremy.wallace@heraldtribune.com.

<http://www.heraldtribune.com/apps/pbcs.dll/article?AID=/20070314/NEWS/703140480>

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Exhibit C

Voter Plaintiffs' Request for
Production

SA-289

IN THE CIRCUIT COURT OF THE SECOND JUDICIAL CIRCUIT
IN AND FOR LEON COUNTY, FLORIDA
CIVIL DIVISION

ELLEN FEDDER, LANCE JONES,
ERNEST LASCHE, a/k/a MIKE LASCHE,
BARBARA KLEIN, LOIS HARMES,
JOHN MINDER, DOVIE MURRAY,
JOHN MCBRIDE, SUSAN GAAR,
GARY LAMER, CHARLES CLIFTON,

Plaintiffs,

v.

No. 06 CA 2996

TOM GALLAGHER, CHIEF
FINANCIAL OFFICER, STATE OF
FLORIDA, and GOVERNOR JEB
BUSH, and STATE SENATOR DAN
WEBSTER, as members of and as the
FLORIDA ELECTIONS CANVASSING
COMMISSION, and SUE M. COBB,
as SECRETARY OF STATE,
STATE OF FLORIDA,

and

THE SARASOTA COUNTY
CANVASSING BOARD,
SARASOTA COUNTY JUDGE
PHYLLIS GALEN, SARASOTA
COUNTY COMMISSIONER
PAUL MERCIER, and KATHY
DENT, SARASOTA COUNTY
SUPERVISOR OF ELECTIONS,
as members of and as THE
SARASOTA COUNTY
CANVASSING BOARD, and KATHY
DENT, as Supervisor of Elections,

and

VERN BUCHANAN, Nominee of
the Republican Party of Florida for
the 13th Congressional District of Florida,

Defendants.

**VOTER PLAINTIFFS' FIRST SET OF REQUESTS FOR
PRODUCTION AND INSPECTION TO ES&S**

Pursuant to Rule 1.350 of the Florida Rules of Civil Procedure, Plaintiffs request that Election Systems and Software ("ES&S") produce all Documents responsive to the following Requests for Production at the offices of undersigned counsel as soon as practicable and, in any event, within 10 days of the service of these Requests. Plaintiffs also request that ES&S make available for inspection as soon as practicable all things sought in its Requests for Inspection.

INSTRUCTIONS

1. These requests require the production and/or inspection of all responsive materials within the sole or joint possession, custody, or control of ES&S, including, without limitation, any such Documents that lie within the possession, custody, or control of any agents, agencies, departments, attorneys, employees, consultants, representatives, or other persons or entities acting for, or otherwise subject to the control of, ES&S.

2. These requests are continuing in nature and require prompt supplemental responses for any and all responsive Documents that come into ES&S's sole or joint possession, custody, or control after the service of any initial responses.

3. Each of these requests requires a separate answer. For each Document, indicate the Request to which it responds.

4. All responsive Documents are required to be produced either (a) as they are kept in the usual course of business (together with copies of any file labels or binder covers for the files or binders in which they are maintained) or (b) organized and labeled to correspond with the categories of the Requests to which they respond (see Rule 1.350(b)).

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5. For any responsive Document or portion thereof that is either redacted or withheld, in whole or in part, on the basis of any assertion of privilege or other asserted exemption from discovery, identify (a) the title or identity of the Document; (b) the date of the Document; (c) the type or nature of the Document; (d) the identity, title or responsibilities, and relationship to ES&S of all persons who either prepared or received the Document; (e) the type and nature of the privilege or exemption asserted; and (f) the contents or subject matter of the Document, with sufficient detail to explain the basis for the privilege or exemption asserted (see Rule 1.280(b)(5)). For any such responsive Document or portion thereof that may not properly be redacted or withheld in its entirety, produce each and every portion thereof to which the claimed privilege or exemption does not apply and specify, on the face of each such page or portion, the fact and reason for the redaction or withholding.

6. Wherever possible or necessary to render a given Request more inclusive than it otherwise might be, the singular should be construed to include the plural, and vice versa; the disjunctive should be construed to include the conjunctive, and vice versa; and any verb tense should be construed to include other tenses.

DEFINITIONS

1. "Defendants" means any and all named Defendants in this action, both individually and jointly, their offices, subordinates, employees, agents and representatives.

2. "Election official" means any employee, agent, or representative of Florida state or local government authorized to take part in (or otherwise participates in) the administration of any election held within Florida.

3. "Document" is used in the broadest sense permissible under the Florida Rules of Civil Procedure to encompass and mean the product of any method of recording information.

whether by writing or otherwise, including without limitation: any written, electronic, or computerized files, data, or software; memoranda; correspondence; communications; records; reports; summaries; studies; analyses; evaluations; notes or notebooks; indices; logs, books, booklets, or binders; pamphlets; calendar or diary entries; press clippings; graphs; tables; charts; drawings; maps; meeting minutes; photographs; transcripts; audio or video recordings or tapes; facsimile transmissions; electronic mail messages; administrative decisions, orders, or rulings; and the like.

The term "Document" should be construed to encompass all responsive Documents and related materials of any nature and each and every copy or draft of a Document that is not identical to the original or to any other copy or draft.

4. The term "DRE" refers to direct recording electronic voting machines.

5. The term "OPSCAN" refers to optical scan voting machines.

6. The term "voting system" refers to the total combination of mechanical, electro-mechanical, or electronic equipment, and any ancillary equipment and software, firmware, and documentation required to program, control, and support the equipment, all of which is used to define ballots, cast and count votes, report and/or display election results, and maintain and produce any audit trail information. Only systems that utilize DRE or OPSCAN voting machines are included in this definition unless otherwise stated.

7. The term "malfunction" refers to any event reported by anyone regarding any voting system or any component thereof indicating (1) that the voting system did not record or may not have accurately recorded a voter's vote, (2) that voters encountered difficulty using the voting system, (3) that voting system exhibited anomalous or unexpected behavior, or (4) that the

voting system failed to properly perform any function for which it was certified under state or federal law.

8. Unless otherwise specified, "November 7, 2006, election" and "election of November 7, 2006" refers to the November 7, 2006, general election in Sarasota County, Florida as well as any corresponding early voting.

REQUESTS FOR PRODUCTION

Request for Production No.1.

Documents sufficient to show the name, address, and job title of all employees that participated in the administration of the November 7, 2006, election.

Request for Production No.2.

For the November 7, 2006, election, all Documents discussing, relating to, reflecting, or in any manner memorializing any reported voting system malfunction, including but not limited to Documents identifying any components that reportedly malfunctioned and any remedial action taken.

Request for Production No.3.

For any election in any jurisdiction, all Documents discussing, relating to, reflecting, or in any manner memorializing any reported voting system malfunction, including but not limited to Documents identifying any components that reportedly malfunctioned and any remedial action taken.

Request for Production No.4.

Any election plan, manual, guide, policy, rule, procedure, or practice provided to any Sarasota County election official or poll worker regarding the administration or use of voting equipment, creating and loading ballots, or tabulating and submitting results.

Request for Production No.5.

For the November 7, 2006, election all data generated by any voting machine that reportedly malfunctioned, including but not limited to ballot images, redundant or backup vote data, and audit data from DRE and OPSCAN voting machines.

Request for Production No.6.

For the November 7, 2006, election, all communications between and/or among Defendants (including ES&S), election officials, or poll workers regarding the malfunction of any voting system or component thereof.

DATED: December 11, 2006

Respectfully submitted,

By _____

Counsel for Voter Plaintiffs

Lowell Finley, Esq.
(Pro hac vice application to be filed)
VOTER ACTION
1604 Solano Avenue
Berkeley, California 94707
Telephone: (510) 318-2248
Facsimile: (415) 723-7141

Cindy A. Cohn, Esq.
Matthew J. Zimmerman, Esq.
(Pro hac vice applications to be filed)
ELECTRONIC FRONTIER
FOUNDATION
454 Shotwell Street
San Francisco, California 94110
Telephone: (415) 436-9333 x127
Facsimile: (415) 436-9993

Elliot M. Minberg, Esq.
Judith E. Schaeffer, Esq.
(Pro hac vice applications to be filed)
PEOPLE FOR THE AMERICAN WAY
FOUNDATION
2000 M Street N.W #400
Washington, D.C. 20036
Telephone: (202) 467-4999
Facsimile: (202) 293-2672

Rebecca Harrison Steele, Esq.
Fla. Bar No. 067326
Zeina N. Salam, Esq.
Florida Bar No. 653632
ACLU FOUNDATION OF FLORIDA,
INC.
West Central Florida Office
112 N. Delaware Ave.
Tampa, FL 33606
P O Box 18245
Tampa, FL 33679-8245
Telephone: (813) 254-0925
Facsimile: (813) 254-0926

2995

Reginaid J. Mitchell, Esq.
Florida Bar No. 0621293
PEOPLE FOR THE AMERICAN WAY
FOUNDATION
1550 Melvin Street
Tallahassee, FL 32301
Telephone: (850) 877-0307
Facsimile: (850) 402-1999

Muslima Lewis, Esq.
Director - Voting Rights Project
Florida Bar No. 0158305
Randall C. Marshall, Esq.
Legal Director
Florida Bar No. 181765
Aziza Naa-Kaa Botchway
Florida Bar No. 017803
ACLU FOUNDATION OF FLORIDA,
INC.
4500 Biscayne Boulevard, Suite 340
Miami, FL 33137-3227
Telephone: (786) 273-2729
Facsimile: (786) 363-1448

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the above has been furnished by
facsimile on this 11th day of December 2006 to the following:

Kendall Coffey, Esq.
Florida Bar No.: 259861
Coffey & Wright, LLP
2665 South Bayshore Dr
PH-2, Grand Bay Plaza
Miami, FL 33133
Telephone: (305) 857-9797
Facsimile: (305) 859-9919
*Attorney for Plaintiff Candidate
Christine Jennings*

Sam Hirsch, Esq.
Jessie Amunson, Esq.
Donald E. Verrilli, Esq.
(Pro hac vice applications filed)
Jenner & Block, LLC
601 Thirteenth Street, NW
Suite 1200 South
Washington, DC 20005
Telephone: (202) 639-6000
Facsimile: (202) 661-4900
*Attorneys for Plaintiff Candidate
Christine Jennings*

Ron Labasky, Esq.
Florida Bar No.: 206326
Young Van Assenderp, P.A.
225 South Adams Street
Suite 200
Tallahassee, FL 32301-1700
Telephone: (850) 222-7206
Facsimile: (850) 561-6834
*Attorney for Defendants Supervisor of
Elections Kathy Dent and Judge Phyllis
Galen*

Glenn Thomas Burhans Jr., Esq.
Florida Bar No.: 605867
Hayden R. Dempsey, Esq.
Florida Bar No.: 0014435
Greenberg Traurig, P.A.
101 East College Avenue
Tallahassee, FL 32301
Telephone: (850) 222-6891
Facsimile: (850) 681-0207
*Attorneys for Defendant Candidate Vern
Buchanan*

Mark Herron, Esq.
 Florida Bar No.: 199737
 Messer, Caparello & Self, P.A.
 2618 Centennial Place
 Tallahassee, Florida 32308
 Telephone: (850) 222-0720
 Facsimile: (850) 558-0659
*Attorney for Plaintiff Candidate
 Christine Jennings*

Richard T. Donelan, Jr., Esq.
 Florida Bar No.: 198714
 Chief Counsel
 Department of Financial Services
 200 East Gaines Street
 Tallahassee, FL 32399-4727
 Telephone: (850) 413-3010
 Facsimile: (850) 413-3029
*Attorney for Defendant Tom Gallagher,
 Chief Financial Officer*

Harry O. Thomas, Esq.
 Florida Bar No.: 195097
 Radey Thomas Yon & Clark, P.A.
 Post Office Box 10967
 Tallahassee, Florida 32302
 301 S. Bronough Street, Suite 200
 Tallahassee, FL 32301-1722
 Telephone: (850) 425-6654
 Facsimile: (850) 425-6694
*Attorney for Defendant Election Systems
 & Software, Inc.*

By: _____
 Rebecca Harrison Steele, Esq.

Pete Antonacci, Esq.
 Florida Bar No.: 280690
 Allen C. Winsor, Esq.
 Florida Bar No.: 16295
 Gray Robinson, P.A.
 300 South Bronough Street
 Suite 600
 Tallahassee, FL 32301
 Telephone: (850) 577-9090
 Facsimile: (850) 577-3311
*Attorneys for Defendants, Governor Jeb
 Bush, Secretary of State Sue M. Cobb
 and State Senator Daniel Webster*

Stephen Demarsh
 Florida Bar No. 335649
 Frederick J. Elbrecht
 Florida Bar No. 314609
 Office of the County Attorney
 1660 Ringling Boulevard, Second Floor
 Sarasota, FL 34236-6870
 Telephone: (941) 861-7272
 Facsimile: (941) 861-7267
*Attorneys for Defendant County
 Commissioner Paul Mercier
 Miguel A. DeGrandy
 Florida Bar No.: 332331
 Miguel DeGrandy P.A.
 800 S. Douglass Road, Suite 850
 Coral Gables, FL 33134-2088
 Telephone: (305) 444-7737
 Facsimile: (305) 374-8743
*Attorney for Defendant Election Systems
 & Software, Inc.**

FAX COVER SHEET

ACLU FOUNDATION OF FLORIDA

813.254.0925

P.O. BOX 18245

TAMPA, FL 33679-8245

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Urgent
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2999

Exhibit D

ES&S Response to Voter Plaintiffs'
Request for Production at Responses
2, 3, 5, & 6

SA-300

3000

IN THE CIRCUIT COURT FOR THE SECOND JUDICIAL CIRCUIT
IN AND FOR LEON COUNTY, FLORIDA
CIVIL DIVISION

CHRISTINE JENNINGS, nominee of the
Democratic Party for Representative in
Congress from the State of Florida's
Thirteenth Congressional District,

Plaintiff,

CASE NO. 2006-CA-2973

Consolidated with Case No. 2006-CA-2996

vs.

ELECTIONS CANVASSING COMMISSION
OF THE STATE OF FLORIDA, consisting of
Governor Jeb Bush, Chief Financial Officer
Tom Gallagher and State Senator Daniel Webster,
et al.,

Defendants.

**DEFENDANT ELECTION SYSTEMS & SOFTWARE, INC., RESPONSE TO VOTER
PLAINTIFFS' FIRST SET OF REQUESTS FOR PRODUCTION AND INSPECTION**

Defendant, Election Systems & Software, Inc., ("ES&S") responds to Voter Plaintiffs' First Set of Requests For Production and Inspection ("Discovery Request") as follows:

GENERAL OBJECTIONS

1. ES&S objects to the Discovery Requests to the extent they seek information that was prepared for or in anticipation of litigation, that constitute work product, that is protected by the attorney-client privilege, that is protected by the trade secret privilege or that is otherwise privileged or protected against discovery.
2. ES&S objects to providing information called for by the Discovery Requests that is publicly available or that is already or should be in the possession, custody, or control of Voter Plaintiffs or that was provided or will be provided to the Voter Plaintiffs by other Defendants.
3. ES&S objects to the Discovery Requests to the extent they purport to require ES&S

3001

to provide information not presently in its possession, custody, or control, or to make unreasonable inquiries of persons or other entities.

4. ES&S objects to the Discovery Requests to the extent that they are vague, overly broad, unduly burdensome, harassing, and/or not reasonably calculated to lead to the discovery of relevant or admissible evidence.

5. ES&S' responses to the Discovery Requests are made without in any way waiving or intending to waive, and ES&S expressly preserves:

- (A) all objections it may have as to the competence, relevance, materiality, and admissibility as evidence for any purpose of the information to be produced, or the subject matters thereof;
- (B) the right to object on any ground to the use of the information in any aspect of this or any other court action or judicial or administrative proceeding or investigation;
- (C) all applicable privileges, exemptions, and protections from discovery; and
- (D) the right at any time to supplement their responses to the
Discovery Requests.

6. ES&S objects to the Discovery Requests to the extent that they seek documentation which is confidential and exempt trade secrets as defined by §§ 688.002, §12.081 Florida Statutes (2006). Voter Plaintiffs have moved to compel production of privileged trade secret documentation from the State Defendants and Sarasota County Defendants. ES&S will not produce any such documentation unless and until ordered by the Court.

7. ES&S objects to the Discovery Requests to the extent that they are continuing in nature and require prompt supplemental responses. *See* Rule 1.280(e), Fla.R.Civ.P.

8. ES&S objects to the Discovery Requests to the extent that they require separate answers and for each document to indicate the response to which it responds. ES&S has the option to produce any responsive documents as they are kept in the usual course of business. *See* Rule 1.350(b), Fla.R.Civ.P.

9. ES&S objects to the Discovery Requests to the extent that they seek documents to which Plaintiff Jennings is not entitled to seek through discovery. The Voter Plaintiffs have no greater rights in this action than Plaintiff Jennings.

RESPONSE TO REQUESTS FOR PRODUCTION

Subject to the objections below and the general objections which are incorporated by reference into each specific response below. ES&S will produce the requested documents as detailed below.

RFP NO. 1:

Documents sufficient to show the name, address, and job title of all employees that participated in the administration of the November 7, 2006, election.

RESPONSE TO RFP NO. 1:

ES&S objects to RFP No. 1 because it is vague and ambiguous with regard to what is meant by the words: "participated in the administration of the November 7, 2006, election." As ES&S understands such words, no ES&S employees participated in the administration of the November 7, 2006, election.

RFP NO. 2:

For the November 7, 2006 election, all Documents discussing, relating to, reflecting, or in any manner memorializing any reported voting system malfunction, including but not limited to Documents identifying any components that reportedly malfunctioned and any remedial action taken.

RESPONSE TO RFP NO. 2:

ES&S objects to this request as vague, and also as overbroad based on Voter Plaintiffs' definition of the term malfunction. RFP No. 2, similar to other requests, presumes the existence of a malfunction as that term is defined in the Discovery Requests. Since becoming a party to this litigation, ES&S has been made aware that certain voters provided affidavits relating to the operation of the voting machines to Plaintiff Jennings. These affidavits have now been provided to ES&S and ES&S understands that these affidavits have also previously been provided to Voter Plaintiffs. Accordingly, ES&S objects to producing the voter affidavits since they are already in the possession of Voter Plaintiffs. Other than the voter affidavits, ES&S is currently unaware of any other documents currently in its possession relating to or memorializing voting system malfunction as that term is defined in the Discovery Requests. ES&S has no documents showing that the voting system did not record or may not have accurately recorded a voter's vote, that the voting system exhibited anomalous or unexpected behavior or that the voting system failed to properly perform any function for which it was certified under state or federal law. Should ES&S subsequently discover any such documents, ES&S will produce for inspection any responsive non-privileged documents in its possession that are not duplicative of documents already produced by another party to Voter Plaintiffs. To date, all the documents that have come into the possession of ES&S demonstrate that a malfunction did not occur. See the Secretary of State's Parallel Test Summary Report issued December 18, 2006.

RFP NO. 3:

For any election in any jurisdiction, all Documents discussing, relating to, reflecting, or in any manner memorializing any reported voting system malfunction, including but not limited to Documents identifying any components that reportedly malfunctioned and any remedial action taken.

RESPONSE TO RFP NO. 3:

ES&S objects to this request as vague, and also as overbroad because it seeks documents not related to the November 7, 2006 general election in Sarasota County or not related to the iVotronic voting system utilized in the November 7, 2006, general election in Sarasota County which is the election at issue in this lawsuit. To the extent this request also refers to malfunctions of voting machines in the November 7, 2006, general election in Sarasota County, ES&S adopts and incorporates by reference its response to RFP No. 2, above.

RFP NO.4:

Any election plan, manual, guide, policy rule, procedure, or practice provided to any Sarasota County election official or poll worker regarding the administration or use of voting equipment, creating and loading ballots, or tabulating and submitting results.

RESPONSE TO RFP NO.4:

ES&S objects to this request as calling for the production of privileged confidential trade secret documents. Documents that may be responsive to RFP No. 4 are currently the subject of pending motions to compel filed by Voter Plaintiffs and Plaintiff Jennings directed to the State Defendants and the Sarasota County Defendants. ES&S objects to producing any documents responsive to this request unless the Court, in ruling on the pending motions to compel, orders the production of such documents.

RFP NO. 5:

For the November 7, 2006, election all data generated by any voting machine that reportedly malfunctioned, including but not limited to ballot images, data stored in redundant or backup memory, and audit data from DRE and OPSCAN voting machines.

RESPONSE TO RFP NO. 5:

ES&S objects to this request as vague, overbroad, and calling for the production of privileged confidential trade secret materials and information. Documents that may be responsive to RFP No. 5 are currently the subject of pending motions to compel filed by Voter Plaintiffs and Plaintiff Jennings directed to the State Defendants and the Sarasota County Defendants. ES&S objects to producing any documents responsive to this request unless the Court, in ruling on the pending motions to compel, orders the production of such documents. In addition, RFP No. 5, similar to other requests, presumes the existence of a malfunction as that term is defined in the Discovery Requests. Other than the voter affidavits described in response to RFP No. 2 above, ES&S is currently unaware of any other documents currently in its possession relating to or memorializing voting system malfunction as that term is defined in the Discovery Requests. ES&S has no documents showing that the voting system did not record or may not have accurately recorded a voter's vote, that the voting system exhibited anomalous or unexpected behavior or that the voting system failed to properly perform any function for which it was certified under state or federal law. To date, all the documents that have come into the possession of ES&S demonstrate that a malfunction did not occur. See the Secretary of State's Parallel Test Summary Report issued December 18, 2006. Furthermore, ES&S is currently unaware of any non-privileged documents currently in its possession related to ballot images, redundant or backup vote data or audit data. ES&S also objects because discovery responses served by Defendant Dent, indicate that ballot images and audit logs have previously been produced to Voter Plaintiffs.

3006

RFP NO. 6:

For the November 7, 2006, election, all communications between and/or among Defendants (including ES&S), election officials, or poll workers regarding the malfunction of any voting system or component thereof.

RESPONSE TO RFP NO. 6:


ES&S objects to this request as vague and also overbroad to the extent that it seeks documents not related to the November 7, 2006, general election in Sarasota County and presumes the existence of a malfunction as that term is defined in the Discovery Requests. See response to RFP No. 2 above regarding the voter affidavits provided to ES&S by Plaintiff Jennings which are documents regarding voters who claim they encountered difficulty using the voting system. ES&S has no documents showing that the voting system did not record or may not have accurately recorded a voter's vote, that the voting system exhibited anomalous or unexpected behavior or that the voting system failed to properly perform any function for which it was certified under state or federal law. In fact, all the documents that have come into the possession of ES&S demonstrate that a malfunction did not occur. See the Secretary of State's Parallel Test Summary Report issued December 18, 2006. ES&S also objects to production of the requested documents because a discovery response served by Defendant Dent states that any responsive documents to this request will be produced.

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing has been sent by electronic transmission and U.S. Mail on this 26th day of December, 2006, to all counsel of record on the attached mailing list.

3007

RADEY THOMAS YON & CLARK, P.A.


HARRY O. THOMAS (Florida Bar #195097)
JEFFREY L. FREHN (Florida Bar #817562)
Post Office Box 10967 (32302)
301 S. Bronough Street, Suite 200
Tallahassee, Florida 32301-1722
Telephone: (850) 425-6654
Facsimile: (850) 425-6694

Miguel A. De Grandy (Florida Bar #332331)
Miguel De Grandy P.A.
800 S. Douglas Road, Suite 850
Coral Gables, Florida 33134-2088

COUNSEL FOR DEFENDANT
ELECTION SYSTEMS & SOFTWARE, INC.

3008

MAILING LIST

Kendall Coffey, Esq.
Coffey & Wright, LLP
2665 South Bayshore Drive
PH-2, Grand Bay Plaza
Miami, FL 33133

and

Mark Herron, Esq.
Messer, Capareello & Self, P.A.
2618 Centennial Place
Tallahassee, FL 32308

Counsel for Plaintiff Jennings

Stephen E. DeMarsh
County Attorney
Frederick J. Elbrecht
Deputy County Attorney
Office of the County Attorney
1660 Ringling Blvd., 2nd Floor
Sarasota, Florida 34236

Attorneys for Defendant, Sarasota County
Canvassing Board, Sarasota County Judge
Phyllis Galen, Sarasota County Commissioner
Paul Mercier and Kathy Dent, Sarasota
County Supervisor of Elections, as members
of and the Sarasota County Canvassing Board

Peter Antonacci, Esq.
Allen C. Winsor, Esq.
Gray Robinson, P.A.
301 S. Bronough St., Ste. 600
P.O. Box 11189
Tallahassee, FL 32301

Attorneys for Defendants, Elections
Canvassing Commission of the State of
Florida, Sue Cobb, Secretary of State and
Dawn K. Roberts, Director, Division of
Elections and Defendants, Tom Gallagher,
Chief Financial Officer, State of Florida, and
Governor Jeb Bush, and Senator Dan
Webster, as members of and as the Florida
Elections Canvassing Commission

Hayden R. Dempsey, Esq.
Glenna Burhans, Esq.
Greenberg Traurig, P.A.
101 East College Avenue
Tallahassee, FL 32301

Attorneys for Defendant, Vern Buchanon

Ronald A. Labasky, Esq.
Young Van Assenderp, P.A.
225 South Adams Street
Tallahassee, FL 32302

Attorneys for Defendant, Kathy Dent

Lowell Finley, Esq.
1604 Solano Avenue
Berkeley, CA 94707

Elliot M Mineberg, Esq.
Judith E. Schaeffer, Esq.
2000 M. Street N.W., #400
Washington, D.C. 20036

Reginald J. Mitchell, Esq.
1550 Melvin Street
Tallahassee, FL 32301

Muslima Lewis, Esq.
Randall C. Marshall, Esq.
4500 Biscayne Boulevard, Suite 340
Miami, FL 33137-3227

Rebecca Harrison Steele, Esq.
Seina N. Salam, Esq.
ACLU West Central Florida Office
P.O. Box 33679-8245
Tampa, FL 33679-8245

Cindy A. Cohn, Esq.
Matthew J. Zimmerman, Esq.
454 Shotwell Street
San Francisco, CA 94110

Counsel for Plaintiffs in Fedder lawsuit

SA-309

3009

Exhibit E

Aug. 15, 2006 Letter from ES&S to
Florida iVotronic Users

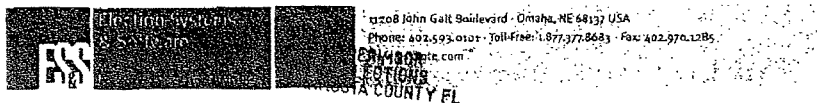
SA-310

3010

03/14/07 WED 12:19 FAX 941 861 8909

ELECTIONS SARASOTA CNTY

002



2006 AUG 22 A 8 52

August 15, 2006

Dear FL Users:

FILED FOR RECORD
KATHY BENT

It has come to our attention after a number of inquiries from several of our iVotronic 12 inch screen users that some of your screens are exhibiting slow response times. After receiving some of these terminals in our Omaha, NE facility we were able to replicate a slow response during our testing.

After further analysis of the issue it has been determined that touchscreens on units with previous versions of firmware did not exhibit this condition. Therefore, our Engineering and Development Teams reviewed the differences in firmware code for versions 8.0.1.2 and 7.4.5.0 to establish the possible cause of this condition.

We have determined that the delayed response time is a result of a smoothing filter that was added to iVotronic firmware versions 8.x and higher. This smoothing filter waits for a series of consistent touchscreen reads before a candidate name is highlighted on the ballot. In some cases, the time lapse on these consistent reads is beyond the normal time a voter would expect to have their selection highlighted. This delayed response to touch may vary from terminal to terminal and also may not occur every single time a terminal is used.

The improvement will require an update to the firmware, and state-level certification. We have already taken steps to make the necessary changes to the firmware. Our plans are to certify this in the state of Florida in time for use for the November, 2006 General Election. This firmware upgrade would not involve any Unity software changes or upgrades to any other component of your voting system. This firmware change is only necessary for the 12" size iVotronic screens.

In order to avoid any potential issues at the polls on September 5th, it is our recommendation that you train your poll workers and voters to expect this slightly delayed response time for their highlighted selections. We have included with this mailing a sample voting booth instruction sign for your review and use.

It is important to note that this delayed response time in no way affects the integrity or reliability of the iVotronic voting system. All votes will be recorded securely and accurately as they always have been. No other functionality within the iVotronic system is compromised or affected by this issue.

SA-311

3011

03/14/07 WED 12:20 FAX 941 561 8000

ELECTIONS SARASOTA CNTY

003

It is our goal and focus at ES&S to provide secure, accurate and reliable voting systems to all of our clients worldwide. On behalf of ES&S, I can assure you that we are working with the Florida Division of Elections to rectify this situation and to prevent it from being an issue in all other future elections.

We will keep you posted on our developments as we work through the necessary phases of implementing this firmware in our 12" iVotronic screen counties in Florida.

Thank you for continued support.

Sincerely,

Linda Bennett
Regional Account Manager

Cc: David R. Drury, Chief, Bureau of Voting Systems Certification

SA-312

ATTENTION VOTERS

Take Care When Voting!

- ✓ Make your selections by pushing firmly on the touch screen.
- ✓ Hold down your selection until it is highlighted. This may take several seconds.
- ✓ Take the time to review your selections. Ensure that all of your intended selections are reflected on the summary screen.

If you have any questions about voting, please ask a poll worker before you have cast your ballot.

The ES&S iVotronic represents the leading edge of voting technology. All votes cast on the iVotronic are recorded securely and accurately.

3013

Exhibit F

Jeremy Wallace, *Memo on Voting
Machines Misfiled*, Sarasota Herald-
Tribune, March 17, 2007

SA-314

Article published Mar 17, 2007

Memo on voting machines misfiled

Letter to Sarasota County officials put in file of "proprietary" papers.

By JEREMY WALLACE
H-T POLITICAL WRITER
jeremy.wallace@heraldtribune.com

SARASOTA COUNTY -- A filing error caused a memo alerting Sarasota County election officials about an "issue" with voting equipment last August to be hidden from the public for the last seven months, an attorney for Supervisor of Elections Kathy Dent said.

The letter was accidentally put into a file of documents that county staff thought was for protecting "proprietary" information for the voting machine company Election Systems & Software, attorney Ron Labasky said Friday night.

That prevented Dent's office from turning over the memos about the voting machine issue to Democrat Christine Jennings, who is challenging the Nov. 7 election results.

In the memo, ES&S describes a problem with a "smoothing filter" that sometimes would delay responses on the iVotronic touch-screen machines.

Republican Vern Buchanan was certified the winner of the Nov. 7 election by 369 votes. But Jennings is challenging the results, saying an abnormally high undervote cost her the election.

A spokesman for Jennings said it is an unbelievable coincidence that Dent, the state Division of Elections and ES&S all failed to provide the memo when asked for it.

But Labasky said it was not intentional, just human error.

"If we had found it before, we would have sent it to them," Labasky said.

Labasky said the memo -- now widely available on the Internet -- was sent to Jennings' attorneys on Friday.

Attorneys for Jennings say the memo goes to the exact point they have been trying to make in court: that the voting machines had glitches that cost Jennings the 13th Congressional District election.

Jennings has sued the county in state court and has filed a challenge to the election in Congress, hoping to either overturn the results or be granted a new election.

Source: <http://www.heraldtribune.com/apps/pbcs.dll/article?AID=20070317/NEWS/703170432>

3015

Dent, ES&S and a state Division of Elections spokesman all say the delay referred to in the memo had nothing to do with the 13 percent undervote in the disputed Nov. 7 elections.

A state-funded audit of the voting machines considered the possibility of a delay resulting in the undervote, but ruled it out, said Alec Yasinsac, a Florida State University professor of computer science who participated in the review.

In addition, new e-mails obtained by election reform groups and posted on the Internet show Dent thought the delay issue may have been happening in some of the 1,400 voting machines in Sarasota.

"I think that has happened in at least one of our machines," Dent wrote in an e-mail to elections workers on Aug. 24, 2006.

Nine days before that e-mail, ES&S officials sent a memo to all county elections officials in the state that use their equipment, warning them that "beyond normal" waiting times were being reported by "a number" of users of its iVotronic touch-screen voting machines.

The company included a sample poster to Dent and other supervisors of elections, meant to warn voters that it "may take several seconds" for their selected candidate to be highlighted.

In the e-mail exchange with her employees, Dent questioned whether to display the new posters at polling sites during the Sept. 5 primary election, but ultimately decided that the county's existing instructions were sufficient.

"Make your selection by touching your choice on the screen until it becomes highlighted," read the poster used by the county during the primary and the Nov. 7 election.

Dent said earlier last week that she vaguely remembered the letter, but thought it was "much ado about nothing."

Other counties took a different approach. Pasco County election officials chose to not use 40 machines of the type ES&S warned about, said Brian E. Corley, that county's supervisor of elections.

Jeremy Wallace can be reached at 361-4966 or jeremy.wallace@heraldtribune.com.

3016

Exhibit G

Kathy Dent Display - *Touch Screen*
Voting Easy As One, Two, Three.

SA-317



Touch Screen Voting

Easy As One, Two, Three



Make your selections

Make your selection by touching your choice on the screen until it becomes highlighted. If you change your mind, touch the new choice and the highlight will appear on your new choice or touch the same choice again to undo the highlight, as appropriate.



Touch "Next Page" at the bottom right of the screen to move to the next ballot page.

Touch "Previous Page" at the bottom left of the screen to move back one page.



To vote for a candidate whose name is not printed on the ballot, touch "Write-In" and a touch keyboard will appear. Type the candidate's name and touch "Accept."



Review your selections

Touch "Review Ballot" on the last ballot page to review your selections.



To change vote, touch the name or issue on the "Review Ballot" page or step back through the ballot using "Previous Page" in the lower left corner of the screen.

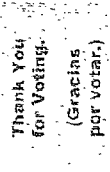


Push the flashing red "VOTE" button

Press the flashing red "VOTE" button at the top of the screen to cast your ballot.



"Thank You for Voting" means your vote has been cast.



Kathy Dent
Supervisor of Elections, Sarasota County
101 South Washington Blvd., Sarasota, FL 34230-4194
telephones: 941-851-8600 www.srgelections.com

3018

Exhibit H

State Audit Report, Sec. 8.4.9

SA-319

8.4.6 Some dynamic error not easily visible in the source code, e.g. buffer overflow or data left from previous voters caused the anomalous undervote.

Contraindications: (see Section 7)

- TEST CONFIRMATION. The error did not occur in testing, but would have had to occur with great frequency during voting.
- CHARLOTTE and LEE UNDERVOTE. Why did the problem occur in Sarasota, Charlotte, and Lee Counties, but nowhere else?
- FLORIDA UNIQUENESS

8.4.7 The touch screens were miscalibrated to prevent voting in the District 13 race.

Contraindications:

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- A very large number of machines would have exhibited the problem, and could not have been recalibrated before post-election testing. Thus, the problem would have been observed in testing.
- The undervote would have been much higher.
- Other races on other screens would have been affected but were not.

8.4.8 The touchscreens were miscalibrated so that the hotspot and corresponding candidate box were misaligned.

Contraindications:

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- A large number of machines would have exhibited the problem and could not have been recalibrated before post-election testing. Thus, the problem would have been observed in testing.
- Other races on other screens would have been affected but were not.

8.4.9 The touchscreen smoothing filter caused the undervote.

A smoothing filter is a mathematical procedure for damping transient touch screen effects such as the voter altering the position of her finger or changing the pressure exerted by the finger on the screen. The allegation has been floated on Internet newsgroups that the iVotronic touch screen filter could have caused the undervote. No explanation has been offered how the effect would confine itself to a single race on a single screen. The touch screen filter does not act differently on different screens

Contraindications:

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- FULL RECORDING
- FLORIDA UNIQUENESS
- Other races would have been affected but were not.

8.4.10 A “controlling contest” specification linked CD-13 to a vote in a different race, thus affecting the voter’s selection in CD-13.

Contraindications: (see Section 6.2.1.3)

3020

Exhibit I

Mark K. Matthews, *Elections
Officials Warned of Glitch*, South
Florida Sun-Sentinel, Mar. 15, 2007

SA-321

<http://www.sun-sentinel.com/news/local/florida/orl-votemachine1507mar15,0,5704211.story?coll=sfla-news-florida>

Election officials warned of glitch

A voting-machine maker told them users might see a delay -- adding to controversy.

Mark K. Matthews
Washington Bureau

WASHINGTON -- Months before the 2006 general election, a top voting-machine manufacturer sent a written warning to elections officials in Florida about a glitch in its equipment.

That letter has reignited debate over the results of a contested Sarasota area congressional race in which Republican Vern Buchanan won by only 369 votes.

But election officials said Wednesday that the defect did not have an impact on the results.

In the Aug. 15 memo, a representative from Election Systems and Software wrote that people using its touch-screen voting machines might notice a slight delay between the time they voted and when that choice actually appeared on-screen.

The company recommended a patch to fix the time-lapse problem -- estimated to be about two to three seconds -- but the update was never installed on the machines because there wasn't enough time before the election, state and company officials said.

"We were not alarmed by the delay because we knew it was not jeopardizing the votes being cast or the votes being counted," said Sterling Ivey, spokesman for the state Division of Elections.

That decision caused an outcry from Democrat Christine Jennings, who has contested her loss to Buchanan on grounds that ES&S machines in her race malfunctioned.

"It's shameful and shocking that our election system was not fixed," said Jennings, who ran last fall to represent Florida's House District 13. As part of her lawsuit, Jennings wants to see the inner workings of the ES&S equipment -- a request now under the consideration of a state appeals court.

In that race, almost 18,000 electronic ballots in Sarasota County registered no choice, also known as an "undervote." The undervote rate there was about six times greater than in the rest of the district.

After the election, the state examined the machines and found nothing wrong with

Source: <http://www.sun-sentinel.com/news/local/florida/orl-votemachine1507mar15,0,5704211.story?coll=sfla-news-florida>

1

3022

the equipment. Included in this examination were questions about the time delay, lead investigator Alec Yasinsac said.

Yasinsac said the lapse was "irritating" but noted that his team never found an instance where the delay led to a vote not being recorded. He said the system had safeguards to protect the machines from lost votes.

Yasinsac also dismissed concerns that the time lapse could cause some voters to continually press their choice -- potentially causing them to "uncheck" their initial, first selection.

He said the machine's software prevented any action during the time lapse, including the potential to uncheck a candidate choice.

Still, at least one computer expert has questioned whether these machines should have been used in the first place.

"Having this kind of delay is a serious enough problem that you shouldn't have used them in the election," said Avi Rubin, a voting-machine expert at Johns Hopkins University.

Mark K. Matthews can be reached at mmatthews@orlandosentinel.com or 202-824-8222.

Source: <http://www.sun-sentinel.com/news/local/florida/orl-votemachine1507mar15.0.5704211.story?coll=sfla-news-florida>

2

SA-323

3023

Exhibit J

Zone Tech Log Sheets from Nov.
2006 Election, Composite Exhibit

SA-324

3024

ZONE TECH LOG SHEET

PRECINCT 3

Tech's Name: Charlie Bentley

November 7, 2006

Harvest Tabernacle

First Visit Time: 6:45 AM

Checklist:

- Time & Date Zero Tape was Created 6:26 11/7 Use checklist
- Number of Terminals Opened matches the number of Terminals in the Polling Room
- OPENED Times and Dates are reasonable and Dates are accurate & no units show a closed Time or Date
- PRECINCT: displays the appropriate precinct
- All races and contests show ZERO
- ADA unit has been opened and is on a table ready for use
- Cell phone has been turned on and is ready to use
- All iVotronics are plugged in and have been propped up on their stands

Explain any opening problems: VO105987-B would not open; terminal opening failed. All other 8 Ivo opened okay. Zero tape shows 8 Ivos. Closed lid on Ivo that would not open and reported unopened Ivo to Scott Farrington.

Visit Time: 9:15 AM

Check here if there was nothing to report

Visit Time: 12:30

Check here if there was nothing to report

Visit Time: 4:55 One of the AAA Ivo has a "minor" problem. ~~the~~ Voter must press harder ~~to~~ in order for vote to register. Clerk will note this in her log book Check here if there was nothing to report

Visit Time: _____

Check here if there was nothing to report

3025

ZONE TECH LOG SHEET,

PRECINCT 18

Tech's Name: Kirk Jaarvik

November 7, 2006

First Visit Time: 2:00

Checklist:

- Time & Date Zero Tape was Created 6:32:31/07/06
- Number of Terminals Opened matches the number of Terminals in the Polling Room
- OPENED Times and Dates are reasonable and Dates are accurate & no units show a closed Time or Date
- PRECINCT; displays the appropriate precinct
- All races and contests show ZERO
- ADA unit has been opened and is on a table ready for use
- Cell phone has been turned on and is ready to use
- All iVotronics are plugged in and have been propped up on their stands

Explain any opening problems: _____

Visit Time: 10:45 2 machines out of service Check here if there was nothing to report
clear callro in problem with votes being recorded on
review general. Have back to back to take them out of
service.

Visit Time: 2:15 Check here if there was nothing to report

Visit Time: _____ Check here if there was nothing to report

Visit Time: _____ Check here if there was nothing to report

3026

ZONE TECH LOG SHEET

PRECINCT 18

Tech's Name: ANTOINE HEURY

November 7, 2006

First Visit Time: 8:00

Checklist:

- Time & Date Zero Tape was Created 6:15
- Number of Terminals Opened matches the number of Terminals in the Polling Room
- OPENED Times and Dates are reasonable and Dates are accurate & no units show a closed Time or Date
- PRECINCT: displays the appropriate precinct
- All races and contests show ZERO
- ADA unit has been opened and is on a table ready for use
- Cell phone has been turned on and is ready to use
- All iVotronics are plugged in and have been propped up on their stands

Explain any opening problems: TWO VDS HAD THE LIDS CLOSED DOWN BECAUSE THE CLERK SAID THE ~~VOTERS~~ TWO VOTERS COMPLAINED THAT THEIR SELECTION DID NOT REGISTER SO, SCOTT AND MYSELF LOOKED AT THE MACHINES AND FOUND NO PROBLEM WITH IT, SO WE LEFT THE LIDS BACK UP (THE CONGRESSIONAL RAC)

Visit Time: 12:00

Check here if there was nothing to report

Visit Time: 1:45

Check here if there was nothing to report

Visit Time: _____

Check here if there was nothing to report

Visit Time: _____

Check here if there was nothing to report

SA-327

3027

ZONE TECH LOG SHEET

PRECINCT 19

Tech's Name: NICK CLIFFE

November 7, 2006

First Visit Time: 3:30

Checklist:

- Time & Date Zero Tape was Created _____
- Number of Terminals Opened matches the number of Terminals in the Polling Room
- OPENED Times and Dates are reasonable and Dates are accurate & no units show a closed Time or Date
- PRECINCT: displays the appropriate precinct
- All races and contests show ZERO
- ADA unit has been opened and is on a table ready for use
- Cell phone has been turned on and is ready to use
- All IVotronics are plugged in and have been propped up on their stands

Explain any opening problems: Clerk reports several complaints that voters make
selections that do not appear on the summary screen. The election results
are highlighted in blue 10 or 15 times before the summary page reflects the
selections

Visit Time: 6:10

Check here if there was nothing to report

Visit Time: _____

Check here if there was nothing to report

Visit Time: _____

Check here if there was nothing to report

Visit Time: _____

Check here if there was nothing to report

3028

ZONE TECH LOG SHEET

PRECINCT 32 Tech's Name: POLLY CLARKE November 7, 2006

CHURCH OF THE PALMS - BEE RIDGE

STEPHANIE

First Visit Time: 9:10

Checklist:

- Time & Date Zero Tape was Created 6:39 11/07/06
- Number of Terminals Opened matches the number of Terminals in the Polling Room 8
- OPENED Times and Dates are reasonable and Dates are accurate & no units show a closed Time or Date
- PRECINCT: displays the appropriate precinct
- All races and contests show ZERO
- ADA unit has been opened and is on a table ready for use
- Cell phone has been turned on and is ready to use 702-4207
- All iVotronics are plugged in and have been propped up on their stands

Explain any opening problems: VOID 6951-B NOT ACCEPTING VOTES - UNIT TAKEN OFF LINE

Visit Time: 9:10 SEE ABOVE

Check here if there was nothing to report

Visit Time: 3:00 NO NEW EQUIPMENT PROBLEMS

Check here if there was nothing to report

Visit Time: 7:30 HAVE CALLED - CLOSED OK

Check here if there was nothing to report

Visit Time: _____

Check here if there was nothing to report

3029

ZONE TECH LOG SHEET

PRECINCT 32
32

Tech's Name: DAVID FOSS

November 7, 2006

STEPHAN SIMMONS
991-702-4207

First Visit Time: 6:15

Checklist:

- Time & Date Zero Tape was Created 6:39.43 11-7-2006
- Number of Terminals Opened matches the number of Terminals in the Polling Room
- OPENED Times and Dates are reasonable and Dates are accurate & no units show a closed Time or Date
- PRECINCT: displays the appropriate precinct
- All races and contests show ZERO
- ADA unit has been opened and is on a table ready for use
- Cell phone has been turned on and is ready to use
- All iVotronics are plugged in and have been propped up on their stands

Explain any opening problems:

Visit Time: 6:15

Check here if there was nothing to report

Visit Time: 9:15

Not Using
V106951 - CLOSED AFTER RECORDING SOME VOTES.
TOUCHSCREEN NOT WORKING PROPERLY, HARD TO RECORD
VOTE, NEEDED TO PUSH HARD AND STRIKE TO RECORD
VOTE.

Check here if there was nothing to report

Visit Time: 3:28

Check here if there was nothing to report

Visit Time: 5:25

Check here if there was nothing to report

3030

ZONE TECH LOG SHEET

PRECINCT 46

Tech's Name: Porter Anderson

November 7, 2006

First Visit Time: 6:33A

Checklist:

- Time & Date Zero Tape was Created 6:49:11 11/07/2006
- Number of Terminals Opened matches the number of Terminals in the Polling Room
- OPENED Times and Dates are reasonable and Dates are accurate & no units show a closed Time or Date
- PRECINCT: displays the appropriate precinct
- All races and contests show ZERO
- ADA unit has been opened and is on a table ready for use
- Cell phone has been turned on and is ready to use
- All iVotronics are plugged in and have been propped up on their stands

Explain any opening problems:

Visit Time: 6:33A

Check here if there was nothing to report

Visit Time: 7:28A Went through checklist.

Check here if there was nothing to report

Visit Time: 8:30A Re start TV Demo.

Check here if there was nothing to report

Visit Time: 11:04A Had issues with laptop program explained "Finished Transaction" button.

Check here if there was nothing to report

SA-331

3031

Pct 40

Visit Time: 1:40P Assisted with propping ADA unit for voter.

Check here if there was nothing to report

Visit Time: 3:44P

Check here if there was nothing to report

Visit Time: 5:30P Touch Screen has weak spot that is a nuisance to voters. Misses selections on some pages. Wait is too long - more than 5 sec. is reported by Precinct Tech.

Check here if there was nothing to report

VO103565-B

Visit Time: 6:27P

Check here if there was nothing to report

Visit Time: _____

Check here if there was nothing to report

Visit Time: _____

Check here if there was nothing to report

SA-332

3032

ZONE TECH LOG SHEET

PRECINCT 66

Tech's Name: Dery

November 7, 2006

Jewish Community Center

First Visit Time: 10:20

Checklist:

- Time & Date Zero Tape was Created 6-29
- Number of Terminals Opened matches the number of Terminals in the Polling Room
- OPENED Times and Dates are reasonable and Dates are accurate & no units show a closed Time or Date
- PRECINCT: displays the appropriate precinct
- All races and contests show ZERO
- ADA unit has been opened and is on a table ready for use
- Cell phone has been turned on and is ready to use
- All iVotronics are plugged in and have been propped up on their stands

Explain any opening problems: P.G.B. P50117435 faulty
"error processing"
slow & steady

Visit Time: 2:20 Checked with Clerk after Check here if there was nothing to report
 call from phone bank, Clerk remembers voter saying that "Christine Jennings" vote did not register. Went back and scan a no vote during review, went back and selected.

Visit Time: 6:45 Check here if there was nothing to report
 Close OK

visit Time: _____ Check here if there was nothing to report

visit Time: _____ Check here if there was nothing to report

3033

ZONE TECH LOG SHEET

PRECINCT 71 Tech's Name: JSD November 7, 2006

ST RAPHAEL'S

First Visit Time: 0835

Checklist:

- Time & Date Zero Tape was Created 11/07/2006 0648
- Number of Terminals Opened matches the number of Terminals in the Polling Room 11
- OPENED Times and Dates are reasonable and Dates are accurate & no units show a closed Time or Date
- PRECINCT: displays the appropriate precinct 71
- All races and contests show ZERO
- ADA unit has been opened and is on a table ready for use
- Cell phone has been turned on and is ready to use
- All iVotronics are plugged in and have been propped up on their stands

Explain any opening problems: One iVo they say seems a little slow to touch. They are used to it & still using it. I gave them the option of me looking at it or waiting till later. Since they had a line they opted for me to look at it.

Visit Time: 0917 Check here if there was nothing to report

Delivered Voted packet to Norma Jean

Visit Time: 1406 Check here if there was nothing to report

All OK

Visit Time: 1739 Check here if there was nothing to report

Reviewed closing procedures with Norma Jean.

Visit Time: _____ Check here if there was nothing to report

3034

ZONE TECH LOG SHEET

PRECINCT 72

Tech's Name: CHARIS BVARUS

November 7, 2006

First Visit Time: 8:45 AM

Checklist:

- Time & Date Zero Tape was Created 7:52 AM
- Number of Terminals Opened matches the number of Terminals in the Polling Room
- OPENED Times and Dates are reasonable and Dates are accurate & no units show a closed Time or Date
- PRECINCT: displays the appropriate precinct
- All races and contests show ZERO
- ADA unit has been opened and is on a table ready for use
- Cell phone has been turned on and is ready to use
- All IVotronics are plugged in and have been propped up on their stands

Explain any opening problems:

PRINTER PROBLEMS -

ASK NAKHUK 7-0106676-B MACHINE TAKES LONG TIME TO REGISTER TOUCH

Visit Time: 1:45 PM

Check here if there was nothing to report

Visit Time: 3:45

Check here if there was nothing to report

Visit Time: 6:00 PM

Check here if there was nothing to report

Visit Time: _____

Check here if there was nothing to report

SA-335

3035

ZONE TECH LOG SHEET

PRECINCT 78

Tech's Name: JERRY DENNIS

November 7, 2006

First Visit Time: 9:05 AM

Checklist:

- Time & Date Zero Tape was Created _____
- Number of Terminals Opened matches the number of Terminals in the Polling Room
- OPENED Times and Dates are reasonable and Dates are accurate & no units show a closed Time or Date
- PRECINCT: displays the appropriate precinct
- All races and contests show ZERO
- ADA unit has been opened and is on a table ready for use
- Cell phone has been turned on and is ready to use
- All iVotronics are plugged in and have been propped up on their stands

Explain any opening problems: Clark said they were delayed in getting access to the building to set up their AM. Made them run late. (People were voting as they ran their 4 hrs.)

Visit Time: 9:05 AM Check here if there was nothing to report
Terminal S/N 105705B will not register votes, no matter how hard you press screen. Told Clerk to take machine off line, per Karon's decision in Precinct 124 (they have plenty of machines)

Visit Time: _____ Check here if there was nothing to report
They have a real parking problem, causing cars to jam up close to building. Would suggest a "parking" sign directing people to the overflow lot, which still has easy access to building that would keep people from driving around loop up close to entrance, where congestion ~~occurs~~ occurs.

Visit Time: 5:10 PM Check here if there was nothing to report

Visit Time: _____ Check here if there was nothing to report

3036

ZONE TECH LOG SHEET

PRECINCT

78

Tech's Name:

John Kenney

November 7, 2006

(112) (23)

First Visit Time: 6:46

Checklist:

- Time & Date Zero Tape was Created 7:24 11/07/06
- Number of Terminals Opened matches the number of Terminals in the Polling Room
- OPENED Times and Dates are reasonable and Dates are accurate & no units show a closed time or Date
- PRECINCT: displays the appropriate precinct
- All races and contests show ZERO
- ADA unit has been opened and is on a table ready for use
- Cell phone has been turned on and is ready to use
- All AVtronics are plugged in and have been propped up on their stands

Explain any opening problems:

good job

Visit Time: 10:20

IVO SW# V0105705-0

Check here if there was nothing to report

SW SW# SW# OUT IVO, RECALIBRATE IVO, DID NOT RESOLVE ISSUE. CLOSED IVO, REMOVED FROM CARD. REMOVE IVO FROM LINE.

Visit Time: _____

Check here if there was nothing to report

Visit Time: _____

Check here if there was nothing to report

Visit Time: _____

Check here if there was nothing to report

3037

ZONE TECH LOG SHEET

PRECINCT 83

Tech's Name: Rick JADINE

November 7, 2006

First Visit Time: 9:45

Checklist:

- Time & Date Zero Tape was Created 6:14:21 11/07/2006
- Number of Terminals Opened matches the number of Terminals in the Polling Room 9
- OPENED Times and Dates are reasonable and Dates are accurate & no units show a closed Time or Date
- PRECINCT: displays the appropriate precinct
- All races and contests show ZERO
- ADA unit has been opened and is on a table ready for use
- Cell phone has been turned on and is ready to use
- All Avtronics are plugged in and have been propped up on their stands

Explain any opening problems: _____

Visit Time: 9:45 V010 6453 B Check here if there was nothing to report
WOULD NOT LET VOTER SELECT AN ANSWER. CLEARLY CANCELLED SO
BALLOT + VOTER VOTED ON ANOTHER MACHINE THE NEXT
VOTER HAD NO PROBLEMS

visit Time: _____ Check here if there was nothing to report

Visit Time: _____ Check here if there was nothing to report

Visit Time: _____ Check here if there was nothing to report

3038

ZONE TECH LOG SHEET

PRECINCT 05

Tech's Name: BOB CLARK

November 7, 2006

First Visit Time: _____

Checklist:

- Time & Date Zero Tape was Created _____
- Number of Terminals Opened matches the number of Terminals in the Polling Room
- OPENED Times and Dates are reasonable and Dates are accurate & no units show a closed Time or Date
- PRECINCT: displays the appropriate precinct
- All races and contests show ZERO
- ADA unit has been opened and is on a table ready for use
- Cell phone has been turned on and is ready to use
- All iVoironics are plugged in and have been propped up on their stands

Explain any opening problems: _____

Visit Time: 0905 TROUBLE P.E.P. RED. Check here if there was nothing to report

• TROUBLE w/ 1 IVO. TOUCH PROBLEM
4 VOTERS - 4 PROBLEMS - 100%

Visit Time: 1115 "POWER PROBLEM" TEXT MSG. Check here if there was nothing to report

IVO NON-RESPONSIVE. POWER (120VAC) - OK. POWER, LO VOLTAGE OK.
REPLACED IVO BATTERY - IVO OK.

Visit Time: _____ Check here if there was nothing to report

Visit Time: _____ Check here if there was nothing to report

3039

ZONE TECH LOG SHEET

PRECINCT 87

Tech's Name: Brian Overton

November 7, 2006

First Visit Time: 7:05

Checklist:

- Time & Date Zero Tape was Created 6:35
- Number of Terminals Opened matches the number of Terminals in the Polling Room
- OPENED Times and Dates are reasonable and Dates are accurate & no units show a closed Time or Date
- PRECINCT: displays the appropriate precinct
- All races and contests show ZERO
- ADA unit has been opened and is on a table ready for use
- Cell phone has been turned on and is ready to use
- All iVotronics are plugged in and have been propped up on their stands

Explain any opening problems: Looks Good!!

Visit Time: 11:30 Ivo, which other tech reset was freezing. When I arrived it was working fine. Clerk said it wasn't propped up on legs a few minutes prior, which is probably why it froze. Clerk cancelled vote and will continue to use machine. Will contact me if another problem occurs.

Visit Time: 9:00 Lid was down on same IVO-Prozet. Then on Prozet. Took out of circulation.

Visit Time: _____ Check here if there was nothing to report

Visit Time: _____ Check here if there was nothing to report

3040

ZONE TECH LOG SHEET

PRECINCT 89

Tech's Name: M. BAUMANN

November 7, 2006

First Visit Time: _____ *CLERK = MARILYN*

Checklist:

- Time & Date Zero Tape was Created _____
- Number of Terminals Opened matches the number of Terminals in the Polling Room
- OPENED Times and Dates are reasonable and Dates are accurate & no units show a closed Time or Date
- PRECINCT displays the appropriate precinct
- All races and contests show ZERO
- ADA unit has been opened and is on a table ready for use
- Cell phone has been turned on and is ready to use
- All iVotronics are plugged in and have been propped up on their stands

Explain any opening problems: _____

Visit Time: 9:50 AM *RESET 1 VOTRONICS MACHINE # 0118359* Check here if there was nothing to report
REPLACED SEAL # 001130 W/ SEAL # 000644

Visit Time: 12:20 PM *CLERK REPORTS NO # 0118359* Check here if there was nothing to report
IS STILL RECALIBRANT. ELECTED NOT TO USE IT UNLESS ABSOLUTELY NECESSARY.

Visit Time: _____ Check here if there was nothing to report

Visit Time: _____ Check here if there was nothing to report

3041

ZONE TECH LOG SHEET

PRECINCT 98

Tech's Name: DAVID FOSS

November 7, 2006

DON MARSHALL
941-102-0262

First Visit Time: 8:55

Checklist:

- Time & Date Zero Tape was Created 7:13:43 11-7-2006
- Number of Terminals Opened matches the number of Terminals in the Polling Room
- OPENED Times and Dates are reasonable and Dates are accurate & no units show a closed Time or Date
- PRECINCT: displays the appropriate precinct
- All races and contests show ZERO
- ADA unit has been opened and is on a table ready for use
- Cell phone has been turned on and is ready to use
- All Votronics are plugged in and have been propped up on their stands

Explain any opening problems: _____

Visit Time: 8:55 V115932 TOUCHSCREEN WAS NOT WORKING EFFICIENTLY. WAS REPORTED. Check here if there was nothing to report

Visit Time: 2:38 Check here if there was nothing to report

Visit Time: 4:20 Check here if there was nothing to report

Visit Time: 5:50 Check here if there was nothing to report

SA-342

3042

ZONE TECH LOG SHEET

PRECINCT 98

Tech's Name: Polly Clarke November 7, 2006
BEE RIDGE PARK - LOCKWOOD / WILKINSON

DON
CLARKE

First Visit Time: 9:35

Checklist:

- Time & Date Zero Tape was Created 7:13 11/07/06
- Number of Terminals Opened matches the number of Terminals in the Polling Room 12
- OPENED Times and Dates are reasonable and Dates are accurate & no units show a closed Time or Date
- PRECINCT: displays the appropriate precinct
- All races and contests show ZERO
- ADA unit has been opened and is on a table ready for use
- Cell phone has been turned on and is ready to use 700-0262
- All iVotronics are plugged in and have been propped up on their stands

Explain any opening problems: V0115832-C TOUCH SCREEN NOT RESPONDING WELL
UNIT NOT BEING USED
ADA MACHINE NOT PLUGGED IN. RUNNING ON BATTERY ONLY

Visit Time: 3:00 NO NEW EQUIPMENT Check here if there was nothing to report
PROBLEMS

Visit Time: 7:30 HAVE CALLED CLOSED OK Check here if there was nothing to report

Visit Time: _____ Check here if there was nothing to report

Visit Time: _____ Check here if there was nothing to report

3043

ZONE TECH LOG SHEET

PRECINCT 99

Tech's Name: J. Wingler

November 7, 2006

First Visit Time: 7:45

Checklist:

- Time & Date Zero Tape was Created
- Number of Terminals Opened matches the number of Terminals in the Polling Room
- OPENED Times and Dates are reasonable and Dates are accurate & no units show a closed Time or Date
- PRECINCT: displays the appropriate precinct
- All races and contests show ZERO
- ADA unit has been opened and is on a table ready for use
- Cell phone has been turned on and is ready to use
- All iVotronics are plugged in and have been propped up on their stands

Explain any opening problems: Could not print zero tape - Printer n.g.
(#201128) SCRN: 10048043 Activated new printer
to John McKenzie

Visit Time: 10:00 Per text message / Tracy: Check here if there was nothing to report
 ADA machine difficult to use. Called up ballot
 ran through process w/ Clerk Screen requires
 firm/extended touch to record vote* Contacted
 Tracy to ask about replacement ADA unit.

Visit Time: 12:30 * Difficult for challenged individuals Check here if there was nothing to report

Visit Time: 1:00 New ADA machine delivered Check here if there was nothing to report
 ADA * removed from service
 ADA * activated
 Printed/posted new zero tape

Visit Time: _____ Slow response screen See 10am report Check here if there was nothing to report

3044

Pct. 99

Visit Time: _____

Check here if there was nothing to report

Visit Time: _____

Check here if there was nothing to report

Visit Time: _____

Check here if there was nothing to report

Visit Time: _____

Check here if there was nothing to report

Visit Time: _____

Check here if there was nothing to report

Visit Time: _____

Check here if there was nothing to report

SA-345

3045

ZONE TECH LOG SHEET

PRECINCT 99

Tech's Name: Jon McKenzie November 7, 2006

First Visit Time: 7:13

Checklist:

- Time & Date Zero Tape was Created 7:50 11/7
- Number of Terminals Opened matches the number of Terminals in the Polling Room
- OPENED Times and Dates are reasonable and Dates are accurate & no units show a closed Time or Date
- PRECINCT: displays the appropriate precinct
- All races and contests show ZERO
- ADA unit has been opened and is on a table ready for use
- Cell phone has been turned on and is ready to use
- All IVotronics are plugged in and have been propped up on their stands

Explain any opening problems: Printer malfunction (orange light) would not print. brought in back up printer from other ZoneTech

Visit Time: 10:43 got email message on county phone at 10:34 (delayed) to look at slow ADA machine works a little slow but OK

Visit Time: 1:32 Donna Winkler was here swapping out ADA machine. Already brought up new machine + printed zero tape. I assisted in closing "bad" machine. copy of voucher in pouch.

Visit Time: 6:50

closed ok

Visit Time: _____

3046

ZONE TECH LOG SHEET

PRECINCT 101

Tech's Name: DAVID FOSS

November 7, 2006

RAY McANALLY

First Visit Time: 9:50

941-702-9406

Checklist:

- Time & Date Zero Tape was Created 7:06:51
- Number of Terminals Opened matches the number of Terminals in the Polling Room
- OPENED Times and Dates are reasonable and Dates are accurate & no units show a closed Time or Date
- PRECINCT: displays the appropriate precinct
- All races and contests show ZERO
- ADA unit has been opened and is on a table ready for use
- Cell phone has been turned on and is ready to use
- All Intronics are plugged in and have been propped up on their stands

Explain any opening problems:

Visit Time: 9:50 V106735 WAS NOT BEING USED. CHECK HERE IF THERE WAS NOTHING TO REPORT
DOE TO DIFFICULTY WITH THE TOUCHSCREEN. IT WAS OPENED AND SOME VOTES RECORDED.

Visit Time: 1:05 V0115748 - SCREEN BEGAN FLASHING SHOWING AN INTERFERENCE PATTERN AND VOTER WAS UNABLE TO CAST VOTE, SCREEN FROZE ON REVIEW SCREEN. UNPLUGGED FROM POWER AND SCREEN WENT DEAD. REPLUGGED POWER AND NORMAL OPERATION RESUMED. ORIGINAL VOTER VOTED ANOTHER MACHINE. TWO MORE VOTERS CAST BALLOTS WITH NO PROBLEM. UNPLUGGED AND REMOVED IVD. WILL R & R BATTERY. CHECK POWER TAKE BALLOTS. PER SOWAL RECOMMEND.
R & R BATTERY @ 1:35 PM

Visit Time: 5:05 Check here if there was nothing to report

Visit Time: 6:25 Check here if there was nothing to report

3047

ZONE TECH LOG SHEET

PRECINCT 108

Tech's Name: CHRIS BURRUS

November 7, 2006

First Visit Time: 7:45 AM

Checklist:

- Time & Date Zero Tape was Created 6:33 AM
- Number of Terminals Opened matches the number of Terminals in the Polling Room
- OPENED Times and Dates are reasonable and Dates are accurate & no units show a closed Time or Date
- PRECINCT: displays the appropriate precinct
- All races and contests show ZERO
- ADA unit has been opened and is on a table ready for use
- Cell phone has been turned on and is ready to use
- All iVotronics are plugged in and have been propped up on their stands

Explain any opening problems: _____

Visit Time: 11:05 AM Check here if there was nothing to report

NON-SENSITIVE VO105061-B
MACHINE ↑
REMOVED FROM SERVICE - PER JOHN KENNEDY
- CLOSED EARLY -

Visit Time: _____ Check here if there was nothing to report

Visit Time: _____ Check here if there was nothing to report

Visit Time: _____ Check here if there was nothing to report

3048

ZONE TECH LOG SHEET

PRECINCT 116

Tech's Name: CHRIS BURRUS

November 7, 2006

First Visit Time: 6:45 AM

Checklist:

- Time & Date Zero Tape was Created 6:44
- Number of Terminals Opened matches the number of Terminals in the Polling Room
- OPENED Times and Dates are reasonable and Dates are accurate & no units show a closed Time or Date
- PRECINCT: displays the appropriate precinct
- All races and contests show ZERO
- ADA unit has been opened and is on a table ready for use
- Cell phone has been turned on and is ready to use
- All iVotronics are plugged in and have been propped up on their stands

Explain any opening problems: _____

Visit Time: 9:40 AM

Check here if there was nothing to report

MACHINE VO106454-9 SLOW RESPONSE TO VOTE
~~NO VOTE~~ ~~NO VOTE~~

ONE MACHINE UNPLUGGED - I PLUGGED IT BACK IN - NO PROBLEM

Visit Time: 9:20 pm

Check here if there was nothing to report

Visit Time: 6:35 p.m

Check here if there was nothing to report

Visit Time: 7:30 pm

Check here if there was nothing to report

POLL WATCHER
UNPLEASANT
JEANNE WONG
WAS VERY UNPLEASANT WITH ME AND STAFF CURSING AT
POLL WORKERS. (SARV)

3049

ZONE TECH LOG SHEET

PRECINCT 124

Tech's Name: Seth Newhall

November 7, 2006

First Visit Time: _____

Checklist:

- Time & Date Zero Tape was Created _____
- Number of Terminals Opened matches the number of Terminals in the Polling Room
- OPENED Times and Dates are reasonable and Dates are accurate & no units show a closed Time or Date
- PRECINCT: displays the appropriate precinct
- All races and contests show ZERO
- ADA unit has been opened and is on a table ready for use
- Cell phone has been turned on and is ready to use
- All Voltronics are plugged in and have been propped up on their stands

Explain any opening problems: _____

Visit Time: 9:49 J-0106351-B Check here if there was nothing to report

Slow screen response

closed electronic (4) votes on unit. removed

from line. PE calibrated. Two BUI issue still

exists.

Visit Time: _____ Check here if there was nothing to report

Visit Time: _____ Check here if there was nothing to report

Visit Time: _____ Check here if there was nothing to report

3050

ZONE TECH LOG SHEET

PRECINCT 124

Tech's Name: JERRY DENNIS

November 7, 2006

First Visit Time: 5:55 AM

Checklist:

- Time & Date Zero Tape was Created 6:30 AM - 11/7/06
- Number of Terminals Opened matches the number of Terminals in the Polling Room
- OPENED Times and Dates are reasonable and Dates are accurate & no units show a closed Time or Date
- PRECINCT: displays the appropriate precinct
- All races and contests show ZERO
- ADA unit has been opened and is on a table ready for use
- Cell phone has been turned on and is ready to use
- All IVtronics are plugged in and have been propped up on their stands

Explain any opening problems: ~~Problems~~ As requested the Precinct assigned 2 extra large dividers which helped greatly to mark the path for voters around to the back of the church. Need to always provide these extra signs.

Visit Time: 7:10 AM Check here if there was nothing to report

One machine (S/AV106357) no requiring excess pressure on all screens to activate - used my pencil instead (need to go buy some pencils) when decided to take machine out of commission instead

Visit Time: 7:38 Check here if there was nothing to report

Observed printing of Totals Tapes

Visit Time: _____ Check here if there was nothing to report

Visit Time: _____ Check here if there was nothing to report

3051

Tab 20

3052

COFFEY & WRIGHT, L.L.P.

GRAND BAY PLAZA, PENTHOUSE 2B
2665 SOUTH BAYSHORE DRIVE
MIAMI, FLORIDA 33133

KENDALL COFFEY

TELEPHONE: 305/857-9797
TELECOPIER: 305/859-9919
e-mail: kcoffey@coffeywright.com

November 29, 2006

Peter Antonacci, Esq.
Allen C. Winsor, Esq.
Gray Robinson, P.A.
301 So. Bronough Street
Suite 600
P. O. Box 11189
Tallahassee, FL 32301

Dear Mr. Antonacci:

We very much appreciate the courtesy that the Division of Elections staff exhibited to our campaign's representatives at the first phase of the parallel-testing portion of the State's audit of Sarasota County's electronic voting machines on Tuesday. The test, however, was infected by several serious errors that we would like to call to your attention, so that they can be cured before the second phase of the testing commences on Friday morning. Unless all of these defects are remedied, the validity of the State's audit, and the public's confidence in that audit, will be deeply undermined.

As you know, we have previously raised a broad range of issues about the entirety of the audit, including the parallel-testing portion. While those issues continue to concern us, this letter focuses on specific points crystallized by our observation of yesterday's parallel-testing exercise. As we all recognize, the purpose of parallel testing is to simulate Election Day conditions as closely as possible. In several specific respects, the test conducted yesterday did not do so as effectively as possible.

Unrepresentative "Mock Voters"

As our experts initially discussed with Mr. David Drury, the leader of the audit and the Chief of the Division's Bureau of Voting Systems Certification, nearly two weeks ago, on Wednesday, November 15, pretending that Division of Elections employees can serve as "representative" voters in a simulated election is simply wrong. Yesterday morning, Mr. Drury explained that all of the mock "voters" were "volunteers" recruited from the Election Division's Bureau of Election Records and Bureau of Voting Registration Services. This is unacceptable for at least four reasons.

First, each of the testers is employed by, and accountable to, the very state agency that appears to have certified a defective voting system. A clearer conflict of interest could hardly be imagined.

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Second, the testers, as full-time employees of the Division of Elections who spend upwards of 40 hours each week working to iron out problems in our electoral system, are all hyper-sensitized to the high-profile issue of touchscreen malfunction that has embroiled Florida and the Thirteenth District for the last three weeks. Therefore, consciously or unconsciously, they are inclined to try to cast their test ballots very carefully, especially when voting for the Representative in Congress. As you well know, a key to any experimental design involving human subjects is that the subjects not know in advance precisely what the test is designed to reveal. Indeed, in one of the most notorious software bugs ever found in an electronic voting system — the “sliding-finger bug” that California testers discovered last year in the Diebold TSx system — the bug was uncovered only because one voter had a tendency to very slightly drag her finger across the touchscreen, which in turn triggered a software bug that repeatedly caused a sizeable fraction of the machines to crash. The fact that the voter did not fully know what the machines were being tested for was critical to her maintaining a natural finger action that led to discovery of the bug.

Third, current state employees cannot adequately represent the Sarasota County electorate because by definition they include no retirees. As you know, Florida’s Thirteenth Congressional District generally, and Sarasota County in particular, contains a very significant senior population, including many voters who have passed the state retirement age.

Fourth, Mr. Drury explained that the state auditors did not try to ensure demographic balance, or representativeness, among the testers. Rather, they had merely “asked for volunteers” and apparently accepted whoever took up their offer.

A proper, scientifically valid test should include a much broader cross-selection of the population (including retirees and seniors), should exclude anyone employed by a state agency or by a corporation involved in election administration, and should not draw its testers from Sarasota County, where finding mock voters unfamiliar with the precise subject of these tests would likely be impossible.

Misplacement of the Touchscreens

On Election Day (and during early voting), the touchscreens were horizontal or nearly horizontal. But during Tuesday’s test, they were vertical. So the test failed to recreate the conditions that were experienced by actual voters on Election Day. Altering the screen angle is potentially a very significant alteration, as it largely, if not entirely, prevents a mock voter from simultaneously touching two parts of the screen and it greatly reduces the chance that the voter touches the screen at a point slightly off-center from his or her intended target spot.

COFFEY & WRIGHT, L.L.P.

GRAND BAY PLAZA, PENTHOUSE 2B • 2665 SOUTH BAYSHORE DRIVE
MIAMI, FLORIDA 33133
TEL: 305/857-9797 • FAX: 305/859-9919

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When, as in the real election, the screen is horizontal, the actual voter's wrist or watchband or bracelet or cuff or thumb or other hand is likely at some point to rest on the touchscreen while his or her finger is attempting to select a candidate or page through the ballot or press the "VOTE" button above the screen. Just as a computer is more likely to crash when several keys on a keyboard are simultaneously depressed (or when one inadvertently hits the keyboard and the mouse simultaneously), a touchscreen voting machine is most likely to go awry when the screen is being touched in more than one spot simultaneously.

Furthermore, when the screen is horizontal, a voter — especially one who is relatively short — is likely not to touch the screen precisely where intended because the screen is, effectively, sloped away from the voter. This is especially true for ballot lines near the top of the screen, such as the Thirteenth District congressional ballot line. By contrast, when the screen is hanging perfectly vertically, at roughly the height of the voter's shoulders and head, the voter touches the screen at a clean 90-degree angle and is much more likely to press precisely where intended, rather than outside of the response zone in the screen for recording a vote.

Yet another problem with yesterday's test is that, although one of the five machines was a machine set up for persons with disabilities (sometimes known as an "ADA machine"), it was never tested using the large-font option for persons with visual disabilities. That also needlessly rendered the test unrepresentative of actual Election Day activities.

Of course, there is no guarantee that correcting these flaws would trigger the machine malfunctions that Sarasota County voters witnessed on Election Day. But there is certainly no reason for auditors not to try to simulate actual Election Day conditions. Having the mock voters vote on horizontal or near-horizontal screens might require putting the video cameras on taller tripods; but otherwise, we see no logistical issues that would prevent Friday's test from using this more realistic simulation of actual Election Day conditions.

Mistakes in the Scripts and "Vote Patterns"

During Tuesday's test, the mock voters were instructed to follow "test scripts" that included several "vote patterns," which essentially are series of screen touches in which the mock voters move from screen to screen, either changing or verifying their selections. The vote patterns used on Tuesday were inadequate, for at least three reasons.

First, according to the audit plan that the Division posted on its Web site on Monday, the scripts included as many as 10 distinct patterns for changing or verifying mock voters' congressional ballots, but no scripted patterns for voters to change or verify their selections for other offices such as U.S. Senator, Governor, or other statewide, countywide, or local offices. To

COFFEY & WRIGHT, L.L.P.

GRAND BAY PLAZA, PENTHOUSE 2B • 2665 SOUTH BAYSHORE DRIVE
MIAMI, FLORIDA 33133
TEL: 305/857-9797 • FAX: 305/859-9919

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assume that voters used the summary screen and the “previous page” and “next page” commands to change or verify their selections for only one of the more than two dozen contests on the ballot is patently unrealistic. The “vote patterns” therefore should be applied, in reasonable numbers, to various contests on the ballot, including — but certainly not limited to — the congressional contest. Furthermore, applying the various vote patterns to different contests will help determine whether the machines were indeed more likely to malfunction when recording congressional votes than when recording votes for other offices on the ballot.

Second, as our experts explained to Mr. Drury at their November 15 meeting, the vote patterns — the movements back and forth between different screens to change or verify selections — should be executed at varying speeds. That was not done in Tuesday’s test. As anyone who regularly uses a computer well knows, the chance of a computer “freezing” or otherwise malfunctioning often is related to the speed at which one uses the keyboard and mouse. Slowly and methodically scrolling through each screen in a voting pattern, as the testers did yesterday, only renders the test less realistic and less likely to trigger the actual computer errors that the machines exhibited on Election Day. Likewise, the bizarrely long pauses that most of the test voters took after selecting all their candidates and before hitting the “VOTE” button — pauses that were caused by starting the vote-selection process too far in advance of the pre-established times for pressing the “VOTE” button — needlessly rendered yesterday’s test unrealistic, as well.

Third, it appears that the scripts themselves contained a blatant error. According to the plan the Division posted on its Web site on Monday, the test voters would undertake any of 10 different vote patterns (in the congressional race only). But due to what appears to be a typographical error, one of the intended patterns was omitted and replaced by a nonsensical pattern. In the posted audit plan, “Vote Pattern J-4” reads as follows (emphasis added):

- * Select *Jennings* the first time the race is presented to the voter.
- * Return to the race directly from the review screen after all other selections are made and *change final selection to Jennings*.
- * Verify Jennings is the selection indicated on the review screen prior to casting the ballot.

Obviously, if “Jennings” was selected initially (as indicated in the first bullet above), then it makes no sense (in the second bullet) to “change [the] final selection to Jennings.” The first line clearly contained an error: It should have read “Select Buchanan the first time the race is presented to the voter.” Although our expert Ms. Jocelyn Whitney called Mr. Drury’s attention to this error before the mock voting commenced at 7:00 a.m., we never received any assurance that the problem had been cleared up. Nor did we see any sign that the scripts had been corrected

COFFEY & WRIGHT, L.L.P.
GRAND BAY PLAZA, PENTHOUSE 2B • 2665 SOUTH BAYSHORE DRIVE
MIAMI, FLORIDA 33133
TEL: 305/857-9797 • FAX: 305/859-9919

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to remove this flaw, although it was impossible for our observer to read the scripts from any of the chairs reserved for the test observers. It was not until 2:02 p.m. that one of the testers finally said that she didn't understand the instructions and sought guidance. In short, it appears that the actual conduct of the test, at least until 2:02 p.m. on Tuesday (and perhaps beyond), was not even in compliance with the Division of Elections' own written plan. Obviously, if "Vote Pattern J-4" is to be used in Friday's test, this defect must first be remedied.

Machine Breakdown During the Test

During the test, it appeared that the iVotronic machine being taped by Camera #4 — the Precinct 113 machine, with serial number V0106866 — repeatedly malfunctioned. As far as we are aware, the problems commenced at about 12:18 and continued for some time thereafter, as the screen repeatedly exhibited an odd pattern of lines. Not too long before 2:00 in the afternoon, the auditors finally put a PEB into the machine and left it there for at least 15 minutes. Given the irregular nature of this "on the fly" fix, we would like the Division of Elections to explain what happened, why it was fixed through this particular method, and how (if at all) the problem and the attempted fix were recorded on a discrepancy log (again, we saw no such logs at any time during the test).

Inadequate Videotaping

As this letter is being written, we have not yet received DVDs of Tuesday's test. We therefore request that these be delivered to all interested parties, including all parties to the election contests that have been filed in state court in Tallahassee, as soon as possible — that is, in less than the previously announced 48 hours.

But we also are concerned by the failure to videotape the critically important activities immediately preceding yesterday's mock voting. On Friday, when the test will use iVotronic machines and PEBs (personalized electronic ballots) that actually were deployed on Election Day, it will be all the more important to capture on videotape the pre-mock-voting activity. Specifically, the videotape should memorialize the chain of custody for each machine, from the time that the seal on each machine is broken, through the entire setup process, right up to the moment when the testers begin casting the test votes. Only by documenting these early steps, as well as the mock voting itself, on videotape can the test win the public's confidence.

Inadequate Record-Keeping

Yesterday, as soon as the test voting was complete, the auditors used the PEBs to extract the total votes for each candidate and the total undervotes in each contest. In doing so, they

COFFEY & WRIGHT, L.L.P.
GRAND BAY PLAZA, PENTHOUSE 2B • 2665 SOUTH BAYSHORE DRIVE
MIAMI, FLORIDA 33133
TEL: 305/857-9797 • FAX: 305/859-9919

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skipped over an essential step, which would be to immediately download from each individual machine the event logs and ballot-image logs for that day's test. Although these logs remain recoverable on subsequent days, to increase public confidence and to promptly provide the interested parties with all relevant data, these logs should be printed, machine by machine, immediately after the close of test voting — for example, on Friday evening. These logs would show, for example, how each voter's votes were ultimately recorded and whether the machines had been "recalibrated" between the actual election and the mock election. Needless to say, "recalibrating" any of the Election Day machines would make a mockery out of any otherwise valid testing protocol.

Reconciliation

As this letter is being written, the reconciliation process, which is intended to locate and factor out any "human errors" in the test, is still underway. But we believe it is important that the reconciliation be a *full* reconciliation that verifies whether the ballot-image logs (mentioned above) in fact match the scripts, for each voter and for each line of the ballot, vote by vote — not just for the races where the Division of Elections initially found "variances" between the expected totals and the recorded totals. Otherwise, for example, machine errors that converted five Jennings votes to undervotes and that also converted five intentional undervotes to Jennings votes would go undiscovered, since the recorded totals for each candidate and for the undervotes would appear to be "correct."

To troubleshoot the reconciliation process, we hereby request a complete copy of all written records relevant to Tuesday's parallel test. Specifically, we would like to receive, as public records, among other things, as soon as possible, copies of all scripts (with any handwritten notations made during or after the test), zero tapes, tally tapes, event logs, ballot-image logs, and discrepancy logs (though it appeared that none of the auditors had been instructed to keep discrepancy logs, contrary to normal procedure in a well-run audit).

Using the Wrong PEBs

Just as Friday's test, unlike Tuesday's, will use iVotronic voting machines that actually were deployed on Election Day, it also should use PEBs that actually were deployed on Election Day. And the PEBs used should be the same ones that were used most heavily in those specific precincts and on those specific iVotronic machines. Again, the point is simple: to replicate actual Election Day conditions to the greatest extent possible.

COFFEY & WRIGHT, L.L.P.

GRAND BAY PLAZA, PENTHOUSE 2B • 2665 SOUTH BAYSHORE DRIVE
MIAMI, FLORIDA 33133
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Using Too Few Machines

The State's audit plan simply does not use enough machines to provide a reliable sample. As our experts discussed with Mr. Drury on November 15, given the number of machines used on Election Day and in early voting — nearly 1,500 in total — it would be sensible to test at least 20 deployed machines. In the interest of speed, that number might be reduced to 10, as our experts also explained to Mr. Drury. When we were informed that the State would refuse to test 10 actual Election Day machines, we provided, on request, a list of 6 precincts that would serve as particularly good sources of high-undervote machines. The State's plan, however, will test only 5 machines actually deployed on Election Day, and only 4 of those will be tested using actual voter scripts derived from the machine's own ballot-image logs. This is simply too small a sample to be reliable.

Ironically, this problem is compounded by the State's commendable decision to choose, within each precinct, the machine with the highest congressional undervote rate. Choosing machines that recorded congressional undervotes for between one-quarter and one-half of the actual Election Day voters severely diminishes the already too-small pool of Buchanan votes and Jennings votes that might be converted into undervotes through machine error. Indeed, the four machines that the State is planning to test on Friday with scripts derived from those machines' ballot-image logs recorded only 157 votes for Jennings or Buchanan. They thus represent less than one-sixth of one percent of all Jennings and Buchanan votes recorded by Sarasota County's iVotronic system. That is far too small a sample size for a thorough and exacting audit.

More machines should be tested. But as our experts proposed to Mr. Drury, one way to at least somewhat ameliorate this problem would be to write the scripts so as to replace most (but of course not all) of the supposed congressional undervotes with Jennings votes or Buchanan votes. That would more closely simulate what actually happened on November 7, when voters attempted to cast ballots for Jennings or Buchanan but those ballots were recorded as undervotes by the iVotronic system.

By refusing to follow this procedure, in essence the State has prejudged the verdict on the very machines it certified. The State continues to treat all recorded undervotes as if they were intentional undervotes. Tellingly, the State's posted audit plan proclaims, incorrectly, that "[t]he ballot image file contains the voter selections as they appeared on the review screen at the time the voter pressed the 'VOTE' button." If that were true, much of this entire controversy would disappear. Indeed, one of the most central questions the test should have been designed to answer is whether in fact the machines (on their ballot-image logs and elsewhere) properly recorded "the voter selections as they appeared on the review screen at the time the voter pressed

COFFEY & WRIGHT, L.L.P.

GRAND BAY PLAZA, PENTHOUSE 2B • 2665 SOUTH BAYSHORE DRIVE
MIAMI, FLORIDA 33133

TEL: 305/857-9797 • FAX: 305/859-9919

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the 'VOTE' button." The State's willingness to assume an answer to this central question speaks volumes about the unscientific nature of the test, at least as conducted so far.

* * *

Again, we would like to reiterate our gratitude for the courtesy and patience that the Division's staff exhibited during yesterday's test. But we believe it is essential that each and every one of the flaws and defects identified in this letter should be rectified before Friday, so that the test of the actual Election Day machines can at least begin to approach the level of professionalism, reliability, and accuracy that the people of Florida deserve from their government.

Sincerely,


Kendall Coffey

KC:ssb

cc: Via e-mail:
Ronald A. Labasky, Esq.
Lowell Finley, Esq.
Hayden R. Dempsey, Esq.
Glenn T. Burhans, Jr., Esq.
Muslima Lewis, Esq.
Randall C. Marshall, Esq.
Rebecca Harrison Steele, Esq.
Zeina N. Salam, Esq.
Elliot M. Minberg, Esq.
Judith E. Schaeffer, Esq.
Reginald J. Mitchell, Esq.
Cindy A. Cohn, Esq.
Matthew J. Zimmerman, Esq.

COFFEY & WRIGHT, L.L.P.

GRAND BAY PLAZA, PENTHOUSE 2B • 2665 SOUTH BAYSHORE DRIVE
MIAMI, FLORIDA 33133

TEL: 305/857-9797 • FAX: 305/859-9919

SA-359

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Tab 21

IN THE CIRCUIT COURT FOR THE SECOND JUDICIAL CIRCUIT
IN AND FOR LEON COUNTY, FLORIDA
CIVIL DIVISION

CHRISTINE JENNINGS, nominee of the
Democratic Party for Representative in Congress
From the State of Florida's Thirteenth Congressional
District,

Plaintiff,

v.

Case No: 2006 CA 2973

ELECTIONS CANVASSING COMMISSION OF
THE STATE OF FLORIDA, *et al.*,

Defendants.

and

ELLEN FEDDER, *et al.*,

Plaintiffs,

v.

Case No: 2006 CA 2996

TOM GALLAGHER, *et al.*,

Defendants.

CONGRESSMAN-ELECT BUCHANAN'S RESPONSE TO PLAINTIFF
JENNINGS' FIRST REQUEST FOR THE PRODUCTION OF DOCUMENTS

Defendant, Vern Buchanan, hereby responds to Plaintiff Jennings' First Request
for Production Directed to Defendant Vern Buchanan as follows:

GENERAL OBJECTIONS

Buchanan objects to each request for production to the extent that it solicits
responses which would violate the attorney client and/or work product privileges.

RESPONSES

1. All documents pertaining to any communication submitted to or otherwise received by you from voters commenting on, complaining about, or otherwise describing the experience of voting in the November 2006 general election (including early voting).

RESPONSE: See BUCHANAN 000002-000023, and BUCHANAN 000025-000035, served with this Response.

2. All documents generated or maintained by you pertaining to voters' experiences in the November 2006 general election (including early voting), including but not limited to incident report forms, poll watcher reports, affidavits, or other forms or documents contemporaneously maintained by Defendant during the November 2006 general election period (including early voting).

RESPONSE: See BUCHANAN 000001, BUCHANAN 000023-000024, and BUCHANAN 000036-000085, served with this Response.

3. All documents pertaining to communications between you and the Sarasota County Supervisor of Elections and/or her staff, agents, or contractors between and including the dates of October 23, 2006 and November 7, 2006.

RESPONSE: No such documents exist.

4. All documents relied upon or otherwise pertaining to your answers to Plaintiff Jennings' First Set of Request for Admission and First Set of Interrogatories directed to you.

RESPONSE: See BUCHANAN 000001-000085, served with this Response.

5. All documents you intend to introduce into evidence in the trial in this matter.

RESPONSE: Congressman-Elect Buchanan has not yet determined which documents he intends to introduce into evidence at trial, but will comply with any pre-trial disclosure requirements set by the Court or agreed to by the parties. Notwithstanding, Congressman-Elect Buchanan may introduce evidence relating to the following categories of documents: (1) the State's certified election returns; (2) the State's certification of the iVotronic System; (3) the pre-election logic and accuracy testing of the iVotronic System conducted by Sarasota County; and (4) the State's audit of the iVotronic System. This list is not all-inclusive and may be modified as the case progresses. Congressman-Elect Buchanan reserves the right to supplement or otherwise revise this Response.

3064

GREENBERG TRAUIG, P.A.

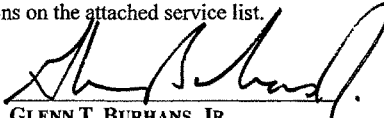
By: 

GLENN T. BURHANS, JR.
FL. BAR NO. 605867
HAYDEN DEMPSEY
FL. BAR NO. 14435
101 EAST COLLEGE AVENUE
TALLAHASSEE, FLORIDA 32301
TEL: (850) 222-6891
FAX: (850) 681-0207

Counsel for Vern Buchanan

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing *First Request for the Production of Documents to Christine Jennings* has been furnished by U.S. Mail and email this 2nd day of January, 2007 to the persons on the attached service list.


GLENN T. BURHANS, JR.

SERVICE LIST

Kendall Coffey

Coffey & Wright, L.L.P.
2665 South Bayshore Dr.
PH-2, Grand Bay Plaza
Miami, FL 33133
Telephone (305) 857-9797
Facsimile (305) 859-9919

Mark Herron

Messer, Caparello & Self, P.A.
2618 Centennial Place
Tallahassee, FL 32308
Telephone (850) 222-0720
Facsimile (850) 224-4359

Sam Hirsch

Jenner & Block
601 Thirteenth Street, N.W.
Suite 1200 South
Washington, DC 20006
Telephone (202) 637-6397
Facsimile (202) 639-6066

*Attorneys for Plaintiff
Christine Jennings*

Lowell Finley

Voter Action
1604 Solano Avenue
Berkeley, CA 94707
Telephone (510) 318-2248
Facsimile (415) 723-7141

Elliot M. Minberg

Judith E. Schaeffer

People for the American
Way Foundation
2000 M Street N.W. #400
Washington, DC 20036
Telephone (202) 467-4999
Facsimile (202) 293-2672

Reginald J. Mitchell

People for the American
Way Foundation
1550 Melvin Street
Tallahassee, FL 32301
Telephone (850) 877-0307
Facsimile (850) 402-1999

Muslima Lewis

Randall C. Marshall

Aziza Naa-Kaa Botchway
ACLU Foundation of Florida, Inc.
4500 Biscayne Boulevard
Suite 340
Miami, FL 33137-3227
Telephone (786) 273-2729
Facsimile (786) 363-1448

Rebecca Harrison Steel

Zeina N. Salam

ACLU Foundation of Florida, Inc.
West Central Florida Office
P.O. Box 18245
Tampa, FL 33679-8245
Telephone (813) 254-0925
Facsimile (813) 254-0926

Cindy A. Cohn

Matthew J. Zimmerman

Electronic Frontier Foundation
454 Shotwell Street
San Francisco, CA 94110
Telephone (415) 436-9333 x 127
Facsimile (415) 436-9993

Attorneys for Fedder Plaintiffs

Peter Antonacci
Allen C. Winsor
Gray Robinson, PA
301 South Bronough Street
Suite 600
Tallahassee, FL 32301
Telephone (850) 577-9090
Facsimile (850) 577-3311

*Attorneys for Defendants Elections
Canvassing Commission of the
State of Florida, Sue Cobb,
Secretary of State and Dawn K.
Roberts, Director, Division of Elections*

Ronald Labasky
Young Van Assenderp, PA
225 South Adams Street
Tallahassee, FL 32302
Telephone (850) 222-7206
Facsimile (850) 561-6834

Attorney for Defendant Kathy Dent

Frederick J. Elbrecht
Stephen E. DeMarsh
Office of the County Attorney
1660 Ringling Boulevard, Fl. 2
Sarasota, FL 34236-6870
Telephone (941) 861-7272
Facsimile (941) 861-7267

*Attorney for Defendants Sarasota
County Canvassing Board*

Richard T. Donelan, Jr.
Julie C. Miller
M. Drew Parker
Florida Dept. of Financial Services
200 East Gaines Street
Tallahassee, FL 32399-4247
Telephone (850) 413-3010

3068

Facsimile (850) 413-3029

*Attorneys for Tom Gallagher, Chief
Financial Officer, in his official capacity
as member of FECC*

Miguel A. DeGrandy
800 S. Douglas Road, Ste. 850
Coral Gables, FL 33134
Telephone (305) 444-7737
Facsimile (305) 374-8743

Harry O. Thomas
Radey Thomas Yon & Clark, P.A.
301 S. Bronough Street
Suite 200
Tallahassee, FL 32301-1722

*Attorneys for Election Systems &
Software, Inc.*

Memo

To: Ron Turner

From: Sally Tibbetts

Re: Communications with Supervisor of Elections and Voters

Date: 12/26/06

On November 8, 2006, campaign manager Ron Turner, Senior Advisor Tommy Hopper, Finance Director Amanda Kornegay, and I went to the Sarasota County Supervisor of Elections office to meet with Kathy Dent. Ms. Dent showed us a voting machine and walked us through the voter experience regarding machine operation, ballot layout, summary screen and vote. We also discussed the process through which the ballots would be recounted, the fact that the machines would print out a paper trail of recorded votes. We discussed the provisional ballots – why most of them are filled out, how many, when they would be counted, and added to the totals. We also discussed the overseas and military ballots – how many requested, how many had been returned, when they were due, when they would be counted and added to the total. She also shared with us some of her voter education efforts. At one point, we also spoke with one of Ms. Dent's employees regarding overseas and military ballots. I don't recall her name.

Regarding communications with voters, I recall on Election Day, during a sign wave that Mrs. Buchanan indicated that she had to hit the button more than once, I think she said three times -- to record her vote for Mr. Buchanan.

Also on Election Day, I asked campaign manager Ron Turner what his experience was on voting day. Specifically, I asked if he had been alerted to the placement of the race on the ballot and instructed to ask a poll worker for help if he needed assistance. He said he had. I asked because I vote in Manatee County and wanted confirmation that poll workers had done as instructed by Ms. Dent according to the newspaper as part of her effort to address any concern regarding early voting.

Any other communication was second hand -- although I have included an email that was sent to me regarding a voter experience in Venice, as well as newspaper clips I have kept regarding voter experience and two hand-outs I prepared quoting from those articles.

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Tab 22

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**Software Review and Security Analysis of the ES&S iVotronic
8.0.1.2 Voting Machine Firmware**

**Alec Yasinsac David Wagner Matt Bishop Ted Baker
Breno de Medeiros Gary Tyson Michael Shamos Mike Burmester**

**Security and Assurance in Information Technology Laboratory
Florida State University
Tallahassee, Florida**

February 23, 2007

**Final Report
For the Florida, Department of State**

SA-369

Software Review and Security Analysis of the ES&S iVotronic 8.0.1.2 Voting Machine Firmware

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Software Review and Security Analysis of the ES&S iVotronic 8.0.1.2 Voting Machine Firmware Final Report

1 Executive Summary

On December 15th, 2007 the Florida Department of State (FLDoS) commissioned an independent expert review of the ES&S iVotronic 8.0.1.2 firmware, as documented in the Statement of Work [1]. The team, led by Florida State University's (FSU) Security and Assurance in Information Technology (SAIT) Laboratory, was commissioned to conduct a static software code review as part of the state's audit of the 2007 Florida Congressional District 13 (CD13) election between candidates Vern Buchanan and Christine Jennings. This report is the culmination of that review.

1.1 Administrative Overview

This report describes the findings after an intensive analysis. The subject code was delivered to the review team and active preparations began the day the statement of work was signed. Outside code review members arrived in Tallahassee within three days and intensive code review commenced. A relatively large team, whose members were chosen because of their complementary skill sets, performed the review. SAIT Laboratory members bring strong theoretical and applied information security and electronic voting credentials. Two non-SAIT FSU Computer Science faculty members contribute computer architecture, compiler, and hardware interface expertise. Three outside members with distinguished records in secure software, voting system security, and code review round out the team.

1.2 The Analysis' Scope

Our investigation was limited to the scope specified in the Statement of Work:

The sole purpose of this project is to conduct a scientifically rigorous static software analysis on the iVotronics version 8.0.1.2 firmware source code to determine and identify flaws, vulnerabilities or anomalies, if any, that may have potentially caused, contributed or otherwise created the higher than expected under-vote rate in the District 13 Race. [1]

We focused our efforts on finding voting machine software problems that may have contributed to the CD13 undervote. We received all requested access to iVotronic terminals, PEBs, elections officials, ballot definitions, development engineers, and documentation. Where we needed additional hardware information to understand the software operation, we were given that data. We methodically examined undervote symptoms and followed the evidence to our findings. We considered possible causes hypothesized in the press and Internet sources, as well as others of our own design. We used standard software tools for manual code review and used static analysis tools to automate some of the analysis. In accordance with our plan, the team worked together throughout the intense code review cycle, cross-checking and corroborating hypotheses and findings. We documented our findings during the course of our work, and referred to our daily notes as we prepared this report. While there are no guarantees in this type of analysis of a system as complex as the iVotronic, we examined all aspects of the software that we believed may have contributed to the CD13 undervote.

1.3 Findings Summary

The team's unanimous opinion is that the iVotronic firmware, including faults that we identified, did not cause or contribute to the CD13 undervote. We base this opinion on hundreds of hours of manual code review complemented by automated static analysis and extensive study of the problem symptoms and the execution environment. We traced program execution from terminal

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initialization, through voter selection, to ballot image creation, to ballot image collection. We also investigated the possibility of asynchronous system faults not associated with any particular phase of voting. Our investigation provided no evidence that an iVotronic software malfunction caused or contributed to the CD13 undervote.

We do not claim that these results extend beyond the scope of our investigation. We emphasize that these findings are neither an endorsement nor a repudiation of the iVotronic, the larger class of Direct Recording Equipment (DRE) systems, nor any other form of electronic voting system. We specifically do not contend that these systems are correct or secure beyond the specific opinions that we give herein. This report is concerned solely with the question posed to us regarding the cause of the CD13 undervote in Sarasota County in November, 2006, and we do not claim that these results extend to a broader context.

2 Project Introduction and Background

2.1 Report Organization.

This document represents the total project report. It contains all of our pertinent findings and conclusions and the technical analysis that supports these conclusions. The document is written in two parts. The public part (Sections 1-12 and Appendices A, B, C, and D) constitutes the public report in its entirety; it contains our findings and the analysis to support these findings and is intended for public dissemination. In accordance with the terms of the Statement of Work, we have avoided revealing proprietary information in the public part of the report, and we are careful to avoid revealing information that would describe how to attack an election. The public report stands on its own and reflects the totality of our findings regarding the CD13 undervote.

The private part consists of Appendix E (Non-Pertinent Flaws), Appendix F (Analysis of Anomalous Audit Log Messages Regarding Voter PEBs), and Appendix G (Anonymization of cast vote records in the ES&S iVotronic 8.0.1.2 firmware). Appendices E and F are confidential, as required by the Statement of Work, because they contain vendor-proprietary information; also, Appendices E and G are confidential, as required by the Statement of Work, because they contain information about potential defects that could not have caused or contributed to the CD13 undervote and thus that are not relevant to this investigation. We are providing Appendices E, F and G to the state to allow the state to thoroughly evaluate the iVotronics and to pass on pertinent information to the vendor that will facilitate future improvements to these voting systems.

As indicated in the Statement of Work, we provided some details to the FLDoS and the vendor during the course of our work. We emphasize that the public part of this report contains everything we learned during this review that is relevant to the CD13 undervote.

The main document first gives background information about the undervote observed in the CD 13 race, the investigation, the voting system, and our assumptions. We follow these by describing our findings and conclusions.

2.2 The Software Review Team

2.2.1 The Senior Investigators

2.2.1.1 Ted Baker. Dr. Baker is a Florida State University Professor of Computer Science. For thirty years he has conducted systems-related research and taught hundreds of technical classes regarding machine interactions. He is an expert in device drivers and hardware-software issues.

2.2.1.2 Matt Bishop is a Professor of Computer Science at the University of California at Davis. He

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is an expert in secure software and electronic voting systems, having participated in several widely recognized electronic voting software systems code reviews. His computer security textbook, *Computer Security: Art and Science*, is the acknowledged benchmark against which all others related to this topic are measured.

2.2.1.3 Mike Burmester is an FSU Professor of Computer Science and a co-Director of (SAIT) Laboratory. He is a renowned expert in information security and cryptography, with over thirty year's research experience in computer security related issues.

2.2.1.4 Breno de Medeiros is a Florida State University Assistant Professor of Computer Science. He is an Information Security expert with extensive software experience.

2.2.1.5 Michael Shamos is Distinguished Career Professor of Computer Science at Carnegie Mellon University. He has performed over 115 electronic voting certification examinations for six states, including Pennsylvania and Texas. He frequently testifies before the US Congress and various state legislatures on electronic voting issues.

2.2.1.6 Gary Tyson is a Florida State University Associate Professor of Computer Science. He is an expert in computer architectures and compiler technology.

2.2.1.7 David Wagner is an Associate Professor of Computer Science at the University of California, Berkeley. Like Professor Bishop, he is an expert in secure software and electronic voting systems, having conducted several widely recognized electronic voting software code reviews.

2.2.1.8 Alec Yasinsac is a Florida State University Associate Professor of Computer Science, a co-Director of SAIT Laboratory, and is the lead Principal Investigator on this project.

2.2.1.9 The Statement of Work (SoW) listed Dr. Edward Felten of Princeton University as an initial team member. Dr. Felten made significant contributions to project planning and was invited to participate, but he ultimately did not join the full team.

2.2.2 Team Organization

2.2.2.1 **Internal Team Structure and Operation.** As detailed in the project plan, six team members (Baker, Bishop, de Medeiros, Tyson, Wagner, and Yasinsac) conducted hands-on code review. Two members (Burmester and Shamos) contributed to project plans, reviewed the process documents, and participated in report preparation. The final report reflects the team's cumulative and unanimous opinion.

2.2.2.2 External Communication and Coordination

2.2.2.2.1 Florida Department of State (FLDoS). As noted in the SoW, FLDoS was entitled to observe the code review process at their discretion; they chose to limit their interaction. FLDoS only interacted with the team at our invitation and they proved to be a valuable information resource, providing precinct reports, election configuration files, general election knowledge, and hardware demonstrations to support our analysis. Their support was consistently prompt and complete. The FLDoS placed no restrictions on our activities within the SoW.

2.2.2.2.2 Florida State University. FSU and SAIT Laboratory hosted the code review and provided invaluable analysis resources and administrative support beginning the first active SoW

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day, extending through the holiday periods (including while the University was officially closed for both the Christmas and New Year's holidays) and into the new year. The spaces were ideal for this type of review and the resources were excellent.

2.2.2.2.3 Election Systems & Software (ES&S). ES&S was an active and effective information resource for this team. Two ES&S iVotronic software developers with intimate knowledge of and experience with the firmware spent one and a half days answering questions and accelerating our understanding of the software structure and flow. We subsequently conversed with these developers by telephone several times.

Additionally, an ES&S hardware specialist met with the team to clarify information and confirm our observations of the hardware architecture and hardware-software interactions. We also had subsequent telephone conversations with other ES&S hardware engineers to answer follow-on questions.

When we sought technical detail, documentation, or clarification, ES&S responded promptly and comprehensively. For example, when we sought compiler information, they provided a listing of source code and the corresponding assembly language side-by-side. These interactions were undoubtedly an important contribution to the project that facilitated our work, accelerated our progress, and heightened confidence in our findings. The vendor offered to provide equipment and resources to allow us to construct proof of concept demonstrations of our hypothesis, but the team declined this invitation. We address specific vendor input and interactions throughout the report.

2.3 The Investigative Process

In accordance with our project plan, the investigation began with a short collaborative planning phase. The team met in the SAIT Laboratory and spent several days examining code, documentation, and symptomatic evidence to understand the problem and to formulate an investigative approach. The resulting plan relied on parallel investigation of reliability and security issues that may have caused or contributed to the CD13 undervote. The team composition provided a natural investigative partitioning. Professors Baker and Tyson focused on hardware interaction, low level software, and architectural issues. Professor Wagner focused on security considerations, Professor Bishop and Professor de Medeiros investigated software faults and security issues, and Professor Yasinsac investigated gap issues not covered by the natural team partitioning. Early in the process we produced an extensive list of scenarios that might have resulted in the observed undervote, and this list formed our investigation to systematically rule out each scenario.

Each code investigator took two complementary research approaches in their specialized area. Each investigator conducted unrestricted code examination. They each spent time analyzing code and following their instincts, with no external limits imposed upon them. This leveraged investigators' analytic strengths and offered the opportunity to reveal subtle or non-intuitive faults.

Additionally, investigators carefully and collaboratively examined evidence and Sarasota-specific symptoms within their areas. Investigators received data from Sarasota that defined the environment, triggered symptom analysis, and validated configuration assumptions. During our investigation, we reviewed problem logs produced on Election Day by Sarasota County poll workers. We also reviewed published studies, press reports, and court proceedings that aided our review. These symptoms led to many observations that constitute the bulk of our findings.

2.4 The CD13 Undervote Details

The CD13 undervote has been the subject of several lawsuits, news articles numbering in the triple digits, and uncounted blog commentaries. While this produced a mountain of information about the

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undervote, facts were elusive. We know that there are approximately 18,000 undervotes, which is more than 13% of the total CD13 vote and is three to ten times the average undervote in other races. There is no dispute that this undervote is abnormal and unexpected and that it cannot be explained solely by intentional undervoting.

The FSU team spent many hours investigating election related documents and information and documented many symptoms that might indicate possible causes. Among these, we noted that the abnormal undervote rate was present in both early and Election Day voting, with a higher undervote rate observed during early voting. The Sarasota Supervisor of Elections (SoE) responded to complaints from voters about problems voting in the CD13 race during early voting by asking poll workers to remind voters to review their ballots. The undervote subsequently diminished on Election Day, suggesting that raising heightened voter attention may have reduced the undervote rate. Precinct logs, in which poll workers make notes, show repeated entries that poll workers reminded voters to give special attention to the CD13 race.

Recorded voter complaints also offered information that contributed to the software analysis process. Precinct logs indicate that voters offered three classes of pertinent comments.

1. The voter selected a candidate in the CD13 race, but claimed that the selection did not appear on the summary page.
2. The voter did not notice the CD13 race at all until it was shown as an undervote on the summary page.
3. Many machines responded slowly (five seconds or more) or not at all, to voters' touches.

These three reported symptoms suggested many hypotheses regarding possible software faults. We investigated numerous other reported symptoms as well. For example, during our review of the Sarasota iVotronic event logs (audit logs), we noticed an anomalous event log entry containing the message "Invalid Vote PEB". We hypothesized causes for this event and traced through the code to find its cause, as detailed in our findings below. We similarly traced other symptoms that we discovered through review of evidence and records such as:

- Event logs
- Ballot image files
- Ballot definition files
- Polling place logs
- Newspaper articles
- Court documents, particularly expert reports
- Blog entries
- Standard software flaw guides
- Standard security flaw guides
- Independent Test Authority reports
- Other historical documents

During our work, we analyzed many hypotheses. These activities included exercising iVotronic terminals, testing personal hypotheses, judging touch and display properties, analyzing machine timing and performance characteristics, and confirming configuration assumptions. The team was given two demonstrations of the iVotronic machines, and several team members later had the chance to experiment with iVotronic equipment configured with the ballot style used in Sarasota

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County in November, 2006. We returned to the hardware several times to compare the machine behavior to our analysis of the source code.

2.5 Speculated Causes for the Undervote

Several papers have been written proposing theories about what may have happened in the CD13 race. We present a few representative theories in this subsection. They are not exhaustive, nor are they mutually exclusive. It is theoretically possible that all of these factors contributed, that none of them did, or that any combination of them did.

2.5.1 Machine or Software Malfunction. This is a general category that includes total machine failure; machine problems that created difficulty for voters; and subtle, even undetectable faults that may have contributed to the undervote. Some political and computer science experts have raised the possibility that a software fault or intentional software intrusion may have caused or contributed to the undervote. For instance, computer security and electronic voting expert Dr. Dan Wallach identified a number of hypotheses regarding potential software or system malfunctions that may have led to the CD13 undervote [2]. The FSU team considered Dr. Wallach's hypotheses in our analysis process.

Similarly, in Ms. Jennings' contest to Congress [3], her team hypothesizes that a software error may have interfered with the transfer of information between the volatile memory where votes are stored during the vote selection process and the non-volatile memory where the votes are retained for extraction at poll closing. The team specifically investigated each of the hypotheses mentioned above, as well as others identified by the team, during this investigation.

2.5.2 Voter Discontent. Another possibility is that voter apathy may have contributed to the undervote. Some argue that the negative tone, both in the primaries [4] where reportedly neither candidates' opponents endorsed the eventual winner, and the subsequent bitterly contested general campaign, resulted in voter apathy in this race. A ballot review conducted by a local newspaper in early December [5] and cited by Electionline.org [6] supports the theory that voter apathy may have combined with the ballot design issues and thereby increased the magnitude of the undervote in the CD13 race. The newspaper article quotes one usability expert as suggesting that straight party voters may be looking for party affiliation rather than candidates, and thus may be less likely to realize that they did (or did not) vote for a specific candidate.

An analysis of the election published this week in the Herald Tribune further supports the findings of the Dartmouth study. The newspaper analyzed every vote cast and discovered that loyal party voters — both Republican and Democrat — were largely responsible for the undervote in Sarasota. Nearly 60 percent of the 18,000 undervotes in the race came from voters who otherwise voted along party lines.[5]

Voter discontent does not explain the difference among the undervote percentages in mail ballots, surrounding counties, and the machine recorded votes. It is possible that voter demographics between more and less densely populated areas may account for part of these differences, but it is widely accepted that these factors do not account for all of the difference.

2.5.3 Event 18 Correlation. An academic study of Sarasota event logs [7] revealed a correlation between the undervote rate on specific machines and occurrences of a specific anomalous event in the audit logs for those machines: specifically, the "Invalid Vote PEB" message, which has also been identified as "Event 18" [7]. In the first week of January, before the report had been released, we had noticed the Event 18 messages in the event logs, investigated them, and established that the causes were (1) a software bug that did not affect the recording or tallying of votes for the Voter

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PEB-Normal Ballot anomaly and (2) poll workers taking a specific action for Event 18 variations. The correlation noted in the paper is not due to any fault in the iVotronic firmware. Our detailed findings supporting this are reported in Section 6.2.1.2 below and in Appendix F.

2.5.4 Ballot Design Issues. Ballot design issues represent another possible cause that emerged soon after the election. Many people speculated that placing a race with only two candidates on the same page along with a race that has many more candidates, without a prominent race title block, could distract some percentage of voters. This theory may also explain voter complaints that they "...did not see the Jennings race..." until they noticed it on the summary page. A recent study argues that ballot design issues are the most likely undervote cause [8] in the CD13 race, a result also supported by an informal experiment reported in Electionline.org [6]:

Ted Selker, director of the Caltech/MIT Voting Technology Project, set up voting machines on the MIT campus and asked random people to vote. Selker told the paper that initial results indicate that the two-candidate race is missed 60 percent of the time when it's dwarfed by the list of gubernatorial candidates.

A clearly confusing aspect of the Sarasota ballot is that the first page contained two long headers separated by a straight line, followed by a large, important race. This structure may pre-dispose voters to a pattern of two long headers separated by a line followed by a large race, leaving the CD13 race unnoticed on the second page. Screen shots of these pages are provided in Appendix A.

Another study [7] questions whether the ballot design theory can explain all the undervotes. That study hypothesizes that machine failures associated with the "Invalid Vote PEB" message (Event 18) may have contributed to the high undervote rate. Our analysis and code review conclusively refutes the Event 18 hypothesis, as detailed in our technical findings below. Unfortunately, neither statistical analysis nor code review can conclusively confirm or refute the ballot design hypothesis itself. Our findings are consistent with, but do not confirm, the ballot design explanation.

2.5.5 Age Variations. In December 2006, a Sarasota newspaper conducted an analysis examining the correlation between age and CD13 undervotes [9]. They found that in "...precincts where the median age was greater than 65, the undervote rate in the congressional race was 18 percent, 40 percent higher than in younger precincts." Some suggest that the undervote-age correlation supports the ballot design hypothesis and refutes most machine-related hypotheses since software cannot detect a voter's age. It may also explain the correlation between undervotes and voters associated with one party or the other. We attempted to identify fault hypotheses to explain this correlation, but we were unable to construct any machine-related fault hypotheses that would explain this observed effect.

3 iVotronic Operational Overview

The ES&S iVotronic is a highly configurable voting system. It provides a wide variety of configuration options that can be used to customize its operation according to local requirements. Consequently, many of the iVotronic's configuration options were not exercised in the CD13 race. Here we provide an overview of the iVotronic architectural and operational characteristics, as it was used in the Sarasota County CD13 race.

3.1 The iVotronic Election Process

The iVotronic voting process generally includes the following phases: (1) election generation and setup, (2) preparing Personal Electronic Ballots (PEBs) and removable non-volatile memory cards,

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(3) initializing iVotronic terminals, (4) opening the polls, (5) voting, (6) closing the polls and accumulation, and (7) tabulation. We discuss each of these in the following subsections. While we will discuss some aspects of the iVotronic hardware in this section, we save many details about the hardware for a later section.

3.1.1 Election Generation. This early phase is largely outside the scope of the firmware code review. Our understanding is that the election staff creates the election definition files on the vendor's election management system (called Unity), generates a unique election identification code, defines the contests, and identifies the candidates in each contest. The staff exercises and tests these settings before settling on a final election configuration.

3.1.2 Preparing PEBs and CF Cards. The iVotronic stores and retrieves various data using two easily removable storage devices: the Personal Electronic Ballot (PEB) and a Compact Flash (CF) card. The PEB contains the election definition files produced by Unity for the precinct where the PEB will be used, as well as the election identification code. PEB initialization installs this information on the PEB's non-volatile storage. The CF contains audio files on machines configured for disabled voters (ADA) machines and information to identify the election. All CF cards are loaded with bit-for-bit identical information during the preparation stage. The election staff inventories, initializes, and tests these storage devices between elections, often just a month or so prior to Election Day.

3.1.3 Initializing iVotronic Terminals. Two election initialization operations relative to the iVotronic terminals are: (1) updating the firmware (when necessary) and (2) clearing the on-board memory. Firmware updates do not occur in every election cycle so firmware may persist between elections. The clear and test procedure erases information associated with past elections, initializes the persistent storage on the iVotronic terminals, and prepares the iVotronic terminal for use in the next election.

3.1.4 Opening the Polls. On Election Day, a poll worker opens the polls by inserting a PEB into each iVotronic terminal. This makes the iVotronic terminal ready for voting. A de facto standard practice is to use one PEB (called a "Master PEB") to open all terminals in a polling place. Each polling place has its own Master PEB. Master PEBs are ordinarily not used for anything other than opening and closing the polls; they are set aside, unused, for the rest of Election Day.

3.1.5 Voting. After each voter demonstrates her eligibility to vote and signs the sign-in roster, a poll worker accompanies her to an iVotronic terminal, inserts a PEB into the terminal, responds to an administrator screen (e.g., to select the proper precinct, for early voting or multi-precinct polling places), and then removes the PEB. Thus, the PEB serves the purpose of activating the machine to allow a single voter to cast a single ballot. The voter never handles the PEB. When the poll worker removes the PEB, a voter administration screen appears and the voter selects her desired options (e.g., the language in which to view the ballot). When the terminal displays the ballot, there are only two valid voter actions until the voter reaches the final summary page: (1) select or deselect one or more candidates on the page, or (2) page right or left (meaning to move forward or backward, respectively, through the ballot). Once the voter reaches the final summary page, she has three options: (1) select a race to re-vote, (2) page right or left, or (3) cast the ballot. The voter may cast her ballot any time after reaching the final summary page.

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Some iVotronic terminals provide extra features designed to enhance their accessibility. These machines are known as ADA-capable terminals; the acronym refers to the Americans with Disabilities Act. Not all iVotronic terminals are ADA-capable. Non-ADA terminals have a standard ballot presentation style that utilizes color to highlight locations on the screen that can be activated by touching them, such as “page right” and “page left”. ADA terminals can display color-enhanced ballots, but they also can display three non-color ballot formats: (1) high contrast with same font, (2) high contrast with a large font, and (3) an audio interface in which the contents of the ballot are spoken to the voter via an audio headset. ADA-capable terminals that are set to display color-enhanced ballots are usually not used for ADA voters because changing the terminal between the color-enhanced mode and the ADA mode requires a non-trivial administration action. Therefore, a voter who votes on an ADA-capable machine and does not invoke any of the ADA ballot formats will generally receive a black-and-white, high-contrast version of the ballot that they would have received on a non-ADA machine.

In Sarasota County, each polling place contained at least one ADA-capable machine as well as some number of non-ADA machines. ADA machines were not reserved solely for voters who needed the special accessibility features. Some non-ADA voters voted on ADA-capable terminals, and thus received the black-and-white, high-contrast regular-font ballot layout.

3.1.6 Poll Closing and Accumulation. At the end of the voting period, a poll worker reinserts the Master PEB into each terminal. We note that the iVotronic equipment does not itself impose any requirement to have a special Master PEB. Rather, the convention of using a Master PEB evolved because the iVotronic requires that the same PEB that opened a terminal be used to close that terminal. Designating a Master PEB has several procedural advantages over using multiple PEBs to open and close the polls; among other things, it reduces the potential for poll worker confusion about which PEB to use. Should the Master PEB be lost or unavailable when it is time to close the polls, there are procedures that allow an alternate PEB to close terminals.

It is also important to note that no cumulative vote count is kept during the voting period. Rather, iVotronic terminals accumulate Cast Vote Records (CVRs) in persistent, non-volatile memory. Each CVR records the set of candidates that a single voter voted for. CVRs are sometimes known colloquially as “ballot images”, though it is important to point out that they are not stored as a graphical image; instead, a CVR simply contains a list of codes identifying the candidates associated with that CVR. The closing process generates the paper summary tape used in the canvass process from the CVRs that are stored in the terminal non-volatile memory. The summary tapes are signed by poll officials and become the official returns from that polling place.

A separate step in closing the polls is the accumulation of audit data, namely event log entries and ballot images (CVRs). The poll worker is given an option to transfer the contents of the three terminal flash memories to the removable Compact Flash (CF) card. Each of the flashes is copied using a low-level binary copy to a special format file in the CF. This option was exercised in the CD13 elections in Sarasota as part of the closing procedures and we understand the resulting files are available by public records request.

3.1.7 Tabulation. As with Election Generation, tabulation occurs on the Unity server, not on the iVotronic terminal.

3.2 iVotronic Hardware Architecture

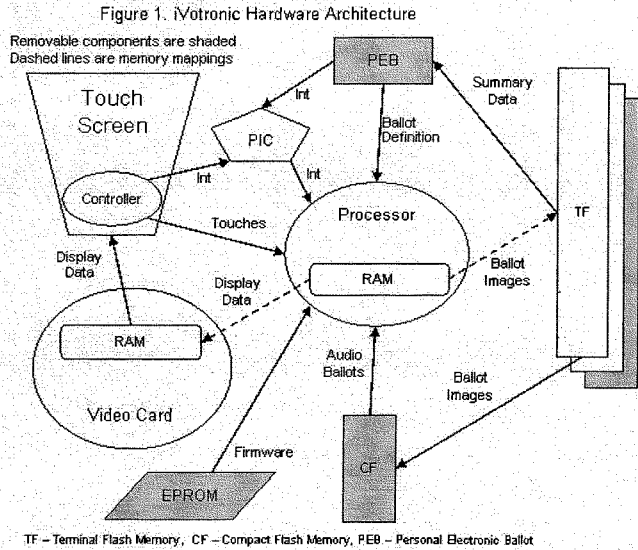
As we noted earlier, the iVotronic architecture and construction details are proprietary and we agreed to protect the vendor’s intellectual property where it is not specifically pertinent to this analysis. Thus, we give an overview without addressing details where they are not important to our findings. Figure 1 provides a visual overview.

3.2.1 The iVotronic Terminal. The iVotronic terminal is the device that voters engage to review the contests and cast their ballot. As computers go, it is a simple device with the primary component and component packages that we discuss below.

3.2.2 Main Processor. The iVotronic processor is a widely used, general purpose processor. It is sufficiently mature that its properties are well understood and it has no distinguishing properties that impact this analysis. During each voter session, Random Access Memory (RAM) stores components of the contest and candidate records.

3.2.3 Touch Screen. The primary input/output interface is a touch screen, which is a graphic display panel with a pressure-sensitive surface. When pressure is placed on the touch screen, electrical resistance is reduced at the point of pressure. The screen is a commercial off-the shelf component.

3.2.4 Touch Screen Controller. The touch screen controller is a programmable microcontroller that determines the X and Y coordinates of the point of maximum pressure on the touch screen. The touch screen controller also performs other functions, such as providing information about the battery voltage level of the system and turning on and off the backlight. It communicates with the main processor via the synchronous serial I/O port. It interrupts the main processor when it has data



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on this port for the main processor to receive. The touch screen controller is a commercial off-the-shelf component.

3.2.5 Programmable Interrupt Controllers (PICs). The system has two programmable interrupt controllers, called PICs for short. The PICs intermediate interrupt requests for the main processor from other devices. The devices that request interrupts in the iVotronic are: (1) two asynchronous serial I/O ports, (2) a synchronous serial I/O port, (3) a timer circuit that generates an interrupt every millisecond, and (4) hardware exceptions. The PIC hardware is a commercial off-the-shelf component.

3.2.6 Real-Time Clock. The real-time clock device keeps an integer count of seconds. It is read by the main processor and used to compute the date and time of day to a resolution of one second. It also provides information such as the serial number and model of the iVotronic device, an indication of whether there is a PEB in the PEB slot, and whether the PEB is of the supervisor or voter type (PEB type is discussed in a later section). The real-time clock device provides this information to the main processor via a sequence of 12 characters that is repeated once per second, one bit at a time. The real-time clock device cannot interrupt the main processor. Software on the main processor must poll the real-time clock bit frequently enough not to miss any bits.

3.2.7 Serial Communications Ports. There are two asynchronous serial I/O ports and one synchronous serial I/O port. One of the two asynchronous serial I/O ports is dedicated to serving the RS 232 interface to the external communications (printer and modem) pack. The other is dedicated to infrared communications with the PEB. The synchronous serial I/O port is dedicated to communications with the touch screen controller. Each of these interfaces interrupts the main processor when input data is available.

3.2.8 External Communications Pack (Printer/Modem). A modem can be connected to the iVotronic by attaching a communications pack through an RS-232 interface to one of the two asynchronous serial communications ports of the iVotronic. The modem can be used for transmission of election results to a central location. The communications pack also provides a printer that can be used for printing summary tapes.

3.2.9 PEB and PEB Interface. A Personal Electronic Ballot (PEB) is a non-volatile memory device designed for use with the iVotronic. PEBs hold the ballot definition, are used to open the terminal and to initialize every voting session. A PEB is about the size of a pack of cards.

The PEB communicates with the iVotronic terminal through a short-range infrared interface. The iVotronic terminal contains a special slot that a PEB can be inserted into. The iVotronic contains a magnetic switch that senses the presence of a PEB, and the iVotronic is programmed to only communicate over the infrared interface when a PEB has been inserted. The infrared connection is completely physically shielded while the PEB is inserted into an iVotronic terminal. We reviewed software that drives the PEB's infrared device and the corresponding terminal software that interfaces with the PEB.

A Supervisor PEB is a PEB that is initialized to be utilized exclusively by a poll worker. Sarasota County used a voting process known as "Pollworker-Activated Mode." In this operation mode, a poll worker who possesses a "Supervisor PEB" enables a machine for each voter. Specifically, the poll worker:

1. engages a validated voter at the check-in table;
2. escorts them to an available voting machine;

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3. inserts the PEB to enable the machine;
4. removes the PEB; and
5. leaves the voter to select and cast their votes.

The voting session cannot begin until the supervisor removes the PEB from the slot. The voter completes the session by pressing the vote button to cast their ballot. Should a voter leave an open session without casting their ballot, the poll worker can reinsert the PEB to cancel or cast their ballot and reinitialize the iVotronic for a subsequent voter.

The Supervisor PEB as issued to the poll worker is fully functional. Without any recharging or other re-initialization, poll workers can:

- (1) open the polls;
- (2) initiate new voting sessions;
- (3) cancel ongoing problematic voting sessions;
- (4) enter the service menu; and
- (5) close the polls

There is an alternate election administration procedure that uses another type of PEB, the "Voter PEB". In that process, the clerk gives each voter a Voter PEB that enables their own terminal. This process is known as "Voter-Activated Mode." Since Sarasota County did not use Voter-Activated Mode and did not employ Voter PEBs, we do not detail their operation further.

A Master PEB is a single Supervisor PEB that the polling place elections staff selects to open and close the election on all machines in the polling place. Before the election begins, all Supervisor PEBs within a precinct contain the same data. In particular, the Master PEB is identical to all other PEBs in that polling place, except for the serial number and other PEB-specific identification information. Local officials generally mark the Master PEB with a colored band for proper identification. Normal election procedures require that the same PEB (i.e. the designated Master PEB) open and close each machine. There are fall-back procedures to use an alternative PEB to close the election, for example if the Master PEB is damaged.

3.2.10 **Vote Button.** The vote button is a physical switch that the voter uses to cast their ballot once they complete candidate selection. The vote button only becomes active once the voter has paged through the entire ballot to the last review page. A flashing light inside the vote button indicates its active status. On a non-ADA machine, it is the only physical button (as opposed to "buttons" displayed on the touch screen) that voters engage.

3.2.11 **Paging/Response Buttons to Support ADA Voters (ADA machines only).** The Help America Vote Act (HAVA) requires at least one ADA terminal in any polling place at which disabled persons will vote. Approximately every fifth iVotronic terminal is ADA equipped. These terminals differ slightly from non-ADA machines, most prominently in that ADA terminals have three physical buttons for interacting with the machine. Like the VOTE button, ADA buttons are mounted on the iVotronic terminal frame, not displayed on the touch screen itself. When the poll worker selects ADA audio voting, the touch screen is inactive and the voter presses the ADA buttons in response to the audio ballot. When non-audio voters use the machine, the ADA buttons are disabled.

3.3 **Memory Architecture.** The iVotronic memory system is engineered in a five-tier hierarchy.

3.3.1 **PEB.** As described above, the PEB contains non-volatile memory. At poll opening, the PEB contains the ballot definition, which is copied into the terminal flash (see below) when a voting

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session begins. The PEB is designed to be easily and regularly inserted and removed from the voting terminal, as many as several hundred times per day, to initiate voter sessions and perform other functions. At the end of the election, one Master PEB in each polling place closes each terminal, receives and stores voting summary information, and may be inserted into a designated terminal to send results to the Supervisor's office via modem connection.

3.3.2 Non-volatile terminal flash provides persistent storage for ballot images. The iVotronic contains three internal flash chips that are used to store data in triplicate. If a voting terminal loses power, any ballot images recorded in this triply redundant store remain intact and available once power is restored, or through recovery procedures. The three flash chips are intended to contain identical information, and the iVotronic firmware regularly compares their contents to ensure 100% consistency. Two of these flash chips are fixed in the terminal and cannot be easily removed. The third can be easily removed by County elections technicians, for instance for auditing purposes, after opening the terminal case. Ballot images remain on these three flash chips and are available for audit until elections personnel conduct a clear and test operation (which erases terminal flash).

3.3.3 Compact Flash card. The Compact Flash (CF) card provides non-volatile storage. Like the PEB, the CF card is designed for easy removal. However, unlike the PEB, it is not intended to be removed from the terminal during the voting session. A sliding door on the terminal protects the CF card. In Sarasota County, tamper-resistant tape is used to seal this door to reduce the risk of removal without notice.

The CF card itself is similar to devices that consumers utilize in cameras and other portable devices that require high volume, non-volatile memory, e.g. SD cards. Before the election, elections staff insert the CF cards into the iVotronic terminals at County headquarters. The CF cards initially contain only audio files (for use with the audio interface provided by ADA machines) and information identifying this election uniquely. The contents of the CF card are not modified during the election. The poll closing procedure used in Sarasota County copies the ballot images and other audit information accumulated on the terminal flash to the CF card.

3.3.4 At the lowest level, the on-board Random Access Memory (RAM) provides volatile memory. RAM is not designed to be removed from the terminal and is not useful for routine audit purposes because its contents are volatile and vanish when the machine is powered down.

3.3.5 Erasable Programmable Read Only Memory (EPROM). The EPROM is a fixed chip that stores the iVotronic firmware (i.e., the executable code executed on the iVotronic's main processor). Firmware only needs to change when a software version update occurs. Elections staff typically load firmware to the EPROM through the service menu that copies the new firmware to the EPROM from a compact flash card that was prepared for this purpose.

3.4 iVotronic Software Architecture

To protect intellectual property, we again avoid providing details where these details are not relevant to our findings. iVotronic firmware is organized into two module groups, one that handles hardware interaction and services; the other is best described as voting application code. The software allows nine processing modes. Figure 2 roughly summarizes these modes.

3.4.1 Low-Level and Machine Interface Code. This group of code provides a hardware abstraction layer designed specifically for the iVotronic. The iVotronic does not have an operating system as that term is commonly understood. The modules in this group perform necessary services that

operating systems typically provide, including management services and interfacing to the input/output devices. Most of this code is written in C, a high level language that is commonly used for operating system code; there are a few small assembly language modules.

3.4.2 Application Code. These modules include the code that runs the election, including vote selection, vote recording, and the graphical user interface. These modules also include code to generate the summary reports and transfer them to the PEB, as well as the code to transfer the ballot images and audit data from terminal flash to the CF card. The application code is written entirely in C.

3.4.3 Relevant Code Properties

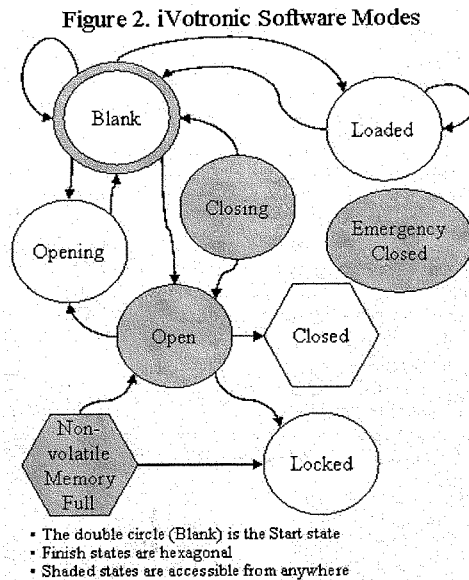
When we received the software, we did not expect to see high assurance source code. While the code meets the target 1990 voting system standard, there is a wide variation in naming and other readability characteristics. Global variables are integral components of virtually every function. While developers did not use “gotos”, control flow is not standardized and is often unintuitive. The code base is aging and shows the effects of numerous modifications. The team was frustrated by the code’s limited readability, and we suspected corresponding reliability issues.

Other aspects of the code structure present hurdles for readability and maintenance, so errors could easily be introduced during updates to the code made as part of the normal software life cycle. There is an excessive reliance on global variables compounded by a lack of a high-level design to model the software components and functions. This led to a repetitive coding style, in which functions sometimes repeat checks and initializations that were performed at earlier points. We identified several benign, harmless defects caused by this strategy.

A positive aspect of the iVotronic firmware is that it contains only a small amount of commercial off-the-shelf (COTS) code not written by the vendor, including a driver for the CF card and a standard C library provided by the compiler. We did not review the source code for any of this COTS code, but because COTS code was used so sparingly, this was not an impediment to the iVotronic firmware analysis.

Conversely, the iVotronic firmware source has several important properties that support reliability and maintenance. Of central importance, the vendor controls all critical code, as there is no commercial operating system. Thus, the iVotronic code need not provide general-purpose functionality; rather it focuses on special purpose electronic voting services that are narrowly tailored to this specific application.

Moreover, while the code is not highly readable, it avoids complex (and correspondingly dangerous) operations such as dynamic memory allocation and multi-threading. Though the



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iVotronic code is not well modularized, it also does not suffer from well-known complexities associated with modern object-oriented programming, such as the fragile base class problem.

The basic structure of the application is simple. The voting code executes in a single-threaded, single-address space application, thereby avoiding many of the challenges associated with multi-threaded concurrent software. There is a single thread of control, corresponding to the main program. The processor is reset and the main program is reloaded and restarted with freshly initialized variables for each voter. There are hardware interrupt handlers that interact with I/O devices primarily to update global variables. Those global variables are read, and sometimes also updated, by the main program, thus there is a potential for timing-dependent errors.

4 Assumptions

During the course of any scientific analysis, investigators make many assumptions. Here, we list the most important subset of assumptions that we made. We used most of these assumptions to reduce the amount of code we had to review manually by limiting our examination of code to that which could have executed in the CD13 race. As our work progressed, we were able to independently corroborate these assumptions as noted below.

4.1 Election Configuration

While the iVotronic is used only for elections, voting system requirements can vary greatly from state to state, or even county to county. For example, some states leverage touch screen device capabilities to reduce natural candidate order bias by rotating the candidate order from voter to voter. Thus, even though the iVotronic code is special-purpose software targeted to a specific task (i.e. voting), there is always a significant amount of the code base that is not exercised in any given election. In many cases, configuration options determine which code paths can or cannot be executed. We examined the election configuration used in Sarasota County and used it to focus our efforts on relevant code and to allow us to understand the correct execution paths. In particular, we only examined code that could have been executed in Sarasota County in November, 2006, given the configuration options that were enabled in Sarasota County. Consequently, many of our assumptions refer to which configuration options were enabled.

We confirmed these assumptions in a variety of ways. For example: (1) we looked at screenshots of the Sarasota ballot; (2) we examined textual versions of the ballot definition files from the Sarasota election; (3) we loaded the Sarasota election definition onto an iVotronic and executed and observed a mock election using the same election definition files used in the November 2006 election; and (4) we obtained information about the November, 2006 election from the FLDoS and the Sarasota Supervisor of Elections staff.

4.1.1 No Candidate Rotation. As noted above, iVotronic firmware supports candidate rotation so that the candidate's ballot order is rotated from voter to voter. In Florida, the candidate order is static, so the Sarasota ballot that includes the CD13 race did not rotate candidates.

4.1.2 No Multi-page Races. Occasionally there are so many candidates in a race that it is not possible to effectively display them all on the same ballot page. The iVotronic firmware includes logic and features to handle multi-page contests. There were no normal-font, multi-page races on the Sarasota ballot. However, some races displayed in large-font mode required more than one page to display. The CD13 race displayed on a single page by itself in large font mode.

4.1.3 Multi-Column Display. The iVotronic firmware allows single and multi-column ballot pages. There were nine ballot styles used in Sarasota across 156 precincts. Of course, ballots differ

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by precinct. The Sarasota ballot styles utilize between fifteen and twenty-one single column pages for initial candidate selection and three or four double column display pages for the ballot summary. Three or four review pages are two-column display. All re-vote pages are displayed in a single column.

4.1.4 Re-vote Pages. During the review process, when a voter selects a race to re-vote, the iVotronic software generates a display page containing only the selected race. This is a logical and appropriate process: the voter is presented with only the race that was selected for re-vote. However, we note that this behavior may create the illusion of a missing race on the original ballot: because the re-vote screen is so different from the main voting screen it may confuse voters into believing the revoted race did not appear on the original ballot. We address this as an undervote hypothesis in Section 6 below.

4.1.5 Text Ballots. The iVotronic manages ballots in either text or bit-mapped format. There is a significant amount of iVotronic code that deals with bit-mapped ballots. The Sarasota ballot was text-based, and there were no bit-mapped ballots used in Sarasota County.

4.1.6 No Multi-Language Ballots. iVotronic text-based ballots allow English or Spanish versions. Only English language ballots were activated in Sarasota.

4.1.7 No Straight Party Voting. Some states provide a simplified voting process for straight party voters. While the iVotronic firmware supports this voting feature, straight-party voting was not enabled in the Sarasota County ballot definition.

4.1.8 No Controlling Contests. When a voter's selection in one contest determines her eligibility to vote in a different contest, the former is called a "controlling contest". There were no controlling contests on the Sarasota ballot.

4.1.9 The Firmware Compilation Environment. We assume that the tools used to build the firmware from the source code:

1. Worked correctly;
2. Comply with the ANSI C programming language standard;
3. Do not have any bugs or unexpected behavior.

We assume that the firmware image provided to us was compiled correctly from the source code provided to us. We also assume that the firmware image provided to us was the firmware image that was actually executed by the iVotronic machines on Election Day. These assumptions imply that the executable software executed by the iVotronic systems during the election matched the source code we examined. As our study focused *only* on the source code, we did not attempt to reconstruct the executable firmware image. Both ES&S and FLDoS told us that the firmware compilation environment worked correctly.

4.2 Ballot Images Contain the Undervote. The undervote totals shown in the summary reports are identical to the ballot images that reside on non-volatile terminal flash memory. FLDoS confirmed that in their tests they extracted ballot images through the election management system, compared the count to the summary tape, and confirmed that the totals were identical. This indicates that if the undervote is due to a flaw or malicious act, that flaw or malicious act changed both the ballot image and the summary report. It also ensures that the undervote did not occur due to a tabulation error at poll closing or afterward by any means, either accidental or deliberate.

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4.3 Hardware Configuration Assumptions. We assume that the external communications pack was not attached during the election. Also, we assume that the touch screen controller and PICs, did not fail in a malicious way; that is, they either functioned correctly or failed in a way that was detected and resulted in the machine being taken out of service.

5 Activities That Are Out of Scope for This Analysis (i.e. Things We Did Not Do)

5.1 We did not conduct a comprehensive election audit. The Statement of Work gave the task of this team as:

The sole purpose of this project is to conduct a scientifically rigorous static software analysis on the iVotronics version 8.0.1.2 firmware source code to determine and identify flaws, vulnerabilities or anomalies, if any, that may have potentially caused, contributed or otherwise created the higher than expected under-vote rate in the District 13 Race.

The team's task was *not* to examine the iVotronic systems or the PEBs used in the election, or to perform forensic analysis on those systems to determine whether a problem in them caused the undervote. The team's task was to determine whether the source code used to create the firmware on those systems had flaws that would explain, or could have contributed to, the undervote. An analogy to the limited task of this group lies in the realm of automotive mechanics. If one car's computer has a problem, that car is examined. If many cars' computer systems have the same problem, a larger study is required to determine whether the programming is at fault. The individual cars are also examined to determine whether the individual computers were defective, or the programming on those individual computers was altered. In this analogy, the team is examining the programming. This is a part of the broader study into the computers failing, the FLDoS conducting the complete study of the cars' computer systems. Our investigation was just one part of a larger audit performed by the FLDoS.

Nevertheless, many hypotheses concerning the undervote can be ruled out through a combination of source code review and other evidence, such as the distribution of the undervote across the entire county, a similar undervote in Charlotte County (see Section 8.1 below), and the absence of undervote in other iVotronic jurisdictions.

5.2 We did not attempt to verify that the code is completely free of defects. There are fundamental limits on the ability of manual source code review to find defects in computer software. Manual code review is an imprecise process, guided by best practices and analyst intuition. It is impossible to check all code paths that might be executed in any nontrivial computer program. Also, in any nontrivial computer program, it is impossible to exhaustively enumerate and analyze the full state space that the code inhabits. Moreover, humans are fallible: just as the original software programmer can miss a defect in the code they write, so too can independent reviewers overlook subtle defects and bugs in the code.

We did not attempt to use formal methods. We did not attempt to apply software verification techniques such as Hoare logic, Dijkstra's weakest preconditions, or model checking to mathematically prove the absence of defects in the code. Rather, we used informal code inspection, guided by our engineering knowledge and experience.

Classically, software analysis usually involves a combination of static analysis (e.g., manual code review) and dynamic analysis (e.g., black-box testing, unit tests). This project was charged to perform static analysis of the code; dynamic analysis was not part of our charge. That said, the team were provided some access to equipment for testing and hands on evaluation, and we did

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supplement our static code analysis with directed testing and experimentation with the iVotronic equipment. However, even the combination of static code analysis, black-box testing, and clear-box testing cannot reveal the presence or absence of all faults in non-trivial programs.

For these reasons, we make no claims that we found all bugs or defects in the code.

However, we did perform a systematic and structured analysis of the aspects of the code that we believed to be relevant to the CD13 undervote. The purpose of this study was not to find all potential defects, but rather to accomplish the limited objective of finding the specific class of defects that may have contributed to the CD13 undervote. The limited scope of our investigation helped us to focus our analysis and increases our confidence in the completeness of our findings. While another set of reviewers with access to the code might find bugs we missed, we do not believe they would find bugs or defects that caused or contributed to the CD13 undervote. Nonetheless, we accept that certainty is unlikely even with limited scope and correspondingly offer only our best professional opinions rather than absolute guarantees.

We also emphasize that, even though manual code analysis has limitations, it is nonetheless an effective and powerful way to analyze a system such as this. Code inspection is a state-of-the-art technique for evaluating the reliability, security, and accuracy of systems such as this, and it has important advantages over its competitors. For instance, code review can find many defects and problems that black-box testing (e.g., logic and accuracy tests, mock elections, and parallel testing) cannot. Code review is especially powerful when combined with other software testing and evaluation methods, such as those undertaken during the FLDoS audit. If there were a software flaw or bug that caused or contributed to the CD13 undervote, we believe that one of these methods would have been able to find it.

5.3 We did not conduct a Red-Team exercise. One popular computer system vulnerability assessment approach is to engage skilled security specialists to attack working systems in order to determine their security strength. Depending on the terms of the Red Team project, they may have extensive access to code for static and dynamic analysis, or they may simply observe the system to determine their attack simulation approach. When done right, Red Teams rely on skill sets acquired through years of red teaming and an understanding of how the systems are used in the field. Red Team assessments are often conducted under conditions that mirror how the system will be used in practice. In this case, a thorough Red Team assessment would have had to be performed under conditions that mirror an actual election, with consideration of all administrative and security mechanisms that are employed in practice. We did not conduct a Red Team assessment.

5.4 We did not examine election management system source code. As we note earlier, the Statement of Work confined our work to analysis of the source code for the iVotronic firmware. We did not exercise or examine the election management system software. We note, however, that no activities of the election management software after the election could have had any effect on the undervote, because the summary tapes produced at polling places at the close of voting also showed an identically high undervote rate, and there is no way that any failure or fault in the election management software after the election could have altered the summary tapes.

5.5 We did not duplicate FLDoS audits. The FLDoS audit plan and results to date are posted on the FLDoS web page. These tests include machine and equipment examination, parallel testing, and other analysis. Although some of the team's activities overlapped with these tests, we did not duplicate these efforts. For example, the FLDoS conducted two dynamic tests, termed parallel tests

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[10]. These tests involved precisely reproducing election day behavior by having staff members acting as voters entering selections directed by scripts generated based on voting terminal audit records. They conducted two parallel tests, one with standby terminals that were not used in the CD13 election and the second test did utilize terminals used in the election. These tests did not reveal any anomalies. Thus, we did not conduct parallel tests and we did not disassemble any iVotronic or PEB hardware. Rather, we examined anomalous behavior only to identify possible hypotheses that might explain the CD13 undervote.

5.6 Software that we did not review. There are two categories of software components within the iVotronic terminal whose review is outside this project's scope and thus, was not available to the team. One category is firmware of I/O devices. There is a programmable microcontroller that manages communication between the main processor and the touch-screen. Comments in the main processor code identify the part number of the microcontroller. The interactions with the controller are well defined and are under the control of the main-processor firmware, which we reviewed.

The second category is third-party utility libraries. There is an I/O library provided by the manufacturer of the terminal, compact, and PEB flash memory modules and there are the C-language runtime libraries provided by the compiler vendor. These are reported to be generic libraries, proprietary to the respective third-party vendors, and are not considered part of the iVotronic firmware.

6 Findings

The first group of detailed findings that we present deals with reliability issues. In particular, our focus in this section is to identify potential non-malicious software faults that may have contributed to the CD13 undervote. We order these reliability findings based on the primary point at which they occur in the iVotronic election process. The later subsections detail asynchronous concerns and audit related issues.

Much of our work was focused on attempting to confirm or refute specific hypotheses that, if true, might explain the CD13 undervote. Consequently, many findings reflect our hypothesis-based approach, and we relate most of our findings to potential causes or contributors to the CD13 undervote. Once again, we do not claim to have exhaustively considered all possible undervote hypotheses. Rather, we examined those scenarios available to us and we spent considerable time and energy brainstorming and seeking alternative hypotheses. Our team spent many person-hours reviewing information about the undervote symptoms as well as reviewing the firmware source code. While potential hypotheses may remain unconsidered, we believe that we investigated those that are most likely and most dangerous.

We generally present our findings as follows. We describe the general hypothesis, and then refine it to a particular falsifiable hypothesis. We identify technology features that might make the hypothesis a reasonable one, and then give a technical analysis of the relevant parts of the system in light of the hypothesis. Then we discuss constraints that might inhibit the hypothesis holding and specific factors present in Sarasota that might have enabled the hypothetical flaw. We close with a remedy for the flaw postulated in the hypothesis.

We emphasize that we did not conduct independent investigations to verify information given to us by the FLDoS or Sarasota officials. Many of the enabling factors and constraints come from their information.

6.1 Findings About the Elections Setup

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6.1.1 Problem in Name Information on One or More PEBs.

Overview. The iVotronic firmware utilizes a special character (@) as the first character in the candidate name field to indicate that the candidate is "non-votable". Were this symbol to inadvertently appear in a ballot definition, voters would be prevented from casting a vote for that candidate.

Hypothesis. Based on voter complaints indicating that they were not given an option to vote for a candidate, we considered the possibility that the non-votable character may have been erroneously prefixed on a candidate's name on some number of PEBs. Were the PEBs initialized with this flaw or if such a flaw was introduced during the voting process, the candidate would appear on the ballot, but since there was no controlling contest to enable the candidate, no voter with a voting session initialized with such a PEB would be able to vote for the candidate that was so marked.

Enabling Technology. PEBs are special purpose memory devices that hold ballot definition files to initialize voter sessions and store summary tapes when the election is closed. While malicious injection is possible, a more likely cause would be a faulty initialization process that mistakenly pre-pended the @ character to a candidate's name. In this case, approximately fifteen percent of PEBs would have had to contain this faulty ballot definition in order to cause the entire undervote.

Technical Analysis. We did not find any mechanisms in the firmware that can prevent this error (or attack). If the ballot definition marks a candidate as non-votable, the firmware recognizes them as non-votable and does not display a vote box, and the touch screen is not configured to detect a vote for that candidate. This status is pervasive through the entire voting process, including the summary and review process. Conversely, there is no code that modifies the candidate name field, so if this field contains this character initially, it will persist for the duration of the election on that machine.

Constraints. There are several contraindications regarding this hypothesis. The primary detractor is that if a candidate is labeled non-votable, voters would not have been able to correct the undervote through the review process. The vast majority of voter complaints confirmed that they were able to correct the undervote. Additionally, were this problem widespread, it is such a clear flaw that it would have generated many very specific reports that poll workers could easily have verified and would have noted in the precinct reports. We found very few voters that noted this problem. Finally, we requested a copy of the election definition files from the Sarasota County Supervisor of Elections. We were given a textual dump, output by Unity, of all of the ballot styles used in every precinct in Sarasota County. No candidate name was prefixed with an @ character in those files.

Enabling Factors Present in Sarasota. There are no enabling factors present. We were led to examine this hypothesis by the undervote symptoms.

Potential Remedy. Utilizing a special character in a name field is non-intuitive and error-prone. The contest record should include properly named and typed fields that reflect the contest's status on the ballot. It should be controlled by well-defined, clearly identified mechanisms.

6.2 Findings About Voting Sessions

6.2.1 Voting Phase Findings

6.2.1.1 Investigate Reports that the Display Was Slow to Respond to Touch.

Overview. We consider a scenario in which technical impacts from slow touch screen response may unintentionally prevent the voter's selection from registering during the vote selection process, but not during the review cycle.

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Hypothesis. If a voter is able to interact with the touch screen in a sequence that causes the screen to display a candidate selection that does not match their most recent touch, it may cause the voter to misinterpret their selection for that race. Specifically, consider a situation where a voter touches a vote box twice in rapid succession. If the software delays updating the display in response to the second touch for some reason, after a very short period the voter may accept the first display response as conclusive, and due to the delay (if it exists) the voter might not notice the delayed update in response to the second touch. It is also possible that the second touch would cause the candidate to be deselected after having been selected.

Similarly, we consider a situation where a voter touches a vote box and waits patiently for her vote to display for a few moments before assuming her touch was not detected and touching the screen again. If the first touch is recorded and if the display is updated only after the second touch, the voter may accept the first display response as conclusive, while a delay (if it exists) could cause later display of the second recorded touch that the voter may not notice.

These scenarios are consistent with reports by some voters that they voted for a candidate, but noticed their vote was not registered when they reviewed their selections on the summary screen.

Enabling Technology. Low level hardware and software systems often utilize semaphores, polling routines, and other “wait and see” control procedures. We consider possible code flaws that may trigger these timing mechanisms in a way that exceeds normal limits, and cause corresponding synchronization problems.

Technical Analysis. Source code inspection reveals a predominantly sequential control process between touch detection, vote recording, and vote display. The only exceptions are a few interrupts that update global variables and return immediately. Our analysis indicates that the software cannot read a new touch until after the previous recorded selection displays. In particular, after detecting a touch to the screen, the software immediately updates the screen, then clears the buffer of touch events and waits for a quiescent state (i.e., where the voter is not touching the screen) before accepting the next touch event. At the hardware interface, the software cycle involves writing the image into a display buffer, and the delay in displaying this image to the voter can be measured in milliseconds. The touch screen controller displays this buffer approximately thirty times per second. Since the software extracts the information to generate the display value from the candidate’s vote field, sequencing appears properly implemented. While it is conceivable that the touch detection mechanism may cause significant delay, such a delay could not result in a press, record, display synchronization problem in the scenario we describe.

Enabling Factors Present in Sarasota. The team reviewed numerous precinct log entries and noticed that several voters complained about slow touch screen response.

Constraints. (1) Machines where screen delay complaints originated did not uniformly reflect the high undervote. The first machine that we checked had only a 7% undervote rate, considerably less than the 18% undervote rate. (2) There is no logic that explains why such a fault, if it existed, would have affected only one race on the 15-21 page ballot.

Potential Remedy. Aging and dirty hardware components are out of this team’s scope. However, from a systems perspective, when elections depend on machinery, Supervisors of Election must have an aggressive maintenance and replacement schedule in place for that machinery.

6.2.1.2 Consider Whether Event 18 (“Invalid Vote PEB”) Caused or Contributed to the CD13 Undervote

Overview. Sarasota event logs reflected a significant number of Event 18 instances. These events are identified in the event log by the message “Invalid Vote PEB”. We traced each Event 18

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instance to its cause and verified that they had no impact on any voting function, thus no impact on the CD13 undervote.

Hypothesis. We considered the Event 18 occurrences anomalous and investigated whether they may indicate machine failure or relate to any unusual behavior, particularly behavior that may have contributed to the CD13 undervote.

Technical Analysis. As part of the audit record routinely provided by the iVotronic, the firmware logs events that describe activity that may be of interest after the election. Though this particular event is unusual, we tracked each event occurrence to its cause. Each was triggered by the machine losing (or never having) communication with the PEB during an operation that needs the PEB to be inserted. Such instances mis-assign the value 0 to the variable that tracks whether the PEB is a Voter PEB or a Supervisor PEB. The software that prints the event logs interprets a 0 (or any value other than the value for a Supervisor PEB) as meaning a Voter PEB.

We identified a number of entries in the event logs associated with PEB type 0, including “Invalid Vote PEB” (Event 18) as well as “Normal Ballot Cast” events. There are four different categories of unexpected event log entries associated with PEB type 0 in the Sarasota event log. The first category is caused by a benign software defect. The final three categories reflect valid responses to poll worker PEB handling anomalies.

1. A “Normal Ballot Cast” event associated with PEB type 0 on an ADA terminal with Spanish disabled, and the PEB serial number in the event log is 0.
2. An “Invalid Vote PEB” event is the first event of a day, and the PEB serial number in the event log is 0, and there was voting the previous day. This occurs only in early voting situations.
3. An “Invalid Vote PEB” event intermittently occurs, and is immediately followed by a subsequent vote cast, and the PEB serial number associated with the “Invalid Vote PEB” event is 0.
4. An “Invalid Vote PEB” event intermittently occurs without an immediately subsequent vote, and the PEB serial number associated with the “Invalid Vote PEB” event is 0.

The first of these symptoms results deterministically from a defect in the code that only triggers on ADA terminals when the Spanish ballot is not enabled. The defect is associated with a function call that attempts to query the PEB when no PEB is present. When no PEB is present, the iVotronic software routine that queries the PEB assigns a 0 to the global variable holding the PEB type, to indicate a failure when attempting to query the PEB. In this case, it also sets the global variable holding the PEB serial number to 0. After the poll worker removes the PEB, the iVotronic terminal proceeds to display an initial screen to the voter. In the process of composing that screen, a function is called to display the PEB voltage, and that function queries the PEB. Since this function is invoked after the PEB has been removed (i.e., when no PEB is inserted), it will have the side effect of setting the PEB type to 0 and the PEB serial number to 0. Later, when the voter finishes voting and casts their ballot, the iVotronic terminal writes an event log entry indicating a “Normal Ballot Cast” event, and it reads the current value of the PEB type and PEB serial number global variables without checking them for validity and stores them in the event log entry. Since those global variables hold the value 0, this results in a “Normal Ballot Cast” event with PEB kind 0 and PEB serial number 0. Later, when Unity software is used to convert the event log into a textual format, the PEB kind 0 will be interpreted as a Voter PEB, because Unity interprets any unknown PEB kind value as a Voter PEB. Other than this erroneous value (and the PEB’s serial number also being set to 0), there is no negative impact and the only symptom is the message in the event log. The error condition occurs during language selection on ADA terminals where the Spanish language ballot is

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not enabled. Thus, all ballots cast on ADA terminals in Sarasota reflect this event, and there are no other instances of this event in the event logs.

The team identified this symptom in early January and tracked its cause and impact within one day. We give an extensive, detailed analysis by routine and line number of this category of anomalous event log entries in Appendix F. This appendix is marked as proprietary and confidential, because it gives intimate detail regarding code flow and operation and it identifies the modules, functions, variables, and line numbers associated with this defect in the code. It is illustrative of the rigorous, detailed analysis that the team conducted throughout the review. However, due to its detail, it exposes significant proprietary information and is marked as proprietary and confidential.

Based on this analysis, we were able to determine that the first category of anomalous event log entries were benign. While they were indeed due to a defect in the code, we were able to exhaustively analyze that defect and determine that it did not cause any effect on voting other than causing incorrect log entries.

As it turns out, the other three categories of "Invalid Vote PEB" log entries had a different explanation. This complicated and extended our investigation, because the other three categories clouded the symptom patterns.

The second category of log entries occurs on machines utilized in early voting. The event uniformly occurred at the beginning of each day on every terminal where there was voting the previous day, thus is only applicable to early voting devices. Several investigators independently reconfirmed that all code sequences associated with the "Invalid Vote PEB" message (Event 18) had no possible impact on the election results. A query to the Sarasota elections staff confirmed our hypothesis that elections staff woke up terminals by dropping a PEB in the slot and quickly removing it. They did this as part of their opening process to confirm that the vote count on machines locked in secure storage was not tampered with overnight. This process caused the iVotronic machine to register a problem when attempting to query the PEB (because it had been removed before the iVotronic was able to fully read it), thus triggering an "Invalid Vote PEB" message. In other words, the software was operating as designed. Thus, this category, too, is benign.

There are a few event log instances where a new early voting day is not accompanied by Event 18. This pattern is consistent with the poll worker having left the awakening PEB in the machine until the open splash screen appeared. At that point, PEB removal does not trigger an "Invalid Vote PEB" message.

The final two categories of log entries presentations also reflect the proper software response to lost communication with the PEB. If the PEB was jiggled or spuriously removed, normally during voting session initialization, an "Invalid Vote PEB" message is generated. Typically when this happens, a poll worker need only remove and reinsert the PEB to begin a new normal voting session. The event logs consistently reflect that normal voting session completion events follow these Event 18 instances within a few minutes.

In the fourth category of log entries, the event intermittently occurs without an immediately subsequent vote. There are only a few of these log entries and they are all followed by another normal session within an hour or two. This symptom is consistent with the poll worker simply taking the voter to another terminal when they experience an "Invalid Vote PEB" (Event 18) message.

We note that one study identified a correlation between machines that contained a PEB with serial number 0 and a higher-than-average undervote rate in the CD13 race. That study hypothesized that the anomalous event log entries might reflect a software defect that could have contributed to the CD13 undervote. Our analysis refutes that hypothesis and fully explains the cause of the anomalous

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log entries. It remains to be seen why there was a correlation between these log entries and the undervote rate. However, we note that every ADA terminal contained these anomalous log entries, and the overwhelming majority of anomalous log entries were associated with ADA terminals. Consequently, the study's results could be alternately described as revealing that ADA terminals were subject to a slightly higher-than-average CD13 undervote rate than non-ADA terminals. It is not clear why this might be so, though one possible explanation might lie with the slight differences in ballot presentation between ADA and non-ADA machines (e.g., non-ADA machines display parts of the ballot in color, while ADA machines display the ballot entirely in black and white when used by non-ADA voters). In summary, the evidence available to us is consistent with our conclusion that machine faults or errors did not cause or contribute to the CD13 undervote.

Potential Remedy. The vendor notified the team about the software defect in late January. They had independently identified this problem and they indicated to us that the flaw is corrected in subsequent iVotronic firmware versions. Again, the log entry does not affect the accuracy of the recording of votes, but the message does not accurately reflect the terminal's behavior. To resolve the early voting wake-up event, we note that the lock and unlock operations are designed for this function and may be a better option for poll workers.

6.2.1.3 Controlling Contests and Their Potential Effect on CD13

Overview. The iVotronic supports controlling contests, a special kind of contest where the selections made in one contest can affect eligibility to vote in another contest. If contest A controls contest B, the voter is only allowed to vote in contest B if she made a specific selection in contest A. As an example, a controlling contest situation may occur in a recall election. The mechanism is used to designate a particular contest—e.g., the choice to recall or not an incumbent—as controller. A subsequent contest—e.g., candidates for the office under recall vote—can be designated as controlled by the earlier contest. If the voter does not select the choice to recall the incumbent, then the voter is not allowed to make any selection in the controlled contest, and an undervote is recorded in the controlled contest.

Though there were no controlling contest relationships in Sarasota, if such a configuration were accidentally present, it could cause an undervote.

Hypothesis. We considered the possibility that the US Senate race was designed as a controlling contest and CD13 as the controlled contest. The iVotronic requires that the controlling contest appear earlier on the ballot than the controlled contest, so the US Senate race is the only possibility for the controller.

Enabling technology. Designating the Senate contest as controller for the CD13 contest could have prevented voters that made a particular selection in the Senate race from casting a vote in the CD13 race.

Technical Analysis. We verified through examination of the code that the iVotronic software enforces that the controller race must precede the controlled race. This restricts the possibility of a controller contest to the Senate race. As part of our investigation we verified that the ballot definition files for Sarasota County did not contain any controlling contests and the configuration of the Senate race was identical in all precincts.

In addition, if a particular voting machine were erroneously initialized with one or more ballot styles defining the Senate race as controller for the CD13 contest, this configuration would be highly visible to the voter: If the voter were to make a selection in a particular contest that is disallowed because of a prior selection in a controller contest, a message is displayed in the screen instructing the voter that unless the controller contest is re-visited and its selection changed, the voter cannot cast a choice in the current contest. We found no voter reports of having encountered

such behavior, which is unlikely since the undervote was extensive and widely distributed. Moreover, the parallel tests performed by the FLDoS did not reveal such behavior.

Finally, if this hypothesis were accurate, it would create a distinctive pattern in the ballot images, where some particular selection(s) in the US Senate race was always associated with an undervote in CD13 on the affected machine(s). To explain the CD13 undervote, most machines would have had to be affected in this way. No such pattern was observed in our examination of the ballot images. Our conclusion is that such configuration error could not have contributed to the observed effects in the CD13 contest.

Enabling factors present in Sarasota. The only factor of note that was present in Sarasota is that the CD13 contest was not the first contest in the ballot, which satisfies one requirement for a controlled contest. While in principle such configuration errors in selected ballot styles could lead to the observed undervote percentages, our review of the official ballot definitions, and more significantly, the lack of recorded voter complaints describing symptoms that match this error effectively rule it out as a factor in the CD13 undervote.

Mitigating Factors. Such a configuration error in the ballot definition can be easily ascertained with proper testing before the election. Again, it is imperative that testing be performed for each ballot definition.

6.2.1.4 Consider the Possibility of Definition of Straight Party Rules

Overview. The iVotronic supports a generic voting feature that can subject contests to straight party voting rules. If a particular contest sets a party preference, the iVotronic may prevent the voter from making selections for candidates of the selected party in all contests subject to straight party, by displaying the candidates of the selected party without a voting box. Instead, when the voter casts the ballot, the candidates of the selected party are recorded as “straight voted.” There were no straight party rules in the official Sarasota ballot definitions. In addition, straight vote is neither a blank vote nor an undervote.

Hypothesis. Designating a selection in a straight party contest could subsequently prevent that voter from selecting a candidate of the same party in any contest subject to the straight party rule. If later the voter were to re-visit and de-select the straight party contest, this might result in undervotes in the contests subject to the straight party rules.

Technical Analysis. The presence of straight party rules is visible to the voter in various ways: (1) When interacting with a contest controlled by the straight party rules, the voting boxes of candidates of the same party would not be displayed if the voter is not allowed to make that selection; (2) if the voter were later to de-select the straight party contest, the summary pages would show the undervote in the contests without a selection. Note that the selection of a party subsequent to the choice of a candidate of the same party in another race may not clear the earlier choice for that candidate. In other words, the selection of a party in a straight party contest may not “clear” any voter choices in specific elections, and sets or removes the “default” choice in contests where the voter has not made any selection. Indeed, the erroneous configuration of straight party rules would more likely decrease, rather than increase, undervote rates. In addition, the fact that high undervote rates were observed among voters that displayed a tendency to “straight voting” is a counter-indication to this having been a factor in the undervote—if any of the other races had been configured to trigger straight party preference, that would result in the same party candidate being selected in the congressional race.

Enabling factors present in Sarasota. No enabling factors are present in Sarasota, except for the intrinsic capability of the iVotronic to be so configured.

Mitigating Factors. Such a configuration error in the ballot definition can be easily ascertained with proper testing before the election.

6.2.1.5 Investigate Reports That the CD13 Race Was Not Displayed

Overview. In reviewing polling place logs, we noticed several voter reports that the CD13 race did not appear on the ballot. However, when they noticed the “NO SELECTION MADE” message on the review screen, they returned to re-vote the race successfully. We consider reasons why the race might not have appeared on its proper ballot page.

Hypothesis. We analyzed the firmware to identify potential flaws that cause a race configured similarly to the CD13 race (two candidates, both major party candidates, top of the page, no write-in, appearing on the same page with a many-candidate race) to not be presented to every voter.

Technical Analysis. The team spent many hours with hands on testing and reviewing iVotronic operation, including analyzing the Sarasota election setup. There are three specific properties that are relevant to this question. The first two reflect relationships between the first two ballot pages and the third addresses the differences between the original CD13 vote page and its review page.

(1) While some localities may hold elections on average once per year, few voters vote more than once every two years. Many others vote every four years or less often. Thus, when voters begin the (unfamiliar) voting process, they may quickly grasp any detected patterns as they seek familiarity. On the Sarasota ballot, the first ballot page set a pattern of having two large (3 or 4 lines) headers, separated by a straight line, and followed by a large multi-candidate race. The second page format closely follows this pattern, with the exception that there is a two candidate race between the two headings. The similarity is clear when looking at the first two ballot pages side-by-side as seen in the first two screen shots in Appendix A. This effect is more pronounced when the second page is superimposed on the first.

(2) The vote touch spot for the Democrat and Republican candidates in the large races are similarly placed on the first two ballot pages. Again, the similarity is striking when the pages are superimposed. The vote box for Bill Nelson on the first page is set just above the vote box for Jim Davis on the second page; similarly for Harris and Crist. The problem is that if the voter is drawn to Crist or Davis on the second page because the ballots look the same and because that is where they voted on the first page, they may naturally have missed the CD13 contest. This page similarity is equally as noticeable on the iVotronic itself, where it was first identified.

(3) The third factor reflects the difference between the original CD13 screen and the re-vote screen that is presented when the user visits the review screen and then selects the CD13 race to change their vote in CD13. The original page containing the CD13 contest is full from top to bottom with seven header lines and candidates for two races. Conversely, the CD13 re-vote page displays only the CD13 race and shows only two candidates. The re-vote page for the CD13 race (third picture in Appendix A) is nearly blank, which is unlike any page on the original ballot. It is not surprising that people would insist that the CD13 page *that they saw when correcting an initial undervote in CD13* was not on the original ballot, because it actually was not. It is also easy to understand how voters who used the review screen to correct an initial undervote in CD13 would be convinced that they would not have missed the race had it been originally displayed.

Constraints. Some have suggested [7] that because another ballot page that contained the Hospital Board contest is similar to the CD13 page and the undervote pattern did not appear there, the ballot format could not have caused the CD13 undervote. We assume the researchers are referring to ballots styles other than the ballot style that was utilized in twenty Sarasota precincts that had the Hospital Board contest at the bottom of the ballot page. However, ballot pages #2 and #6 are different in several important ways with respect to the other ballot styles as well.

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- (1) Page #2 has two (2) three-line headers while page #6 has three (3) one-line headers.
- (2) Page #2 has two contests, while page #6 has three equal-sized contests.
- (3) Page #2 has one contest with six candidates; page #6 contains only two-candidate contests.
- (4) There are nine possible selections on page #2, while there are only six selections on page 6.
- (5) The Hospital Board contest appears significantly later in the ballot, after voters have had a chance to acclimate themselves to the ballot format. In contrast, the CD13 contest appears on page #2 immediately after a page containing a single contest, which may have primed voters to expect a single contest per page. That expectation may have become weakened by the time voters reached the Hospital Board contest on page #6.

Another study [9] shows that precincts with older voters, who may be more susceptible to such ballot distractions, experienced a higher undervote rate. Some suggest that older voters may be more susceptible to such ballot complexities than younger voters.

6.2.1.6 Reports that The Voter Choice and the Displayed Values Do Not Agree.

Overview: We consider the possibility that the update of data structures recording voter selection may not be reflected through updates in the information displayed on the screen.

Hypothesis: The recording of voter selection is a multi-step process, starting with the detection of a touch that matches a particular contest and candidate/choice. The choice is recorded to RAM and a subsequent call is made to the display functions. A situation with improper serialization of operations or improper synchronization might lead to erroneous information being displayed to the voter.

Enabling technology: The iVotronic machine allows interrupt-driven processing, as we describe in detail in Section 6.3 below. This allows the execution of machine instructions from an interrupt handler between two statements that appear as consecutive in the application code. If these instructions could update or change variables that change control flow between the time when the structures are updated and the display is called, this could lead to a lack of faithfulness in the information represented to the voter.

Technical analysis: The voting sequence was reviewed from the voting session start to ballot casting. All the updates to the data structures recording voter intent were traced through the code.

The user interaction sequence could be summarized as follows:

- (1) A touch is detected and matched to a screen position corresponding to a valid choice.
- (2) If this choice corresponds to a contest selection choice (other possible choices are, for instance, to change the ballot page), then a set of checks is performed to decide if the choice is valid. While a de-selection choice is always valid (unselect a candidate or YES/NO choice for a proposition), the same is not the case for a positive selection. For instance, if the contest allows for multiple candidates to be selected (not the case with CD13) and the voter has already made enough selections, the attempted selection is ignored. Other selections that are disallowed have been discussed in findings 6.2.1.3 and 6.2.1.4
- (3) If all the checks are satisfied, the selection state for the candidate/choice is changed. A function to refresh the current page is then invoked.
- (4) The refresh function scans all contests in the current page for one with a candidate or choice whose selection state has changed by comparing the current selection state to the previous selection state. This contest is then re-displayed, by writing its current state representation to the screen memory buffers. The refresh function also updates the previous selection state for the candidate/choice to the current state.

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We note that the application code must make explicit calls for the touch screen controller to update the variables indicating where the last touch occurred. Moreover, once in step (1) the application code detects the location of the touch and resolves which contest candidate/selection it matches, it no longer polls for touch events, ignoring all user input until after the refresh call is performed (or the change is rejected, if the selection is disallowed through a failed check as described above). Therefore, it is not possible for the user to interrupt the normal execution sequence by (for example) selecting to go to a new ballot page before the code has completely processed its prior input. This includes touch screen input and input from buttons, such as the vote button.

The only parts of the code that modify a candidate's current selection state are those that perform the checks in steps (2)-(3). The only part of the code that modifies the previous selection state of a candidate is code that displays a modified contest in step (4). Therefore, if a touch is detected and matched and a change of selection correspondingly triggered for the contest, the code to refresh the contest representation in the screen will be called.

The refresh display code writes directly and synchronously to display buffers. The screen driver displays the changes the next time the screen is refreshed (asynchronously), which happens at a relatively high rate. Meanwhile, the code will have returned to wait for a new user selection through the touch screen or the vote cast button.

We note that the touch screen controller is relatively slow, in particular much slower than the display refresh rate. This makes it highly unlikely that a voter could make a (de-)selection in a race, and quickly browse to another page before the display is updated to reflect the changes. In fact, quickly pressing the screen at different screen positions will not register a touch since the touch screen controller filters out rapid or random touches. While this may be frustrating to the user experience, a discarded user input has no impact on a mismatch between display and recorded voter intention.

Finally, even if the user were not to notice a screen update before moving to another page, due to distraction, haste, etc., the current selection state for candidates/choices would be displayed correctly in the summary pages as well as if the user were to re-visit the page, either by browsing back or through the re-vote process. This is because when a page is displayed anew all the contests are displayed using the current selection states for the candidates.

Our analysis was aided by the fact that the iVotronic code is single-threaded. The only source of concurrency is via interrupt handlers.

Enabling factors present in Sarasota: The relative slowness of the touch screen controller may have contributed to some voter dissatisfaction and comments that it was difficult to make selections in some races. This could have been exacerbated in those contests that appear in particular screen positions, since in our testing of the touch screen we noticed that screen responsiveness could vary as a function of finger angle to screen, for instance. The fact that the CD13 race was the first on the top of a page may have been a factor in an increased number of complaints by voters that it was difficult to record choices in that race.

Mitigating factors: Ideally, all touch screens should be re-calibrated and tested prior to an election to ensure performance quality parameters.

6.2.2 Findings Regarding Recording of Votes

6.2.2.1 Prospective Software Faults During Transfer From Volatile to Non-Volatile Memory.

Overview. The iVotronic voting process requires the votes registered on ballots in volatile memory (RAM) be transferred to non-volatile memory (the internal triply-redundant terminal flash) when

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the voter completes their selections and casts their ballot by pressing the vote button. Such data transfers are a natural place to examine in response to the reported anomalous data patterns.

Hypothesis. We analyzed the iVotronic firmware to identify potential flaws that could cause multiple vote images to be modified by a single voter session. If possible then this would reduce the necessary occurrence of an error from 10,000+ (the number of undervotes) to several hundred (the number of voting machines), since a single error in each machine could affect all votes on that machine.

Technical Analysis. The team spent combined approximately twenty hours reviewing all the code capable of writing to the non-volatile (terminal flash) chips. There are three terminal flash chips, each of which contains a copy of the ballot images (e.g., each voter's selections on the ballot). The process of writing to a terminal flash is more complex than writing data to RAM since each write operation to terminal flash must be preceded by a write-enable command. The write enable requires that a specific command word be written to the start of the flash memory sector; without the write-enable command, any subsequent write operation would be nullified. This makes it much more difficult for an errant memory write operation to corrupt the ballot images stored in terminal flash. Code that enables writes to the sectors containing ballot images exists in a single location in the firmware code. This location performs a write of a single, complete ballot image (copied from RAM). The only other operation performed on these sectors of the terminal flash memories is complete sector erasing.

A close inspection of the code reveals that actions from a single voter cannot modify the ballot images previously written to terminal flash. Furthermore, the code that writes a new ballot image to terminal flash is careful to avoid overwriting previously written ballot images: it identifies where current ballot images reside and writes the new ballot image to an unused portion of the sector. There is some randomization in the selection of which sector a ballot image will be written (to provide anonymity to the voter by avoiding ordering ballot images in the same manner as the votes were cast), but proper checks are made to avoid overwriting prior ballot images or writing partial ballot images due to memory storage full condition. Once a sector is chosen, ballot images are stored sequentially in that sector until that sector is full. If the selected sector is full, an alternate sector will be chosen.

The code reveals that it is possible that a ballot image would not be written if all sectors were full when the write is attempted. This event would generate an emergency shutdown condition, all prior ballot images would be retained in persistent memory, and the event log is appropriately updated to reflect the emergency shutdown condition. This event is unlikely to occur in practice due to the capacity of the terminal flash to hold many ballot images.

Mitigating Factors Present in Sarasota. Most of the voting machines contained dozens or hundreds of ballot images at poll closing. This is far fewer than the storage capability of the terminal flash memories. No voting machines contained enough ballot images to fill the terminal flash memory necessitating an emergency shutdown.

6.2.3 Findings About Terminal Closing Processes.

6.2.3.1 Examine Potential Flaws When Transferring Results from Terminal Flash.

Overview. We analyzed the firmware to identify potential flaws in accumulating and extracting results from the iVotronic. Results may be extracted either by writing the terminal flash images (event log and vote images) to an inserted compact flash card or by uploading them through the serial port/modem.

Enabling Technology. Two separate routines are used for reporting terminal flash results to a compact flash card or to the serial/modem port.

(1) In the case that the results are written to a compact flash, one routine is called. This function checks to see that enough space is available on the compact flash card to hold either one terminal flash image (2 megabytes) or all three terminal flash images (6 megabytes). The choice of whether to copy one flash image or all three is made by the user and selected via an administration screen. If enough room is available then the contents of either one or three of the terminal flash images is written to the compact flash card. This operation writes 31 sectors of 128 blocks of 512 bytes per block. The last sector on each terminal flash chip is not written, but this sector contains only utility information not relevant to any audit. The actual data transfer is performed by a COTS library function `po_write()`, which provides a low-level interface to the compact flash.

(2) Reporting flash images over the serial link is performed by a different routine.

These two methods of reporting correctly reflect the contents of the terminal flash memory relevant to accessing vote image and event data. They also serve as a semi-independent check of the functionality of the other.

6.2.3.2 Do Audit Log Functions Record Events Properly?

Overview. We consider whether the audit log functions can fail to record events that they are called to record.

Hypothesis. An event occurs that should be listed in the audit log, such as closing the polls and reopening them, but is not shown when the log is examined. This situation would not cause or explain any undervotes itself, but it would explain how an auditable action that would cause the undervotes might not be recorded.

Enabling Technology. We consider how the audit log subsystem works, focusing on the logging functions. On the iVotronic, the audit log is also known as the event log.

Technical Analysis. The audit logs are stored in terminal flash during the voting. Three copies of the log are kept, and they are written sequentially (that is, the first copy is written, then the second, then the third). Audit log records are stored in an area called the “event queue”, which is stored in specific flash sectors. The bytes in terminal flash memory are bitwise initialized to zero. In what follows, think of the event queue as an array of event records stored in the elements of the event queue.

An event record consists of a numeric event code, the time the event is recorded, the serial number of the PEB involved, and the type of PEB (Supervisor or Voter). When the event log subsystem is initialized, it sets a variable to the beginning of the unused section of the event queue. It assumes events are written sequentially, so if there are events in the queue, it skips over them until it finds the first unoccupied element. This initializes the audit log subsystem.

The routine that records events takes a parameter indicating the event to be logged. The record is constructed and added to the event queue and is written to the event log in terminal flash. If the event queue is full, an “emergency close” routine is called. That routine immediately calls the routine that records events, causing an infinite recursion. The calling stack would grow until a hardware fault occurs. This could overwrite much of memory. It would undoubtedly cause the terminal to crash, freeze, lock up, or cease operating properly.

Mitigating Factors Present in Sarasota. While there were several reports of terminals locking, audit logs did not show improper terminal closing or events that would indicate that this situation occurred. Moreover, event log storage space is sufficiently large that only an extraordinary voter volume could cause memory to fill.

Potential Remedy. The vendor could fix the interaction between the routine that records events and the “emergency close” routine to handle the case of the audit log being full. Also, election officials could check that all terminals are properly closed on Election Day, and that closing is properly reflected in the audit logs.

6.3 Findings Related to Asynchronous Processes

Overview. While the iVotronic has only one main thread of control, it does include hardware interrupt handlers, which read and/or update global variables. When a variable is read or updated concurrently by the main thread and interrupt handlers, there is a risk of timing-dependent errors, usually called “race conditions”. Race conditions are difficult to detect in testing, because the combination of event timings that results in erroneous behavior may be very rare, and may depend on random events and minor variations in hardware tolerances that cannot be directly controlled or reproduced. Therefore, one cannot rule out, a priori, the possibility of timing-dependent errors involving asynchronously updated variables in the iVotronic.

Hypothesis. A timing-dependent error involving interaction between the main program and hardware interrupt handlers might cause erroneous behavior on some machines during the election, that would not show up on other machines or during pre- and post-election testing.

Enabling Technology. We considered the interactions between interrupt handlers and the main thread, through global variables, looking for potential race conditions.

Technical Analysis. We searched the code for indications of multi-threading. While there are comments in a few places that mention “thread” and “multi-tasking”, we were unable to find any indication of multiple threads in the executable code. As far as we can tell, the iVotronic software runs directly on the main processor hardware, with no operating system kernel, and the main program is the only thread of control other than the asynchronous hardware interrupt handlers. Apparently, the main program is reloaded and called each time a new voter session is started.

We reviewed all the sources of hardware interrupts, and all of the hardware interrupt handlers, to understand their interactions with the rest of the iVotronic software. We enumerated all of the global variables read or modified by hardware interrupt handlers or by functions called (directly or indirectly) from hardware interrupt handlers. We then examined the places in the main program and the subprograms called by the main program where references are made to those variables.

We first verified that the asynchronously updated variables are all of a size that permits them to be read and written atomically by the main program; that is, it is not possible for a hardware interrupt handler to execute between the reading/writing of one byte of the variable and the reading/writing of the rest of the variable. All of the asynchronously updated variables passed this check.

We then attempted to verify that all such variables were declared as “volatile”, so that the compiler would not perform unsafe optimizations (e.g., suppression of apparently-redundant load and store operations) on them. Most of the asynchronously updated global variables were not declared to be volatile, but we do not believe this mattered with the particular compiler used on the iVotronic software. That is, with there being so many cases, if the compiler performed optimizations of the kind that would be unsafe on these variables: (a) the results would probably have been detected in testing; (b) the probability of failure would have been uniform over time, affecting all races with equal probability; (c) the failures would be exhibited in ways other than just undervotes.

We next classified the uses of the asynchronously updated global variables, according to usage. Most of the uses conformed to one of the following generally-safe paradigms:

(1) Count-down timers. A software count-down timer is a global variable that is decremented periodically, in these cases by the hardware timer interrupt handler, until it reaches zero. The main

thread uses a count-down timer to delay for a given length of time, by setting the timer to a positive count (usually a count of milliseconds) and then looping until the timer value has reached zero. This usage pattern is generally free from dangerous race conditions, so long as the variable is of a size that can be read atomically by the main thread, and only the main thread sets the value of the timer. If an interrupt handler may also reset the timer, it is possible for the main thread to delay for a longer or shorter time than expected. The iVotronic software contains several variables of this type, though we believe the code could be simplified by consolidating some of these timers.

(2) Counters. A software counter is a global variable that is incremented periodically, in these cases by an interrupt handler. The main thread uses a counter similarly to a count-down timer, by initializing the counter to zero, and then looping until the value passes some limit. This usage pattern is generally free from race conditions, so long as the variable is of a size that can be read atomically by the main thread, the code that increments the counter stops before the variable can overflow, and either the main thread uses “>=” or “>” (rather than “=”) to check the timer, or the incrementing code stops at some moderately small value. The iVotronic software contains several variables of this type. They appeared to be used correctly. However, the code could be simplified and made more readable by consolidating some of the counters, and by adopting a more uniform policy of using just the count-down or just the count-up paradigm, rather than the present apparently arbitrary alternation.

(3) Read-only state variables. A read-only state variable is updated by the interrupt handler and read by the main thread. This usage pattern can be safe if the size of the variable allows for it to be read atomically by the main thread, and the logic of the main thread takes into account the volatility of the value of the variable. The iVotronic software contains many variables of this type, including those that keep track of the device model and serial number (presumably not changing, once set), whether a PEB is currently inserted and the type of PEB inserted (changing, but not ordinarily changing during the casting of a single ballot), and the X and Y coordinates of the last event on the touch screen (changing rapidly). While we did not find any specific errors in the usage of such variables, we did find that the need to continually poll for changes in these variables made the logic of the main thread difficult to follow.

We also verified that the interrupt handlers were either coded in a re-entrant-safe fashion or took steps (e.g., disabling interrupts) to ensure that they would not be called re-entrantly. We also examined all code that disabled interrupts for a lengthy period of time; no problems were detected.

A characteristic of this software architecture, in which the main program polls for changes made to global state variables by interrupt handlers, is that there may be variable delays in the responses to external events, depending on what the main program is doing when the event occurs and how soon after the event it checks the corresponding global state variable. In the worst case, an event may fail to be detected entirely, if the main thread does not check the corresponding global state variable before it is again modified by a subsequent event.

For example, when a voter touches a location on the touch screen, an interrupt handler records the fact that the screen has been touched in a global state variable, and also records the X and Y coordinates of the touch. If the main program does not check these variables before the voter touches another location, the first touch will be ignored. This is consistent with observed behavior of the iVotronic, i.e., if a person touches two locations on the touch screen in rapid succession the system will ignore the first touch. There is no problem in this case, since the voter can see whether each touch was registered by whether a corresponding “X” that appears on the screen. In fact, this behavior may be desirable, since the last touch point would normally be the one the voter intends.

Finally, we examined whether the various libraries we did not read (see Section 5.6) may have interrupt handlers or sections where they disable interrupts. We considered this possibility highly

unlikely for three reasons (1) We did not see any functions performed by library calls that would logically require an interrupt handler. (2) The library code is a generic, off-the-shelf product intended for embedded applications. It would put too large a burden on customers to design systems that use interrupts if the users did not have visibility of all interrupt handlers. To avoid IRQ number conflicts, the application would need to be involved in setting up the mapping from IRQ number to handler entry point. (3) In the section of code that sets up interrupt handling vectors, we did not find any references to function entry points not present in the code we reviewed.

6.4 Findings Related to Election Audits

6.4.1 Suggestions to Improve Audits

Overview. During this review we realized that certain enhancements to the iVotronic audit logs could have made the code review and audit easier and/or more complete. Based on our experiences in this work, we believe that there are opportunities to augment voting systems in ways that would significantly enhance our ability to perform meaningful election audits after the fact. We present these observations here.

Paper Trail. A paper trail would have served to confirm that votes were not altered after they had been recorded. In this case, the code review to check that ballot images were not altered after they had been recorded was fairly easy, if we assume the absence of malicious activity. If some voters verified that the paper trail was an accurate record of their intent before casting their ballot, then the number and contents of spoiled paper records would provide additional evidence to an audit regarding how many voters reached the review process without selecting a candidate in CD13 and how many successfully voted in CD13 thereafter. However, there is no reason to believe that a paper trail would have prevented the anomalous undervote. If many voters did not check the review screen, it seems likely that, all else being equal, many voters would also fail to check the paper trail. All in all, a paper trail might have provided some additional information to an audit, but likely would not have prevented the high undervote rate and likely would not have eliminated the controversy.

Voter Action Log¹. If the audit logs had been expanded to record all user interactions with the system, this would have permitted a more detailed analysis of the cause of the CD13 undervote. This expansion appears to be feasible, since the storage capabilities of modern voting machines far exceed the requirements for logging screen touches and screen contents.

Such a system would have two major advantages and one minor advantage not found in existing touch screen audit mechanisms. The first is that issues of voter confusion of the ballot structure or machine interactions can be studied at the conclusion of the election. This can provide valuable feedback for improving the specifications for ballot designs and for the operation of future voting systems.

The second is that a full log of all user interaction might reduce our reliance on code review and enhance confidence in the results of any audit. The most complex code in the iVotronic is the user interface where selections were made and displayed. The undervote question involves whether the voter selection was an accurate reflection of what the voter saw on the display. The complexity of the user interface code made it difficult to answer this question with confidence. A log of all user interaction would provide a way to sidestep this difficult code review problem. Auditors could inspect the log to examine voter actions for evidence to infer display accuracy rather than studying

¹ This idea originated in conversations between David Wagner and Steven Bellovin unrelated to this report.

the code to try to predict whether the code will always display the appropriate information under all possible foreseeable circumstances.

The third advantage, admittedly minor, is that a full event log containing all user interaction enables a semi-independent way of tallying the votes assuming the ballot used is known and the voting terminal displayed the ballot properly. An independent system can read the event log and, using only that information, can count the votes for each candidate in each race. While this does not help to verify that the votes were recorded correctly in the first place, it might provide a way to check that the tabulator summed up the votes correctly. The system or systems calculating votes from voter logs can be developed by a different company than the electronic voting machines, or by multiple different developers.

One problem is that there are significant unsolved vote secrecy problems with this mechanism. A full log of all user interactions creates a covert channel through which a voter could transmit evidence of how she cast her vote. This enables the voter to sell her vote or to be coerced, and, of course, such an interactions log would have to be stored in a way that does not compromise the privacy of the voter.

7 Security-Related Findings

As one component of the code review, we analyzed the security of the iVotronic firmware to determine whether fraud or computer intrusion could have caused or contributed to the CD13 undervote. This section details our findings about the security properties of the system that might be relevant to the CD13 undervote.

We discovered several software vulnerabilities in the firmware. We are convinced that none of them were exploited in Sarasota in a way that would have caused or contributed to the CD13 undervote. We present these threats as pertinent to this report under the Statement of Work because we cannot absolutely rule them out as a possible contribution to the undervote.

Our security findings relate to external data in four areas: PEBs, Compact Flash cards, modem operations, and password handling. External communications are natural targets that intruders might try to attack. While our analysis of modem operation did not reveal any software vulnerabilities, we discovered software security vulnerabilities in the other three areas. It is our assessment that none of them were exploited in Sarasota. We give our reasoning in more detail below.

There is a natural inclination to try to represent the following attacks with a probabilistic model that identifies a list of preconditions that would be necessary before an attack is possible and then treat each of these preconditions as independent events. If each such event is unlikely and the events are independent, then the probabilities multiply, yielding an attack likelihood that is statistically insignificant or even indistinguishable from zero. For instance, if we identify 10 such events, each occurring with probability $1/2$, then the total probability of a successful attack is less than one in a thousand.

While this argument is intuitively appealing, it is also inherently flawed. There are two problems. First, these events are not independent. Often, if we assume a sufficiently motivated and skilled adversary, many or even all of the preconditions may pose no problem for such an attack.

Second, there is no way to scientifically or systematically assign probabilities to the events. This is true for many reasons, but we give two here. First, there are no current or historical records upon which to found an estimate of these probabilities. We can prognosticate about the likelihood that someone can, for example, steal a voting terminal from a controlled space, but prognosticating is the best we can do and different prognosticators may predict dramatically different values with no scientific way to reconcile the difference.

Finally, attacks are not random. Attacks are deliberate human acts, not acts of nature. This makes the presence or absence of attacks hard to predict and limits the usefulness of probabilistic models based on random behavior. Further, we are not aware of any Byzantine models that capture the particular features of this situation.

In Table 1, we identify conditions that would have to occur for an attack to be successful. However, as argued above, the number of conditions found in Table 1 cannot be used as a measure of the ease or difficulty of attack; instead, a more nuanced analysis is necessary.

Table 1 is a simplification, and it disregards factors that may influence the difficulty of exploiting these vulnerabilities. For instance, source code for the iVotronic firmware would certainly facilitate development of the attacks described below, though it is probably not a necessary precondition. In any given circumstance, other items or knowledge may be necessary or helpful to execute an exploit.

Conditions to Exploit a PEB Virus
Must be a malicious, sophisticated intruder
They must acquire:
- one or more voting terminal(s)
- one or more PEB(s)
The virus must:
- be effectively injected
- propagate
- execute its designed attack
- delete any trace
Accomplish all of this undetected
Table 1. Virus Conditions

7.1 The Virus Threat

We identified several buffer overflow vulnerabilities that in a worst case scenario may allow an attacker to take control of a voting machine by corrupting data on a PEB. These create the possibility of a virus that propagates by exploiting the buffer overflow vulnerability. Viruses pose a serious threat to computer system integrity. Procedural and physical security defenses may reduce or mitigate virus risk but cannot guarantee attack prevention. Unfortunately, the testing procedures that are standard practice in the elections community are unlikely to discover these vulnerabilities or the presence of a virus. The vulnerabilities might be found through careful analysis of the voting machine's source code (as we have done). While it may also be difficult for a prospective attacker to discover these weaknesses, their presence opens a door for attack.

If these vulnerabilities were exploited, it would be possible to hide their existence. A cleverly constructed virus can cover its tracks so that infected machines could not be detected by ordinary means and an appropriately programmed virus could self-destruct and erase all its tracks.

It is possible that an outsider could trigger an attack and that once one machine is infected, the virus would spread from machine to machine through removable storage media without further attacker involvement. We give a detailed description of potential virus exploits in Appendix B.

7.2 Vulnerability Verification

Buffer overflow vulnerabilities are well understood, both practically and in the literature. There is no doubt that the bugs that allow buffer overflow attacks to occur are present in the iVotronic firmware. However, we did not implement exploits for any of these vulnerabilities. Moreover, in what we believe to be unprecedented cooperation, the vendor (Election Systems & Software (ES&S)) offered to provide us with iVotronic equipment and technical analysis so we could implement these exploits for demonstration purposes. We declined their invitation for two reasons. First, we are confident that we could implement a rudimentary attack in a reasonably short period of time, but we believe such a simple exploit is not revealing. Several laboratory attacks, e.g. [11, 12] provide convincing evidence that academically identified buffer overflows in voting systems can be

exploited in laboratory environments. Thus, there is little scientific benefit in constructing another elementary attack. Alternatively, we considered attempting to construct a more sophisticated attack, with all the features that a real attacker might implement. In the end, the team decided that such an effort was not necessary for our analysis. Nonetheless, we appreciate the vendor's willingness to provide the resources we would have needed.

7.3 Buffer Overflow Overview

A buffer overflow is a computer attack that results from copying more data than the destination area can hold, which results in writing over other data. Any buffer overflow bug constitutes a potentially dangerous defect. In the absence of malicious intent, it can produce unpredictable program behavior, but when the data being copied is carefully constructed, it can allow an attacker to transfer program control to her own malicious code. Once this happens, the attacker controls the machine.

Buffer overflows result from trust that the software places, inappropriately, in data from an external source. In the iVotronic firmware, the software implicitly trusts that the election definition file in the terminal's flash memory was generated by a legitimate entity. This assumption is not universally justified.

Not all buffer overflow defects are exploitable. Input filters, operational procedures, and even good fortune may establish an environment where a buffer overflow cannot be exploited to take control of the machine.

7.4 Propagation Mechanisms

Viruses that can infect only a single machine or a few machines are rarely dangerous. It is well known that viruses can propagate through removable storage media. The two prospective removable media on the iVotronic each have software security vulnerabilities.

7.4.1 Compact Flash (CF) Cards

The CF card stores an election ID file and a set of audio (.WAV) files that support various election functions. The code that reads one of these files from the CF card exhibits a classic buffer overflow vulnerability. It reads a variable-length string from the CF card and stores it into a fixed-size array in memory without size or other validity checks. If a malicious party embeds the data on the CF card, an overly long string can overwrite the return address on the stack and cause execution to jump to malicious code that was loaded into memory from the CF card.

To assess the risk associated with the CF vulnerability, we contacted Florida election officials, Sarasota County election officials, and vendor employees to understand how CF cards are handled during election administration. Here is our understanding of the processes in use in Sarasota County. (Any errors in this description are our responsibility. We thank election officials for their assistance in understanding election processes.)

Before the election, the election is set up on the election administration server at a central county location. A single CF card is written with the files needed for the election, from this server. This card serves as a master copy. The data on the master CF card is then duplicated, using CF duplication equipment, onto hundreds of CF cards, one for each iVotronic machine. Only four highly trusted permanent employees of the Sarasota County elections department have access to the elections administration server and to the master CF card before duplication. Before the election, a duplicated CF card is inserted into each iVotronic machine and the case is sealed with a tamper-evident seal by county election workers. Consequently, all CF cards contain exactly the same data before the start of the election, since they were duplicated from the same master copy.

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The iVotronic machines are transported to the polling place with the tamper-evident seal intact. In ordinary operation, poll workers never need to disturb the tamper-evident seal. After the election is over and the machines are returned to the county warehouse, two county election workers verify that the seal is intact on every machine before removing the CF card. Consequently, the tamper-evident seal protects the CF card from the time the CF card is inserted by county workers until the time when the CF card is removed by county workers. Any attempt to gain access to the CF card before then will presumably be detectable because it would involve breaking the tamper-evident seal. After the election, the CF cards are inserted into a CF reader attached to a laptop or server at the county warehouse, the contents of the CF cards are uploaded to the election administration server and archived, and the CF cards are stored for reuse in a subsequent election.

This process seems excellent from a security point of view. Each CF card is associated with a single iVotronic machine. CF cards are not shared between machines, so there is no likelihood that they would form a route for infection to spread. The contents of CF cards are erased between elections, so even if a CF card were to come to contain malicious data during the course of one election, that malicious data would be overwritten before the CF card is inserted into another iVotronic machine for the next election.

For these reasons, assuming the above procedures were followed, we believe that the CF cards posed a very low risk of spreading viruses in Sarasota County. Given that the above procedures were followed, we do not see any way that an outsider could have injected a virus and caused it to spread among Sarasota machines using CF cards. It is to Sarasota County's credit that their procedures regarding the chain of custody and security protections for CF cards are able to defend against even unanticipated security threats such as this one.

7.4.2 The Insider Threat

The greatest security threat to any computer system is the insider threat. This certainly applies to voting systems.

We illustrate the hypothetical insider impact by discussing the master CF card. The master CF card is a critical item. If that card contains malicious data when it is duplicated, then the malicious data will be duplicated onto all CF cards, which might then cause the infection of all iVotronic machines. If the election administration server is compromised, the CF card could be loaded with malicious software at its source. Alternatively, if someone were able to swap the legitimate master CF card for an illegitimate CF card that had been prepared in advance, they could arrange that the illegitimate CF card contained malicious data. Thus, the procedures for handling of the master CF card before it is duplicated are critical. CF cards are small devices, about the size of a postage stamp. This would make it easy to conceal a replacement card.

One significant mitigating factor in this case is that under Sarasota County procedures, only four highly trusted individuals are authorized to access the election administration server and the CF cards. This reduces the risk because it limits the number of people with an opportunity to exploit this vulnerability.

It was outside the scope of this report to perform a comprehensive review of the physical and operational security of the Sarasota County elections department.

7.4.3 The Potential for a PEB Virus

In a second removable media vulnerability, the PEB is also a potential virus propagation vehicle. Once a device (terminal) is infected by a PEB, that terminal may infect other PEBs inserted into it. Thus, if PEBs move between devices within a precinct, the virus could spread from machine to machine and from PEB to PEB. If terminals move from precinct to precinct, the virus can propagate

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throughout the county over time. Though the vulnerability that we discovered depends upon what operations are invoked on the machine (see Appendix C), it is still possible for a PEB virus to propagate if those operations are triggered with sufficient frequency. For example, triggering the voting operation with a malicious PEB will not propagate a virus, but opening the polls or printing reports on an iVotronic may pass on a virus.

This is a critical point in analyzing a potential virus exploit in the CD13 race, because an infected PEB cannot propagate the virus unless a terminal with that PEB inserted executes an unsafe operation. We detail this mitigating factor in paragraph 7.5.2.

Thus, an attacker may need to target a Master PEB in order to improve propagation likelihood. The Master PEB is important because it is used to open every terminal in a polling place, and the process of opening the polls is an unsafe operation. Thus, an infected Master PEB might infect every terminal in a polling location, though the virus could only spread to other precincts during a subsequent election.

A sophisticated virus attack might also attempt to infect a supervisor terminal. Supervisor terminals are a central point of risk, since an infected supervisor terminal can infect many PEBs prepared for a given election. We emphasize the need to carefully guard access to supervisor terminals and limit the operations that are performed on PEBs that are inserted into them.

The PEB vulnerability arises from an architectural flaw in the iVotronic source code design. During our source code analysis, we found many PEB-related security bugs that could be used by a virus. These bugs were similar in nature and are instances of the same architectural flaw. Significant additional discussion about PEB viruses appears in Appendix B.

7.5 Mitigating Factors

7.5.1 Supervisor Terminals in Sarasota

We noted above that supervisor terminals make excellent virus attack targets because they can have a much wider impact than voting terminals. The procedures in Sarasota mitigate the risk to some extent. For example, in Sarasota, supervisor terminals are stored in the secure Data Acquisition Reporting Center (DARC room) within the Supervisor of Elections office. Sarasota maintains fifteen supervisor terminals and uses only a subset of them for each election. For example, in the November 2006 election, Sarasota used six supervisor terminals. While infecting one supervisor terminal would be damaging, this policy would likely localize the impact.

7.5.2 Propagation Limited by PEB Operations

As we mentioned above, terminals can only be infected by corrupted PEBs if certain operations are executed while those PEBs are inserted.

It is important to note that the hypothesized PEB virus cannot be passed during the most frequent, and in many cases exclusive PEB operation: voter initialization. That is, the voter initialization operation is *safe*.

Also, an attacker might find it difficult to build a PEB that exploits all unsafe operation without noticeably interfering with the safe operations. If this were the case, it could complicate construction of a virus or slow its spread. We have no specific reason to believe this to be the case, but because we have not implemented a working exploit for the reasons stated above, it is hard to know what difficulties a virus writer might face.

7.5.3 PEB Handling Procedures

Removable media virus propagation properties are well understood and are easily estimated when we can assume random assignment of machines and media and machine to polling places. In our initial analysis, we generated a simulation that assumed such random behavior. Using that data, we estimated that a PEB virus would take four to six elections to propagate throughout the county. Closer evaluation identified PEB and terminal handling procedures that mitigate this threat. Specifically, PEBs do not move between precincts between primary and general elections. Thus, even if all PEBs in a particular precinct became infected during the primary, they would not be distributed among other precincts so the virus could not propagate further via PEB distribution between the primary and general elections.

Of course this does not prevent propagation since infected terminals can also spread a virus. In Sarasota, terminal distribution is less uniform, but definitely non-random. Specifically, terminals are stored on pallets in the county warehouse between elections. If after a primary each terminal from an infected precinct were assigned to a different precinct for the general election, the number of terminals in that precinct is the upper bound on the possible number of propagated precincts. More realistically, we were told that Sarasota stores terminals in the warehouse in such a way that they naturally retain a temporal clustering. While they may not be reassigned to the same precinct in the next election, they are likely to be removed from the warehouse and assigned to polling places in the next election in an order that is correlated to the order in which terminals were collected in the last election, causing a clustering effect. This kind of clustering would slow the propagation rate.

7.5.4 PEB Inventory Control

We were informed that, in Sarasota, PEBs are bar-coded and carefully inventory controlled. During non-election periods, they are stored behind three-tier locks, within the supervisor's office, inside the security controlled DARC room, and locked in cages. Of course an attacker may obtain a PEB from somewhere other than Sarasota County, but it is noteworthy that Sarasota strongly protects their PEBs between elections.

7.5.5 No "Shrink-wrap Effect"

One factor facilitating the spread of viruses on the modern Internet is "the shrink wrap effect", where many users use the same software and where attack mechanisms are well known and are even published on the Web. Because shrink-wrapped software is in widespread use, there are many potential targets and there are many people able to acquire the information and skills necessary to create such a virus. The iVotronic architecture is not subject to the shrink wrap effect. It is special purpose hardware and software whose architecture and implementation details are protected from wide distribution. Only sophisticated attackers with specific goals could exploit these vulnerabilities and they could only confidently perpetuate the spread of such a virus with extensive preparation and perhaps a bit of luck.

7.5.6 Virus Developer's Tradeoffs

While virus writers may exercise an immense variety of attacks and deception techniques, these techniques are subject to tradeoffs. For instance, if an attacker chooses to propagate a virus from machine to machine, she introduces the possibility that the virus could be detected by someone who knew how to look for it. FLDoS conducted such an integrity check during the ongoing audit process. In their test of six iVotronics terminals used during the election, FLDoS extracted the removable iVotronic firmware EPROM chips, placed them in a commercial EEPROM reader, and saved the firmware image into a bit-image file. They compared these extracted images to an image

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from the software's secure build process conducted by the federally approved independent testing authority that certified the iVotronic and they were identical. This provides strong evidence that no virus was resident in these iVotronics after the election and therefore strongly suggests that no virus was present on Sarasota terminals after the election.

Conversely, if virus writers elect to cover their tracks and destroy all evidence after they accomplish their task, they limit their impact by limiting their ability to perpetuate themselves.

7.5.7 Controlled Hardware and Software

The PEB is a special purpose device that is not available off the shelf. While limited availability does not provide strong systematic security, it does eliminate the shrink wrap vulnerability.

Additionally, a prospective attacker would almost certainly need to acquire one or two voting terminals for use in preparing the virus, likely through theft or fraud. The attacker would need to prepare the attack well in advance, easily taking weeks or months of technical work to create such a virus. These factors significantly reduce the potential attacker population.

7.5.8 A Sophisticated Intruder or an Insider

Some activities we describe are most easily accomplished by trusted insiders. However, insiders accept risk of suspicion as well. Additionally the number of insiders with the access and opportunity to mount this kind of attack is limited and their identities and responsibilities are well-known.

A virus-based attack by an outsider would certainly require considerable technical sophistication and preparation. Such an attack certainly could not be mounted by the average person on the street, by the average computer user, or probably even by the average software developer. The attacker would need to be skilled in computer programming and in the exploitation of computer security vulnerabilities, with broad and deep understanding of computer software and reverse engineering.

7.5.9 Margin for Error

One challenge facing any would-be attacker is the low margin for error in mounting this kind of attack, and software developers well know that perfect software, including attacking software, does not exist. If the virus contains a bug or programming error that causes it to behave in a way different from how its creator intended, that bug might have effects that could disable the attack, cause it to be detected by election officials, or expose the attacker's identity and methods to forensic analysis.

Just as all application code has defects, attacker code is also subject to defects. Moreover, it would be difficult for an attacker to test virus operation rigorously in the lab before injecting it into the wild, so an attacker would have to be concerned about the possibility of bugs in her code. There is no clear way for an attacker to influence or control the virus after it has been introduced into the system, so if she wants to remain undetected, the attacker must plan to succeed on the first try. Even with the most careful precautions, complex first try attacks are not guaranteed to succeed.

7.5.10 Temporal Proximity

Another significant mitigating factor is that, because of the delay in the spread of the virus, unless the attacker has special insider access, the attacker would need to prepare the attack in advance and inject the virus well before the election that has been targeted for attack. For instance, if an outsider wanted to manipulate the November 7, 2006 general election, the attacker would have had to fully prepare and program the virus well in advance: at a minimum, because of the complexity of the attack, we believe that the virus would have to have been introduced before or during the August 2006 primary election and probably earlier, thus could not be candidate-specific. The virus would be a "fire-and-forget" weapon: the attacker probably could not change its programming or targeting

after it was introduced. This means that the attack would need to be highly premeditated and well planned. An attacker could not mount this kind of attack on the spur of the moment or on a whim.

7.5.11 Decentralized Election Administration

An additional mitigating factor is that because each county ordinarily administers its own elections and counties do not share equipment, a virus would not spread outside the boundaries of a single county. An attacker who wanted to influence the election in multiple counties would have to inject the virus in each targeted county, and introducing the virus requires some kind of physical presence. This cannot be performed by someone living in some other country on the other side of the world or even someone in a neighboring county because these devices are not connected (for example, by a network). The attacker would have no way of knowing whether their attack would successfully change the outcome of the election.

7.6 Assessing the Factors

Taking into account all of the factors examined above, we judge there are strong reasons to believe no such virus was present during the November, 2006 election. To explain the observed undervote rate in Sarasota, Charlotte, and Lee Counties [8] (also see Section 8.1) all being caused by a virus, we would have to assume that the attacker separately attacked each of these three counties, at a corresponding increase in risk of getting caught. Also, as the discussion above highlights, these attacks would require substantial technical sophistication and extensive advance preparation. If an attacker had the capability to mount such an attack, the attacker could have exploited this capability in a far less noticeable way (e.g., by silently switching votes from one candidate to another instead of creating a high, attention-grabbing undervote rate). It is not clear what would motivate an attacker to use these capabilities in this way. Furthermore, there are other plausible explanations for the CD13 undervote that do not require such unlikely assumptions.

Finally, we found absolutely no evidence of any attack in Sarasota County that caused or contributed to the CD13 undervote, although we acknowledge that a highly sophisticated, perfectly executed attack might leave no evidence.

7.7 Modem Communications

We also investigated whether a virus might be able to spread by modem. After the polls are closed at the end of Election Day, an iVotronic may be connected to an extra “communications pack” device. The communications pack contains a modem that can transmit the election results to the county’s central server’s Data Acquisition Manager (DAM) over the phone. After examining the iVotronic source code, we could not see any way that a virus could spread from the Unity server to an iVotronic machine. Very little data is transmitted from the Unity server to the iVotronic machine, and that data is handled by the iVotronic code in a safe way. We did not see any buffer overruns or other security vulnerabilities in the code that handles data received from the Unity server. Consequently, we believe there is no way to infect an iVotronic machine over the modem.

Moreover, Sarasota collection procedures do not involve connecting iVotronic machines to modems. Rather, PEBs are transported to four regional sites where they are entered into a laptop computer through a PEB reader and the results are reported via modem connection to the election central. The modem connection is manually synchronized via a separate phone connection.

7.8 Fixing the Virus Vulnerabilities

The misplaced trust in PEB data gives a prospective attacker several optional exploits that existed in the code during the CD13 election. It was beyond the scope of this review to identify an exhaustive list of all places in the code that may be vulnerable, since much of the firmware was not executed in Sarasota. All vulnerabilities must be eliminated or mitigated before the software could be considered secure.

Fixing these vulnerabilities is likely to be non-trivial because it requires fixing a flaw in the architecture and architectural flaws tend to be more difficult to fix once they are implemented. The software needs to avoid trusting inputs from untrusted sources. This would require introducing input validation and defensive programming through much of the code.

7.9 Procedural Defenses to Remediate These Vulnerabilities

Until the iVotronic firmware is modified to fix these vulnerabilities, there are a number of procedural defenses that election officials could use to defend against the virus threat.

1. Each terminal and each PEB should be assigned to a single precinct. This assignment should never be changed or rotated among precincts and should remain fixed for the lifetime of the equipment.
2. Master PEBs should be strictly controlled using procedures similar to those applied to paper ballots. They should be constantly under lock and key during the voting day, with sign-out and sign-in procedures to maintain the chain of custody at all times.
3. Polling place procedures should minimize PEB cross-pollination: i.e., minimize the number of terminals that any particular PEB is ever inserted into and minimize the number of PEBs that are ever inserted into any given terminal. For instance, officials might set an upper bound of 5, specifying that no PEB be used with more than 5 terminals and no terminal be used with more than 5 PEBs. Optimally, a poll-worker with a PEB would be assigned a set of terminals, no other PEBs would be used on those terminals, and that PEB would never be inserted in any other terminal.
4. Supervisor terminals should be rigorously controlled. No unsafe operation should ever be performed on any supervisor terminal, if it possibly can be avoided. (See Appendix C for a list of safe and unsafe operations.)
5. Numbered tamper-evident seals should be used to deter tampering with the CF card slot. Logs should be kept of all seals applied and/or removed, and two-person controls should be applied when election workers handle CF cards.

Many of these procedures are in place in Sarasota County and their practices inspired some of our suggestions.

7.10 Passwords

A general security review is beyond the scope of our task. However, we detected significant password weaknesses that may allow an intruder to inject a virus into a terminal if they are given unsupervised access. We could not construct any scenario where password exploit could have caused the undervote symptoms without injecting a virus into the system. See Appendix D for further discussion of the password issues.

7.11 Security Summary

Our security analysis revealed several software defects that could allow an attacker to introduce a virus into the voting system that spreads through removable storage devices. We cannot absolutely

rule out the possibility that an attack was mounted during the November, 2006 general election. It is in principle possible to mount an attack that would leave no trace after the election is over and it is impossible (by definition) to detect such an attack. However, we found no evidence of an attack and there are strong reasons to believe that these vulnerabilities were not exploited in a way that caused or contributed to the CD13 undervote.

8 Analysis of Hypotheses

Team members and others have proposed numerous hypotheses that might explain the observed undervote. This section of the report deals explicitly with these hypotheses.

8.1 Assumptions.

We make the following assumptions based on information furnished by the Secretary of State concerning tests and activities not performed by our team. We did not independently verify them. We give textual names to each assumption for ease of reference.

SOURCE MATCH. The software used on the subject DREs was generated from the same source code that was examined by the team.

CVR CORRESPONDENCE. No discrepancy was observed among the following: (1) the summary tape generated on Election Day at the close of polls on individual machines; (2) the individual cast vote records (“CVRs,” or “ballot images”) recorded by the machines; and (3) the totals that were accumulated and reported by Unity.

OBJECT MATCH. The software present on the machine's internal EPROM after the election was the software originally certified.

TEST CONFIRMATION. No behavior was observed during the Secretary of State's testing that would have caused any valid selection in CD-13 to be altered or recorded as an undervote [10].

CHARLOTTE and LEE UNDERVOTE. Charlotte County observed an undervote of approximately 26% in the statewide race for Attorney General, and Lee County had a similar though slightly lower undervote rate in the Attorney General race. In Charlotte and Lee Counties, the layout of the Attorney General race was similar to the layout of the CD13 race in Sarasota County [8]. Other contests without the multiple-contest-per-page format did not have a high undervote rate.

If we hypothesize that the CD13 undervotes were caused by deliberate fraud, not by human factors considerations, then our hypothetical scenario has to include an explanation for why the Attorney General race in Charlotte and Lee Counties had such a high undervote rate. In other words, such a hypothesis has to assume that the attack was not limited to just Sarasota County, but also affected Charlotte and Lee Counties.

FLORIDA UNIQUENESS. We are unaware of any other jurisdictions in the United States that used the same iVotronic version that reported undervote percentages of the Sarasota and Charlotte Counties' magnitude.

8.2 Relevant findings from our source code review

The following definitions reflect observations made by the team based on source code review. We investigated these issues in a systematic and structured fashion and found no evidence to contradict any of these properties.

COMPLETE BALLOT. We observed no evidence during our code review of any defects in the code that would cause anything less than the complete ballot to be presented to the voter.

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PROPER DISPLAY. We observed no evidence during our code review of any defects in the code that would cause the display screens presented to the voter to inaccurately reflect the ballot from the PEB or the selections made by the voter.

ACCURATE VOTE DATA. We observed no evidence during our code review of any defects in the code that would cause the ballot images recorded to terminal flash when the voter casts her ballot to incorrectly reflect the selections made by the voter.

FULL RECORDING. The preceding three properties necessarily imply that when voters pressed the vote button, the CD-13 race was present on the ballot and, if the voter did not make any selection in the CD-13 race, the screen for that race showed no vote for either candidate, and the review screen displayed the message “NO SELECTION MADE” in the CD-13 race. We note that our observations are consistent with the explanation that ballot design combined with the absence of a prominent undervote warning led to the high undervote.

NO MALWARE. We saw no sign of any malicious logic deliberately introduced into the code to rig the election by falsely recording undervotes.

NO SERIAL RACE EFFECT. No evidence was found that a selection (or lack of a selection) in any race affected any other race or question on the ballot in any way. That is, selecting (or failing to select) a candidate in race X did not affect the presence or absence of race Y on the ballot presented to the voter or the presentation of candidates in race Y, and did not affect the proper recording of the voter’s selections in race Y or the appearance of the review screen in race Y. See Sections 4.1.7, 4.1.8, and 6.2.1.3 for further analysis.

NO SERIAL VOTER EFFECT. No evidence was found of any serial effect between voters. That is, as far as we can tell, the behavior of the machine for voter $n+1$ was not affected by any act performed or not performed by the previous voters 1 through n , assuming that voter n completed the act of casting a ballot.

NO TIME-SENSITIVE CODE. There is no indication of any time-sensitive code that would cause the machine to behave differently on Election Day than at any other time. We examined all of the source code that reads the clock and all of the code that uses any value based on a clock reading (directly or indirectly), and it was all innocuous. The amount of code in this category was limited enough that we were able to exhaustively analyze all of it, and we are confident that this code could not have contributed to an undervote.

NO VOTE PEB EFFECT. No condition giving rise to an “Invalid vote PEB” log event (of which 308 were recorded during the election) would cause the CD-13 race not to be displayed to the voter, cause a selection to be altered, or cause a valid selection to be recorded as an undervote. See Section 6.2.1.2 for further analysis.

NO SUPER PEB EFFECT. No condition giving rise to an “Invalid super PEB” log event (of which 48 were recorded during the election) would cause the CD-13 race not to be displayed to the voter, cause a selection to be altered, or cause a valid selection to be recorded as an undervote.

NO NETWORK EFFECT. No “networking” effects were observed, namely any condition occurring on machine B networked to machine A that would cause any ballot alteration or undervote on machine A.

NO PEB CLUSTER EFFECT. No “PEB cluster” effects were observed. That is, the fact that machines A and B in the same polling place were activated with the same PEB had no effect on any race on either machine or any other machine on which such PEB was used. In Sarasota, the PEB is removed from machine A before the voter votes, so no “state” caused by the voter can be transferred to machine B.

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8.3 Malicious Software Hypothesis

If the software used on the subject DREs was not generated from the same source code that was examined by the team, then the team's observations from examining that source code would be irrelevant. If the software on the machines was different, it must have been altered before or during the election, the altered version used during the election, and the altered software must have been subsequently replaced by the original certified version since this is the version that is now resident in the machines.

If the undervote was caused by malicious logic deliberately introduced into the source code, we did not find any evidence of such malicious logic in the source code examined by the team.

8.4 Hypotheses Summary

8.4.1 Machines dropped selections made in the CD13 race, creating an undervote.

Contraindications: (see Section 6.2.1.6)

- TEST CONFIRMATION
- FLORIDA UNIQUENESS. If the claimed behavior were present in the certified iVotronic software, one would expect that it would have been observed in other jurisdictions using the same software.
- FULL RECORDING

8.4.2 Votes were validly cast in the CD-13 race but were erroneously reported as undervotes.

Contraindications: (see Sections 6.2.2.1 and 6.2.3.1)

- TEST CONFIRMATION
- FLORIDA UNIQUENESS
- FULL RECORDING

8.4.3 No selection made in the CD13 race, but the review screen showed a vote, creating an undervote.

Contraindications: (see Section 6.2.1.6)

- TEST CONFIRMATION
- FLORIDA UNIQUENESS
- FULL RECORDING

8.4.4 Machine did not display the CD-13 race to some percentage of voters

Contraindications: (see Section 2.5.4 and 6.2.1.5).

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- FLORIDA UNIQUENESS
- FULL RECORDING (especially PROPER DISPLAY)

8.4.5 The particular ballot style used in Sarasota County caused the machine to behave abnormally.

Contraindications:

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- FULL RECORDING

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8.4.6 Some dynamic error not easily visible in the source code, e.g. buffer overflow or data left from previous voters caused the anomalous undervote.

Contraindications: (see Section 7)

- TEST CONFIRMATION. The error did not occur in testing, but would have had to occur with great frequency during voting.
- CHARLOTTE and LEE UNDERVOTE. Why did the problem occur in Sarasota, Charlotte, and Lee Counties, but nowhere else?
- FLORIDA UNIQUENESS

8.4.7 The touch screens were miscalibrated to prevent voting in the District 13 race.

Contraindications:

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- A very large number of machines would have exhibited the problem, and could not have been recalibrated before post-election testing. Thus, the problem would have been observed in testing.
- The undervote would have been much higher.
- Other races on other screens would have been affected but were not.

8.4.8 The touchscreens were miscalibrated so that the hotspot and corresponding candidate box were misaligned.

Contraindications:

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- A large number of machines would have exhibited the problem and could not have been recalibrated before post-election testing. Thus, the problem would have been observed in testing.
- Other races on other screens would have been affected but were not.

8.4.9 The touchscreen smoothing filter caused the undervote.

A smoothing filter is a mathematical procedure for damping transient touch screen effects such as the voter altering the position of her finger or changing the pressure exerted by the finger on the screen. The allegation has been floated on Internet newsgroups that the iVotronic touch screen filter could have caused the undervote. No explanation has been offered how the effect would confine itself to a single race on a single screen. The touch screen filter does not act differently on different screens.

Contraindications:

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- FULL RECORDING
- FLORIDA UNIQUENESS
- Other races would have been affected but were not.

8.4.10 A “controlling contest” specification linked CD-13 to a vote in a different race, thus affecting the voter’s selection in CD-13.

Contraindications: (see Section 6.2.1.3)

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- TEST CONFIRMATION
- CVR CORRESPONDENCE
- NO SERIAL RACE EFFECT
- The Sarasota County ballot styles did not contain any controlling contests (Section 4.1.8).
- No voter complaints about controlling contest messages (Section 6.2.1.3).

8.4.11 A “straight party” specification linked CD-13 to a vote in a different race, thus affecting the voter’s selection in CD-13.

Contraindications: (see Section 6.2.1.4)

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- NO SERIAL RACE EFFECT
- The Sarasota County ballot styles did not enable straight-party voting (Section 4.1.7).

8.4.12 A “special event,” such as a write-in or ADA voter, triggered an anomaly for this or subsequent voters resulting in the CD-13 undervote.

Contraindications:

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- FULL RECORDING
- FLORIDA UNIQUENESS
- Too few special events occurred to account for the undervote.
- Non-ADA machines also showed high undervote rates.

8.4.13 The actions of a voter in a race other than CD-13 affected the CD-13 race.

Contraindications:

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- FULL RECORDING
- NO SERIAL RACE EFFECT
- FLORIDA UNIQUENESS

8.4.14 Returning to a contest from the review page caused the CD-13 undervote.

Contraindications:

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- FULL RECORDING
- NO SERIAL RACE EFFECT
- FLORIDA UNIQUENESS
- Why would only CD-13 be affected?

8.4.15 A special language voter caused the CD-13 undervote.

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- FULL RECORDING
- FLORIDA UNIQUENESS
- Too few special language voters to account for the undervote.

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8.4.16 A mishandled interrupt changed the state of the machine and caused the CD-13 undervote.

Contraindications: (see Section 6.3)

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- FULL RECORDING
- FLORIDA UNIQUENESS
- A mishandled interrupt bug would have had to have affected the majority of machines to cause the observed CD-13 undervote rate, which means it must have occurred with fairly high frequency on the election; but the fact that no problem was observed during testing means that it would could only have occurred with low frequency during testing.

8.4.17 There was an error writing from RAM to the terminal memories causing valid votes in CD-13 to be recorded as undervotes.

Contraindications: (see Section 6.2.2.1)

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- FULL RECORDING (especially ACCURATE VOTE DATA)
- CHARLOTTE and LEE UNDERVOTE
- FLORIDA UNIQUENESS

8.4.18 Having multiple contests on the same ballot page caused changes depending on the order in which the contests were voted.

Contraindications:

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- FULL RECORDING
- NO SERIAL RACE EFFECT
- FLORIDA UNIQUENESS
- Why would only CD-13 be affected? In Sarasota County, there were other ballot pages containing multiple races, but there are no signs that those other races were similarly affected.

8.4.19 Variables holding information about voters were initialized to incorrect values or not initialized at all.

Contraindications:

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- FULL RECORDING
- FLORIDA UNIQUENESS
- Why would only CD-13 be affected? In Sarasota County, there were other ballot pages containing multiple races, but there are no signs that those other races were similarly affected.

8.4.20 An extra ballot style without CD13 was present on the supervisor terminal and large numbers of voters received a defective ballot.

Contraindications:

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- TEST CONFIRMATION
- CVR CORRESPONDENCE. The CVRs show that the race was present on all ballots displayed to the voters.
- FULL RECORDING
- Large numbers of voters would have reported this problem

8.4.21 The machine software made an error in determining where to write a ballot image, thereby overwriting parts of images previously written and deleting votes in CD-13.

Contraindications: (see Section 6.2.2.1)

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- FULL RECORDING (especially ACCURATE VOTE DATA)
- FLORIDA UNIQUENESS
- We studied the source code that is responsible for recording ballot images. That code was simple, clean, and well-structured. The amount of code in this category was limited enough that we were able to exhaustively review all of it. We are confident this code has no error that would cause previously recorded ballot images to be overwritten. See Section 6.2.2.1 for further analysis.

8.4.22 The actions of one voter affected the ability of the next or a subsequent voter to have a CD-13 vote recorded.

Contraindications:

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- FULL RECORDING
- NO SERIAL RACE EFFECT
- NO SERIAL VOTER EFFECT
- FLORIDA UNIQUENESS

8.4.23 Time-sensitive code was present on the machines to affect CD-13, but only during actual voting and was untestable before and after the elections (see Section 7).

Contraindications:

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- FULL RECORDING
- NO TIME-SENSITIVE CODE
- FLORIDA UNIQUENESS

8.4.24 An error caused electronic vote totals generated from ballot images to be written incorrectly to the closing PEB.

Contraindications: (see Section 6.2.3.1)

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- FULL RECORDING
- FLORIDA UNIQUENESS

8.4.25 Insertion of an invalid PEB (either vote or supervisor PEB) into the machine caused CD-13

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to be affected.

Contraindications: (see Section 6.2.1.2)

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- FULL RECORDING
- FLORIDA UNIQUENESS
- NO VOTE PEB EFFECT
- NO SUPER PEB EFFECT

8.4.26 The networking of multiple DREs together in the same polling caused CD-13 to be affected.

Contraindications:

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- FULL RECORDING
- NO NETWORK EFFECT
- FLORIDA UNIQUENESS

8.4.27 The use of the same PEB or set of PEBs among machines in the same polling place caused CD-13 to be affected.

Contraindications:

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- FULL RECORDING
- NO NETWORK EFFECT
- NO PEB CLUSTER EFFECT
- FLORIDA UNIQUENESS

8.4.28 The machines were tampered with after the election to erase the CD-13 votes on a high percentage of ballots.

Contraindications:

- CVR CORRESPONDENCE. The machine memories after the election (and presently) agree with the tallies produced and printed out at the precincts on election night. Therefore, the intrusion would have to have been made county-wide during the election and there is no evidence of such a widespread attack.

8.4.29 Firmware in the machines was tampered with to drop votes from the District 13 race and then erase itself before or at the close of polls, so no subsequent testing would reveal the intrusion.

Contraindications:

- CHARLOTTE and LEE UNDERVOTE. Any such attack should have been duplicated in Charlotte and Lee Counties, too.

8.4.30 Malware not present or visible in the source code was inserted into the machines in advance of the election to cause the CD-13 undervote.

Contraindications:

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- TEST CONFIRMATION. Any such malware would have had to have erased itself before the testing.
- CHARLOTTE and LEE UNDERVOTE. Any such attack would have had to have been duplicated in Charlotte and Lee Counties, too.

9 Conclusions

There is no topic that compares to electronic voting with regard to diversity of security demands, inherent complexity, and the intensity of emotions it elicits in society today. Voting systems demand the highest integrity standards. Everyone wants them to be perfect, but every method of software verification and validation has limitations that leave the possibility of undetected faults. Software code review has been proven to be one of the most effective methods of recognizing and identifying faults, but no software review can claim to provide absolute assurance that software is entirely fault free.

This report presents the background, organization, process, findings, and opinions of our firmware code review. We conclude with the following summarizing statements.

9.1 We are confident that no iVotronic firmware bug contributed to the CD13 undervote.

9.2 Independent audits benefit from cooperation from vendors, election officials, and developers.

9.3 Our analysis suggests several important points regarding electronic voting software.

9.3.1 Electronic voting code review demands technical specialists and is resource intensive.

9.3.2 Strong standards and standards enforcement are essential to effective audit.

9.3.3 Statistical analysis can contribute to election auditing, but it cannot replace code review. Statistical analysis and code reviews, used in combination, can be more effective than either method on its own.

9.4 Electronic voting software needs to be secure. While properly implemented procedures can mitigate many threats, neither election procedures, code reviews, paper trails, rigorous testing, advocacy group oversight, nor any other mitigating factor can systematically ensure voting system integrity where faulty electronic voting system software is employed. Secure software, written to exacting and enforced standards, and carefully constructed election system procedures are necessary to provide electronic voting system integrity.

10 Acknowledgments

Due to this project beginning and continuing through the holiday season and the new year, we owe a debt of gratitude to several FSU staff and students for their support efforts *above and beyond the call of duty*. Leo Kermes, Jon Nilson, Louis Brooks, Tina Suen, Kenny Zahn, Randy Langley, Yu Wang, Rick Bessey, Greg Thompson, and Edwina Hall responded to our calls well beyond anything we could have expected and we thank them for their efforts.

As part of our work we used Fortify Source Code Analysis (SCA), made by Fortify Software, in order to assist with the code review process. Fortify Software donated the tool to us free of charge for use on this project and we thank them for their contribution. We note that two members of the team (Bishop and Wagner) are on Fortify Software's Technical Advisory Board.

11 Team Endorsement



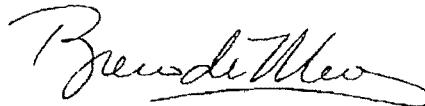
Ted Baker



Matt Bishop



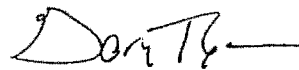
Michael Burmester
Co-Principal Investigator



Breno de Medeiros
Co-Principal Investigator



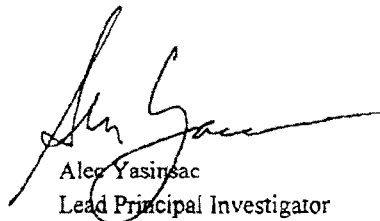
Michael Shamos



Gary Tyson



David Wagner

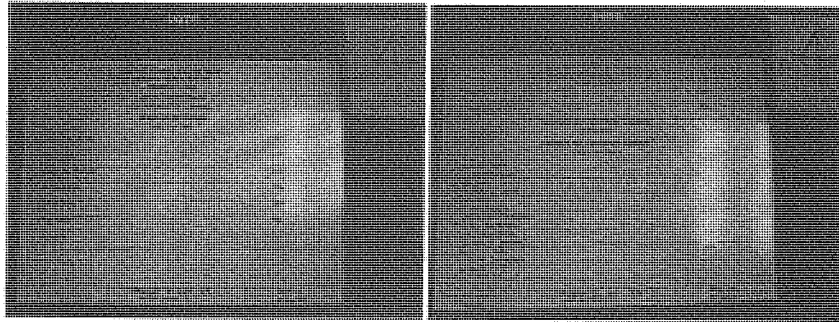


Alex Yasinsac
Lead Principal Investigator

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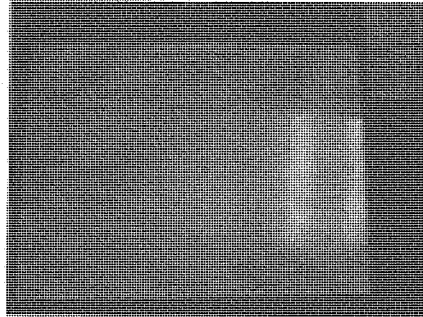
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Appendix A **CD13 Screenshots**



1st Ballot Page, US Senate Race Only

2nd Page: US Congress CD13 & Florida Governor



CD13 Re-vote Page

Appendix B Technical Analysis of the PEB Virus Threat

1 Creating an Attack Scenario

We are not aware of any plausible scenario under which an outsider could introduce a virus in the days before a general election and cause it to spread rapidly enough to infect many or most of the machines before the end of election day. Consequently, an attacker without special inside access would have to introduce the virus months in advance if they wanted to influence some particular race.

1.1 Introducing the Virus

An attacker might be able to inject the virus into a single machine by breaking into a polling place where the machines are stored unattended before election day. Or, the attacker could volunteer as a poll worker and inject the virus during a quiet lull on election day. Injecting the virus into a single machine could take only seconds, if the attacker is highly sophisticated and prepared in advance, and would not necessarily require any kind of suspicious-looking activity.

The virus spread rate depends upon many variables, on how the virus is programmed, the details of the operational processes used by county election workers, how the machines are used, and other details that one would not expect to have any effect on system security. We cannot confidently estimate how rapidly or slowly such a virus would spread without additional detail about Sarasota election management procedures. The full range of possibilities is analyzed later. The virus might propagate from election to election, taking half a dozen or so elections before the majority of machines are infected. In this scenario, a virus introduced at one point by an outsider might not have the capacity to cause large-scale influence until years after it was introduced.

Alternatively, a virus introduced by an outsider in one election might spread to all of the machines before the next election. For instance, in this scenario, a virus introduced by an outsider during the primary election might propagate rapidly enough to infect all of the machines used in the subsequent general election.

We call an iVotronic machine infected if the virus is resident in that machine's firmware. A PEB contains non-volatile storage, which is used to store the election definition file and other data. An infected machine can overwrite the election definition file with maliciously chosen data. If that happens, we say that the PEB has been infected. Due to a flaw in the iVotronic code, when the iVotronic reads the election definition file from a corrupted PEB, the iVotronic machine may become infected. If so, the virus could take up residence in the iVotronic firmware, replace the running code of the machine, and remain resident there.

The specific vulnerability is that the iVotronic software copies a variable-length nul-terminated (C-style) string from the ballot definition file into a fixed-size stack-allocated buffer. If the string in the ballot definition is too long, this will overflow the bounds of the fixed-size buffer and overwrite other parts of memory. An attacker could use well-known techniques to exploit this bug, inject malicious code into the address space of the iVotronic machine, and cause the processor to begin executing that malicious code. At this point, the attacker has complete control over the iVotronic: the iVotronic is infected.

We found numerous instances of this type of bug. Misplaced trust in the election definition file can be found throughout the iVotronic software. We found a number of buffer overruns of this type. The software also contains array out-of-bounds errors, integer overflow vulnerabilities, and other security holes. They all arise due to the fundamental architectural flaw of misplaced trust.

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A security expert might call this a failure of input validation. Standard advice in computer security is to “validate” all inputs, i.e., to check that their values fall within expected ranges and satisfy the relationships one expects, without making any assumptions that these conditions will necessarily hold until they have been explicitly checked. The architectural flaw is that the needed input validation is missing from the iVotronic software.

Finding and exploiting this vulnerability would require technical sophistication and dedication. We found these vulnerabilities by inspecting the source code. With more effort, an attacker may find these vulnerabilities without access to source code. The biggest barrier is that a would-be attacker would need access to an iVotronic machine for experimentation. Given this, a technically competent attacker may be able to, with sufficient time and motivation, discover these vulnerabilities. An attacker with the patience to reverse-engineer and disassemble the firmware would probably discover these flaws, but simpler methods would probably also suffice to reveal the vulnerability. For instance, applying a fuzzing tool to an existing election definition file would likely reveal the existence of stack-based buffer overruns, and at that point standard exploit methods might suffice.

1.2 Developing the Virus

Once the details of the vulnerability are known to the attacker, developing an attack seems likely to be straightforward if tedious. Ultimately, our best guess is that discovering this attack would be a matter of technical competence, tedium, and hard work, and it would require considerable motivation, but it would not require genius-level skills. A highly motivated and skilled lone individual could probably do everything needed to exploit the vulnerability. Consequently, the threat cannot be ignored.

Once the attacker has control of a machine, they would still need to develop a virus that automatically spreads from machine to machine. This virus could work by writing the exploit code onto every PEB that is inserted into an infected machine. Developing a working virus would require further work, but is likely within reach of a technically skilled programmer.

2 A Hypothetical Scenario: A Day in the Life of a Virus

To pull the pieces together, we illustrate one example scenario of how a virus might work by identifying what might happen in a step-by-step fashion:

1. The attacker obtains a voting machine for testing and a PEB. Of course these are controlled items and possessing them places the attacker at risk of discovery and prosecution. Stealing these items would be risky and illegal. Nonetheless, if the attacker can obtain these items, she could use these to develop malicious data and malicious code that, if placed on a PEB, can exploit the vulnerabilities and replace the running code of machines that use the PEB.
2. The attacker volunteers to serve as a poll worker. In many jurisdictions, the need for poll workers is so great that it is easy to become a poll worker simply by volunteering far enough in advance. In the worst case, the attacker might be installed as the chief poll worker in a polling place.
3. The attacker prepares an infected PEB. For instance, if PEBs are provided to chief poll workers before election day, then the attacker might take the master PEB and “infect” it by writing the malicious data and code that he prepared earlier onto the PEB. At this point, the PEB is “infected.” In a worst case scenario, if the attacker is able to use this PEB to open the iVotronic machines, then all of the machines in that polling place are infected. The attacker’s job is now done; the virus will spread without any further help from her.

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4. At this point, the virus has been introduced into circulation within this one polling place. If only one machine is infected, it can infect any PEB that is inserted into it by writing the same malicious data and code onto that PEB.
5. By the end of the day, many of the PEBs in that polling place may have become infected. Also, at least one machine in that polling place is infected, and possibly all of them.
6. At the end of the election, the machines and PEBs are returned to election headquarters and are later returned to storage.
7. During normal procedures before the next election, the PEBs are cleared, which erases the viral content on them and returns them to an uninfected state. The terminals are also cleared, but a sophisticated attacker can write the virus to prevent the clear operation from removing or detecting the virus.
8. The machines are reassigned to polling places and distributed before the next election. Some of those machines may still be infected, so some polling places in the new election will receive infected machines.
9. When opening the polls, if one of the machines in the polling place is infected, it can infect the PEB used to open it and all other machines subsequently opened with that PEB will become infected. For each polling place that started out with one infected machine, we can expect the virus to infect about half of the machines by the end of the day, on average.
10. At the end of the day, we now have a larger population of infected machines. These machines are returned to the elections warehouse and then reused in another election. Because the number of infected machines only increases and never decreases, the infected population will grow over time. Under worst case conditions, we can expect exponential growth in the number of infected machines.
11. After some number of elections, most of the machines in the population are infected.
12. Up until now, the virus might have done nothing other than spread. At some point, the virus's payload might be activated (e.g., if it is triggered to activate after a certain date). At that point, all infected machines are controlled by the attacker, and will behave as directed by the attacker program. For example, the virus may flip votes for a selected party in selected contests or may change votes into undervotes. At some pre-determined date, or after it has accomplished its goal, if its creator has programmed it to do so, the virus might self-destruct, erase all indications of its presence, and return all iVotronic machines and PEBs to their factory state.

This is one example scenario. Many variations are possible, each with their own strengths and weaknesses. There are many ways to introduce the virus initially. Also, as we shall see below, there are other ways that viruses might spread.

2.1 Hypothetical Propagation Speed

One obvious question about such a scenario is: How fast can such a virus spread?

2.1.1 Bottom-up Propagation Speed and Limits

Since propagation is only accomplished via shared media, media sharing restrictions can control propagation from the bottom up (i.e. PEB to terminal to PEB). As we noted earlier viruses are highly unlikely to spread across county lines because counties generally do not share media and equipment. If no media are routinely shared, the virus could only propagate via policy violation, human error, or illegal activity. Moreover, voting is a safe operation, so inserting a PEB into a terminal to initiate a voting session cannot infect the terminal.

Thus, the media sharing policies within counties control the propagation potential. We constructed a simulation to evaluate the propagation speed in a hypothetical environment where machines and PEBs are randomly distributed. This simulation suggested that the number of infected machines grows exponentially with the number of elections and, under these assumptions, the virus would spread to infect most machines within about five elections. However, as discussed in Section 7.5.3, these randomness assumptions do not reflect the practices in place in Sarasota County, so we reference this result only as a baseline, pessimistic scenario. Even in this case, comprehensive propagation would take three election cycles on average so an attacker who wanted to infect most of the iVotronic machines by injecting a virus into a single machine would need to prepare the virus and introduce it into circulation several election cycles in advance.

This also shows how implementing a process that consistently places terminals and PEBs in the same precinct in every election can prevent virus propagation. Again, this leverages the decentralized nature of election management to enhance security protections.

2.1.2 Supervisor Terminal

If a Supervisor terminal were infected, the process of preparing PEBs for the next election could cause every prepared PEB to become infected. The subsequent poll-opening process at each polling place with these infected PEBs would cause all of the voting terminals to become infected. This means that the Supervisor terminal is a single, central point of vulnerability.

There are three primary threats to the supervisor terminal. The first is an insider attack, which is straightforward. The second is compromise via illegal activity, essentially where an intruder breaks into the office holding the Supervisor terminal.

The third threat relates to how PEBs are handled after they are returned from the polling place. If an attacker can infect one or more PEBs after the election and return them to circulation, they may be able to infect the Supervisor terminal during preparations for the next election.

The detailed process used to handle such PEBs in Sarasota County would have a major impact on how quickly a virus would spread. For instance, if Sarasota County workers ordinarily insert every PEB into the Supervisor terminal and invoke the Clear Supervisor PEB Vote Totals operation (from the Election Central Applications menu) after the election is over, then the risk of a virus is pronounced: an attacker would just have to introduce a single infected PEB to infect the Supervisor terminal. As another example, if Sarasota County workers ordinarily perform the Qualify PEB(s) operation (from the Supervisor terminal's Service menu) on every PEB before performing any other operation on that PEB, then the risk would be significantly reduced, since this operation clears the contents of the PEB before it has a chance to infect the Supervisor terminal.

3 Ineffective Defenses Against the Virus Threat

We examined many security features of the system to see if they would be able to ward off viruses. Our analysis is as follows:

Proprietary file formats are not an effective defense against viruses. The election definition file, as stored on the PEB, is in proprietary format. This format includes several version fields, magic constants, and other values that must be correct, or else the iVotronic machine will reject the election definition file as invalid. However, this will not prevent the spread of a virus. First, it would not be difficult for a sophisticated attacker with access to an iVotronic machine to reverse-engineer these constraints. Second, these constants and version fields are the same for every iVotronic machine across the country, so they cannot be treated as cryptographically secure secrets. Third, the part of the file where the virus would be inserted does not contain any of these magic constants or

version fields. Therefore, all an attacker would need to do is to take an existing election definition file and overwrite only the portion needed to hold the virus.

- Checksums cannot prevent viruses. The iVotronic election definition file format contains an unkeyed 8-bit checksum (the sum of the bytes modulo 256). This checksum is a reasonable way to detect random errors (e.g., hardware bit flips), but it is not an effective defense against malicious activity. This kind of unkeyed checksum does not prevent malicious tampering with the contents of the election definition file while in transit, because an attacker can arrange for his change to leave the checksum field valid, or can modify the election definition file and then overwrite the checksum with a correct checksum value. The PEB also uses a CRC16 checksum to check for random errors in stored data, but this will not detect or deter malicious attacks for the same reason.
- The Election Qualification Code (EQC) does not prevent viruses. The EQC is a 32-bit election-specific secret code that must be present on a PEB; otherwise, the PEB will be rejected by the iVotronic machine. (See Appendix D for more details.) Unfortunately, this does not prevent the spread of viruses. The EQC is the same for all iVotronic machines and all PEBs in a county, for any one election. As long as the virus takes care to leave the EQC field in the PEB undisturbed, the EQC will not limit virus propagation. Also, the EQC will not prevent virus introduction. The EQC is stored in the clear, not cryptographically protected on a PEB, so a malicious poll worker who gains unsupervised access to a PEB before the end of an election could overwrite the data on the PEB, leaving the EQC undisturbed, and re-introduce it into circulation before the end of the election.

We conclude that though these mechanisms may deter or complicate an attack, they would not pose an effective defense against viruses. This is not surprising, as security is not their designed purpose. It does not indicate a flaw in those mechanisms; it is well known that mechanisms intended to improve reliability and detect random errors generally are not sufficient to prevent malicious attack. We emphasize that we do not allege that the checksums or file formats or EQC mechanisms are flawed in any way, merely that they do not serve as an effective barrier to viruses.

Appendix C **Safe and Unsafe Operations**

We note that the mere act of inserting an infected PEB into an iVotronic will not infect the machine. Infection can spread only if one invokes vulnerable operations while a PEB is inserted. We analyzed nearly all available operations and reflect the results in the tables below. If performing an operation while an infected PEB is inserted can cause an iVotronic machine infection, then we call that operation *unsafe*. If performing that operation cannot infect the iVotronic even in the presence of an infected PEB, we call that operation *safe*. In some cases we were not able to identify from the code whether the operation is safe or not; in that case, we labeled it as *unknown*. We assume that the iVotronic machine is initially uninfected and ask only whether invoking that operation can cause the iVotronic to become newly infected.

We note that the results for Voter terminals (ordinary iVotronic machines, typically used for voting) differ for Supervisor terminals. Also, in some cases the results vary according to the machine mode. We also distinguish between operations that are ordinarily performed by poll workers under normal operation (e.g., opening or closing the polls), operations that can only be invoked via the Service menu (which is only accessible using a special password), and operations that can only be invoked via the Elections Central Administration menu (which requires yet another special password). The latter two menus are normally only used by county election workers or technicians; they are not normally accessible to poll workers or voters. Our analysis for the latter two categories are presented in separate tables.

Lastly, in some cases the results depend upon whether a Supervisor or Voter PEB is inserted into the machine. Because Sarasota County uses Pollworker-activated Mode, which only uses Supervisor PEBs, we did not analyze any of the code that was associated with Voter PEBs.

The “Qualify PEB(s)” operation (accessible via the Service menu) deserves special comment. This operation clears PEB contents and erases any data previously stored on it. Therefore, not only is this operation safe to perform on an infected PEB, it also cleans infected PEBs.

There is a subtlety associated with “Qualify PEB(s).” Suppose that we have a PEB whose firmware (software that operates infrared communications) has been replaced by the attacker. The “Qualify PEB(s)” operation sends commands to the PEB instructing the PEB to erase all of its data and leaves it up to the PEB to do so. If the PEB’s firmware has been replaced by malicious code, then the PEB might ignore these instructions to erase itself. In short, if the attacker has had the chance to physically tamper with the PEB, then we cannot rely upon “Qualify PEB(s)” to erase and disinfect the PEB. On the other hand, for PEBs that have not been under the physical control of the attacker and that contain only malicious data—not malicious firmware—“Qualify PEB(s)” will indeed erase all malicious data present. We did not analyze whether there was any way for a malicious iVotronic machine to attack or corrupt the firmware or code on the PEB, as this was outside the scope of our analysis.

We note that while these virus vulnerabilities are dangerous, the number of unsafe operations is a bit misleading relative to the actual threat that they pose. Many of these operations are rarely performed so are unlikely to infect a large number of PEBs. Moreover, while there are many unsafe operations, each may require a distinct exploit and it may not be possible to exploit more than one operation with a single PEB. It may also be true that preparing a PEB for exploit may corrupt it for normal operation, thus exposing it to detection or surreptitious removal from service.

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1 Ordinary operation, Voter terminal, Supervisor PEB

This describes the ordinary functions of a Voter terminal when used in Poll worker-activated mode. (Voter-activated mode was not analyzed.)

Operation (mode)	Safe/unsafe to perform with an untrusted PEB inserted.
Opening the polls (BLANK)	<i>unsafe</i>
Voting (OPEN)	safe
Closing the polls	<i>unknown</i>
Printing reports, modem vote results on a-closed terminal (CLOSED, EMERGENCYCLOSED)	<i>unsafe</i>
everything else	<i>unknown</i> (not analyzed)

2 Ordinary operation, Supervisor terminal, Supervisor PEB

This describes the ordinary functions of a Supervisor terminal when used with Supervisor PEBs. (Operation with Voter PEBs, i.e., Voter-activated mode, was not analyzed.)

Operation (mode)	Safe/unsafe to perform with an untrusted PEB inserted.
Prepare Voter PEB	not analyzed (only used for Voter-activated mode)
Opening the terminal for voting (BLANK, LOADED)	<i>unsafe</i>
Closing the terminal (OPEN)	<i>unsafe</i> if performed before the designated time for closing the polls
Printing a late zero tape (OPEN)	<i>unsafe</i>
Printing reports, modem vote results on a-closed terminal (CLOSED, EMERGENCYCLOSED)	<i>unsafe</i>
Unlocking a locked terminal (LOCKED)	safe
everything else	not analyzed

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3 Service menu

The following comments apply to both Voter and Supervisor terminals, except where noted.

Operation	Safe/unsafe to perform on an untrusted PEB?
Clear And Test Terminal	safe
Set Time and Date	safe
Qualify PEB(s)	safe
Upload PEB to Compact Flash	<i>unknown</i>
Upload 3 Flash Memories to Compact Flash	safe
Test Printer	safe
Test Modem	<i>unsafe</i> in every mode
Upload Firmware	safe
Load System Files (Text Ballots)	safe
Enable Audio ballot on Unit	safe
Set Volume	safe
Force Coded Ballot Entry	safe
VOTE Button Configuration	safe
Enable Receipt Printing	safe
Select Progress Bar	safe
Logic And Accuracy Test	<i>unsafe</i> , if L&A testing is enabled (i.e., mode isn't OPEN or CLOSING and public count is zero), depending upon which option the user subsequently selects; see Logic and Accuracy Test menu below for details and full analysis
Enable Zoom Selection Screen	safe

3.1 Elections Central Applications menu, for Voter terminals

Operation	Safe/unsafe to perform on an untrusted PEB?
Upload Terminal Audit Data Serial	<i>Unknown</i>
Upload Terminal Audit Data to CompactFlash	<i>Unknown</i>
Print Report to Screen	<i>unsafe</i> if polls have not yet been opened (i.e., BLANK or OPENING mode); safe otherwise
Print Report To The Printer	<i>unsafe</i> if polls have not yet been opened (i.e., BLANK or OPENING mode); safe otherwise
Print Event Log	not analyzed
Print Vote Summary With Write-Ins	safe
Print Vote Summary Minus Write-Ins	safe

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3.2 Logic and Accuracy Tests menu

This menu provides several options for L&A testing. The following comments apply to both Voter and Supervisor terminals, except where noted otherwise.

Operation	Safe/unsafe to perform on an untrusted PEB?
Vote For One Test	<i>unsafe</i> in every mode
Multi Vote Test	<i>unsafe</i> in every mode
Vote Selected Ballot Test	<i>unsafe</i> in every mode
Print L And A Vote Totals to Screen	<i>unsafe</i> if polls have not yet been opened (i.e., BLANK or OPENING mode), for Voter terminals; <i>unsafe</i> in every mode, for Supervisor terminals; otherwise, <i>unknown</i>
Print L And A Vote Totals to Printer	<i>unsafe</i> if polls have not yet been opened (i.e., BLANK or OPENING mode), for Voter terminals; <i>unsafe</i> in every mode, for Supervisor terminals; otherwise, <i>unknown</i>
Transfer Results To PEB	<i>unsafe</i> if polls have not yet been opened (i.e., BLANK or OPENING mode), for Voter terminals; <i>unsafe</i> in every mode, for Supervisor terminals; otherwise, <i>unknown</i>
Clear And Test Terminal	safe

3.3 Elections Central Applications menu, for Supervisor terminals

Operation	Safe on an untrusted PEB?
Prepare PEB for Polling Location	Safe
Test Vote	Safe
Clear Supervisor PEB Vote Totals	<i>unsafe</i>
Prepare PEB for Serial Audit	Safe
Prepare PEB for CompactFlash Audit	Safe
Prepare PEB for Clear And Test	safe
Upload PEB Vote Results	<i>unsafe</i>
Print Report To Screen	<i>unsafe</i>
Print Report To The Printer	<i>unsafe</i>
Start Election Qualification Trail	safe
Color Option Numbers	safe
Print Event Log	safe
Print Vote Summary With Write-Ins	<i>unsafe</i>
Print Vote Summary Minus Write-Ins	<i>unsafe</i>

Appendix D Passwords

We analyzed the access control mechanisms in the iVotronic software to determine whether they ensure that only authorized users are able to invoke sensitive functions on the machines. The iVotronic uses password protection to control access to sensitive functions. Therefore, we analyzed all uses of passwords in the iVotronic.

We found several passwords, used for different purposes:

- The Service Menu password is used to control access to the Service Menu, which provides functions that would ordinarily only be needed in the county warehouse. The Service Menu is not normally used by poll workers.
- The ECA password controls access to the Elections Central Administration menu. This menu provides additional functionality over and beyond the Service menu. The ECA menu is only accessible from the Service menu; therefore, reaching the ECA menu requires knowledge of both the Service password and the ECA password.
- The Clear and Test password is used to control access to the clear and test operation. The clear and test operation erases all votes stored on the iVotronic machine and prepares it for use in the next election. Because this operation can irreversibly delete votes, this is a sensitive function that must be protected from unauthorized individuals.
- The Election Qualification password is used to prepare a machine for a new election.
- The Upload Firmware password is used to control the ability to upgrade the executable software resident on the iVotronic's internal flash memory. This is an extremely sensitive operation, because it allows replacing the iVotronic's software. If this were invoked by a malicious individual, they could use it to install malicious software on the iVotronic machine or to infect it with a virus. This operation is available as a menu option in the Service menu. Therefore, invoking this operation requires knowledge of both the Service password and the Upload Firmware password.
- The Override password is used to control certain exceptional conditions that should not normally arise. For instance, if the user tries to close the polls on an iVotronic machine before the official time when the election is due to end, the machine requires the user to enter an override password before proceeding.
- The modem password is used by the iVotronic machine to transmit results back to the Unity Data Acquisition Manager (DAM) system at the county headquarters. When the iVotronic machine connects to the Unity server over the telephone, it first sends the modem password over the phone. While we do not have access to the Unity server source code to check how the Unity server uses this password, it would be logical to presume that the Unity server checks that the proper password has been sent before allowing the connection to continue. The modem password does not need to be known by any human.

Typically, the override password would be the only password divulged to poll workers; the other passwords would not be revealed to poll workers, and would be told only to county election workers.

Next, we analyze password security strength to determine if they can be guessed by an ill-intentioned individual. The modem password can be set at the Unity server when the election is configured. It is included in the election definition file. It is listed in the clear in the election definition file found on every PEB and, eventually, on every iVotronic machine. It is the same for

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all iVotronic machines within a county. If it is not set, there is a default value hard-coded into the source code; this default is the same for all iVotronic machines across the nation. It is up to election officials to choose this password in a way that ensures it is unguessable, to change this password frequently (e.g., after every election), and to control who knows the password. Those are operational questions that are beyond the scope of a source code review.

Like the modem password, the override password can also be set at the Unity server when the election is configured. It too is included in the clear in the election definition file found on every PEB, and it is the same for all iVotronic machines within a county. It is selected and managed by election officials, so the management of this password is beyond the scope of a source code review.

Each of the other passwords mentioned above is fixed and hard-coded into the source code. They are the same for all iVotronic machines in the country, and likely to be known to every election official who manages elections on an iVotronic machine. They can never be changed, without changing the firmware on the iVotronic machine. This represents poor practice.

The Service Menu password, Clear and Test password, ECA password, and Upload Firmware password are three-letter case-insensitive passwords. Each one is chosen to be mnemonic and easy to remember. The problem is they are also likely to be fairly easy to guess. They follow a memorable pattern. Someone who knows one of these passwords can probably guess what the other ones are without too much difficulty. These passwords provide very little security.

The Election Qualification password is a five-letter case-insensitive password that is chosen to be easily memorable. It does not follow the same pattern as the other passwords.

The weakness of the Upload Firmware and Service passwords are of primary concern, because someone who knows those two passwords can replace the software on the iVotronic with malicious software that switches votes from one candidate to another, that turns valid votes into undervotes or deletes them entirely, that infects the machine with a virus, or that otherwise compromises the integrity of the election. These functions should be better protected.

Our judgment is that the password mechanisms on the iVotronic are poorly conceived and poorly implemented. The consequence is that the passwords by themselves do not do a good job of preventing unauthorized individuals from accessing critical system functions.

Finally, these passwords can all be bypassed using a special type of PEB, called a Factory Test PEB. When a PEB is inserted, the iVotronic machine queries the PEB to ask it what kind of PEB it is, and the PEB returns a single byte indicating what type of PEB it is. A Factory Test PEB identifies itself by returning a special single-byte value. This special value is hard-coded into the iVotronic code. Anyone who knows the special single-byte value, has access to a PEB and is able to program the PEB could construct a PEB that identifies itself as a Factory Test PEB. When a Factory Test PEB is present, all password checks are bypassed: in places where the user would normally need to enter a password, the password check is bypassed, the machine functions as though the correct password had been entered, and a log entry is appended to the event log as though the user entered the correct password. This undocumented backdoor poses a risk of unauthorized access to critical system functions, because it provides a way that a malicious individual could bypass the password checks by tampering with a PEB.

Tab 23

Freedom to Tinker

... is your freedom to understand, discuss, repair, and modify the technological devices you own.

« [Why So Many Undervotes in Sarasota?](#)
[Apple Offers to Sell DRM-Free Music](#) »

Sarasota: Limited Investigations

Monday February 5, 2007 by Ed Felten

As I wrote last week, malfunctioning voting machines are one of the two plausible theories that could explain the mysterious undervotes in Sarasota's congressional race. To get a better idea of whether malfunctions could be the culprit, we would have to investigate — to inspect the machines and their software for any relevant errors in design or operation. A well-functioning electoral system ought to be able to do such investigations in an open and thorough manner.

Two attempts have been made to investigate. The first was by representatives of Christine Jennings (the officially losing candidate) and a group of voters, who filed lawsuits challenging the election results and asked, as part of the suits' discovery process, for access by their experts to the machines and their code. The judge denied their request, in a curious order that seemed to imply that they would first have to prove that there was probably a malfunction before they could be granted access to the evidence needed to tell whether there was a malfunction.

The second attempt was by the Department of State (DOS) of the state of Florida, who commissioned a study by outside experts. Oddly, I am listed in the official Statement of Work (SOW) as a principal investigator on the study team, even though I am not a member of the team. Many people have asked how this happened. The short answer is that I discussed with representatives of DOS the possibility of participating, but eventually it became clear that the study they wanted to commission was far from the complete, independent study I had initially thought they wanted.

The biggest limitation on the study is that DOS is withholding information and resources needed for a complete study. Most notably, they are *not providing access to voting machines*. You don't have to be a rocket scientist to realize that if you want to understand the behavior of voting machines, it helps to have a voting machine to examine. DOS could have provided or facilitated access to a machine, but it apparently chose not to do so. **[Correction (Feb. 28): The team's final report revealed that DOS had changed its mind and given the team access to voting machines.]** The Statement of Work is clear that the study is to be "a ... static software analysis on the iVotronics version 8.0.1.2 firmware source code".

(In computer science, "static" analysis of software refers to methods that examine the text of the software; "dynamic" methods observe and measure the software while it is running.)

The good news is that the team doing the study is very strong technically, so there is some hope of a useful result despite the limited scope of the inquiry. There have been some accusations of political bias against team members, but knowing several members of the team I am confident that these charges are misguided and the team won't be swayed by partisan politics. The limits on the study aren't coming from the team itself.

The results of the DOS-sponsored study should be published sometime in the next few months.

What we have not seen, and probably won't, is a full, independent study of the iVotronic machines. The voters of Sarasota County — and everyone who votes on paperless machines — are entitled to a comprehensive study of what happened. Sadly, it looks like lawyers and politics will stop that from happening.

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<http://www.freedom-to-tinker.com/?p=1116>

SA-436

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Tab 24

3141

**AUDIT REPORT
OF
THE ELECTIONS SYSTEMS AND SOFTWARE, INC.'S,
IVOTRONIC VOTING SYSTEM
IN THE 2006 GENERAL ELECTION
FOR SARASOTA COUNTY, FLORIDA
(February 2007)**



Florida Department of State
KURT S. BROWNING
Secretary of State

Florida Department of State
Division of Elections
Room 316, R.A. Gray Building
500 South Bronough Street
Tallahassee, Florida 32399-0250

SA-437

EXECUTIVE SUMMARY

On November 9, 2006, pursuant to authority under sections 101.5607(1), and 101.58(2), Florida Statutes, the Secretary of State for Florida directed the Division of Elections/Bureau of Voting Systems Certification to conduct an audit of the 2006 General Election held in Sarasota County. The purpose of the audit focused on an examination of the iVotronic Direct Recording Electronic (DRE) touch screen voting device and attendant elections procedures with regard to the U.S. Congressional District 13th race. See Appendix A (Letters to Sarasota County Supervisor of Elections, Kathy Dent; November 9, 11, and 16, 2006).

The audit team created an audit plan. See Appendix B (Audit Plan). The audit plan consisted of three major components: 1) the parallel tests of the Sarasota County's Election Systems and Software, Inc., iVotronic Voting Systems, Release 4.5 Version 2, 2) an independent source code review of the iVotronic Voting System Firmware, and 3) an examination of Sarasota County Supervisor of Elections' Office's election conduct, procedures, results, and certified voting system. A number of audit plan activities were also addressed through activities arising from the machine and manual recount processes triggered under sections 102.141(6), and 102.166, Florida Statutes, in the U.S. Congressional District 13th race. With the exception of the independent source code review, the audit occurred on the premises of the Sarasota County Supervisor of Elections' offices and its offsite operational warehouse facility in Sarasota County.

The summary results of the audit are as follows:

- *Parallel Tests.* The audit team conducted parallel tests on November 28, 2006, and December 1, 2006 of the Election Systems and Software, Inc., iVotronic Voting System, Release 4.5 Version 2. The audit team concluded that the iVotronic direct recording devices correctly captured the voters' selections and accurately recorded the votes cast as displayed to the voters on the review touch screens. The results were issued on December 18, 2006. See Appendix C, Parallel Test Summary Report.¹
- *Independent Source Code Review of the iVotronic Voting System Firmware.* In December 2006, the Florida Department of State contracted with Florida State University and its Security Analysis in Information Technology (SAIT) Laboratory to conduct an independent software review and security analysis of the firmware for the Election Systems and Software, Inc.'s iVotronic Voting Systems, Release 4.5 Version 2.² The FSU/SAIT Laboratory issued its findings in a separate final report, entitled "Software Review and Security Analysis of the ES&S iVotronic 8.0.1.2 Voting Machine Firmware, February 2007."³ The project team found that the iVotronic firmware, including faults identified, did not cause or contribute to the U.S. District Congressional 13 Race undervote.

¹ Also available at: <http://election.dos.state.fl.us/index.html>

² Florida State University Statement of Work "Software Review and Security Analysis of the ES&S iVotronic 8.0.1.2 Voting Machine Firmware", 2/20/2007 available at: <http://election.dos.state.fl.us/index.html>

³ "Software Review and Security Analysis of the ES&S iVotronic 8.0.1.2 Voting Machine Firmware, February 2007"; available at <http://election.dos.state.fl.us/>

- *Examination of Sarasota County's Elections Office Election Conduct, Procedures Results, and Certified Voting System.* The audit team also examined elections procedures and practices, and the certified voting system. The examination covered election setup, procedures, voter signature count, precinct zero and result tapes, sample deployed touch screens, central county system, iVotronic EEPROMs, unity system, incident reports, security procedures, work instructions, absentee and provisional vote accumulation, ballot images from randomly selected touch screens, the installed software, and a verification of the installed firmware in the touch screens.

The audit team found no evidence to suggest or conclude that the official certified election results did not reflect the actual votes cast. The audit team also found no evidence of election procedural error, no evidence of unapproved or unauthorized software/firmware installation, manipulation or alteration, no evidence of machine malfunction, and no evidence of elections' staff misconduct that could have contributed to the higher than expected under-vote reported in the U.S. Congressional District 13 race.

The audit team found that the Sarasota County Supervisor of Elections and staff conducted themselves in conformance with established procedures and documented well their processes for elections conduct, with a few noted exceptions. In order to assist Sarasota County in its continuing commitment to improve the security and integrity of the voting system and the election process, the audit team recommends the following:

- Enhance and supplement the top-level security procedures with written lower-level work instructions in order to memorialize Sarasota County's unique processes.
- Develop a more reliable methodology for recording voter signature counts.
- Revamp the procedure to prohibit the closing of touch screens prior to closing the polls.
- Require the production of the early voting results tape on election night after the polls close.
- Develop security training procedures for elections staff and poll workers.

Finally, in light of the national attention garnered by the events surrounding the Sarasota County undervote rate in the U.S. Congressional District 13 race, and the momentum for further state and federal election reform, the audit team strongly recommends that human factors in the voting process and the interaction between voters and voting systems not be underestimated. Further in-depth study is warranted in this area, particularly in the area of effective ballot design.

I. BACKGROUND

Subsequent to the 2006 General Election, a report that a higher than expected under-vote in the U.S. Congressional District 13 race (hereinafter "District 13") in Sarasota County had occurred prompted the Florida Secretary of State to direct the Division of Elections/Bureau of Voting System Certification to conduct an audit of the Sarasota County's voting system and attendant procedures. The audit team consisted of four members from the Division of Elections/Bureau of Voting System Certification, supplemented by the support of 12 additional staff solely for conducting the parallel tests. The other part of the audit team consisted of the independent review project team assembled pursuant to a contract with the Florida State University's Security Analysis in Information Technology (SAIT) Laboratory (hereinafter "FSU/SAIT project team") to conduct the independent code review of the iVotronic voting system firmware.⁴

II. OBJECTIVES AND SCOPE

The objective of the audit focused on verifying whether the Election Systems and Software, Inc.'s iVotronic Voting System, Release 4.5 Version 2 accurately recorded voters' selections and votes cast and tabulated the results from the November 7, 2006 General Election, with regard to the District 13 race) in which a higher than expected undervote was reported. In order to accomplish that objective, the audit team developed an audit plan to ascertain if a process, definition, machine, tabulation, anomaly or other factor caused or contributed to the District 13 race's undervote total.⁵ The audit plan consisted of three major components: 1) parallel testing of the Election Systems and Software, Inc., iVotronic Voting Systems, Release 4.5 Version 2, 2) an independent source code review of the iVotronic Voting System firmware by the FSU/SAIT project team, and 3) an examination of the elections conduct, procedures, and results including verification of the certified voting system.

With the exception of the independent software source code review conducted by FSU/SAIT project team, audit activities occurred primarily at the Sarasota County Supervisor of Elections' main offices located at 101 S. Washington Boulevard in Sarasota, Florida, and at the Voting Equipment Facility (VEF) which is a warehouse located at the Interim Government Operations Center (IGOC) located at 1001 Sarasota Center Boulevard. The Sarasota County Supervisor of Election's Office stores the iVotronic touch screens at the VEF and the VEF is also where the machine and manual recounts occurred for the District 13 race. An inventory of the audit documentation is attached hereto as Appendix D. An acronym list is also provided in Appendix E.

III. PARALLEL TESTS

The audit team initiated the audit by conducting two parallel tests of the touch screens for the *Election Systems & Software (ES&S) Voting Systems, Release 4.5, Version 2, iVotronic* voting system in an effort to replicate the undervote count observed for the District 13 race during the 2006 General Election held in Sarasota County. A parallel test is a test activity

⁴ Software Review and Security Analysis of the ES&S iVotronic 8.0.1.2 Voting Machine Firmware, February 2007 available at: <http://election.dos.state.fl.us/>

⁵ See Audit Plan, November 2006, Appendix B.

during which election day voting is simulated. The point of the test is to ascertain the accuracy and reliability of the deployed voting system devices with due consideration given to ballot style, layout, coding, demographics, and operation. The test team plays the role of the voters and the ballots are cast in accordance with a predetermined test script. The parallel tests focused on the iVotronic touch screen's ability to accurately record a voter's selections as presented to the voter on the touch screen's ballot review pages. In addition, the parallel tests also examined various complaints regarding a voter's ability or difficulty in making his or her vote selections.

The audit team conducted the first parallel test on November 28, 2006 on five non-deployed iVotronic touch screens, and the second parallel test on five deployed touch screens on December 1, 2006. All the vote differences encountered during the first parallel test were the result of two script errors and eight vote selections that were not entered according to the test script. All the vote differences encountered during the second parallel test results were the result of one incorrectly documented vote selection for the ad hoc machine and two vote selections that were not according to the test script. The Parallel Test Summary Report issued on December 18, 2006, detailed the process followed by the audit team and included the audit team's findings. See Appendix B, attached and incorporated by reference in its entirety.

In summary, the audit team reported in the *Parallel Test Summary Report* that the iVotronic touch screens accurately captured the voters' selection as presented on the review screens. The parallel tests including a review of the parallel test videos did not reveal or identify any latent issues associated with vote selection or the accuracy of the touch screens' tabulation of the votes as cast.

IV. INDEPENDENT SOURCE CODE REVIEW OF THE iVOTRONIC VOTING SYSTEM FIRMWARE

On December 15, 2007, the Florida Department of State contracted with Florida State University and its Security Analysis in Information Technology (SAIT) Laboratory to conduct an independent rigorous scientific software review and security analysis of the iVotronic firmware for the Election Systems and Software, Inc.'s iVotronic Voting Systems, Release 4.5 Version 2. The FSU/SAIT Project team assembled a group of professionals (including professionals outside Florida State University) with collective expertise in computer science, security, voting systems, and software. The FSU/SAIT project team issued its findings in a separate final report, entitled *Software Review and Security Analysis of the ES&S iVotronic 8.0.1.2 Voting Machine Firmware*, February 2007.⁶

V. EXAMINATION OF SARASOTA COUNTY'S ELECTIONS OFFICE ELECTION CONDUCT, PROCEDURES, ELECTION RESULTS, AND CERTIFIED VOTING SYSTEM

The audit team also conducted a number of examinations in the following areas: election setup, procedures, voter history, precinct zero and result tapes, sample deployed touch

⁶ *Software Review and Security Analysis of the ES&S iVotronic 8.0.1.2 Voting Machine Firmware*, February 2007, available at: <http://election.dos.state.fl.us/>

screens, central county system, iVotronic EEPROMs, Unity system, incident reports, security procedures, work instructions, absentee and provisional vote accumulation, ballot images from randomly selected touch screens, the installed software, and a verification of the installed firmware in the touch screens deployed by the Sarasota County Supervisor of Elections for use in the 2006 General Election.

A. *Voting System*

The audit team examined the certified voting system deployed for use in the 2006 General Election, the *Election Systems & Software (ES&S) Voting Systems, Release 4.5, Version 2*.⁷ This voting system included enhanced optical scan firmware for precinct count (M100) and central count (Model 650) tabulators and the iVotronic touch screen with firmware version 8.0.1.2 (with the option of a 12-inch or 15-inch DRE touch screen). Sarasota County used only the 12-inch version of the iVotronic touch screen.

This voting system also included some of the election administration elements from the Unity 2.4.3 system, (renamed Unity 2.4.4.2 for this application). The Division of Elections/Bureau of Voting Systems Certification certified Unity 2.4.4.2 and the iVotronic firmware 8.0.1.2 as part of "*ES&S Voting System, Release 4.5, Version 1*". The "*ES&S Voting System – Release 4.5, Version 2*" is identical to *Release 4.5, Version 1* except for the ES&S models of optical scanners and a minor change to Unity's Election Reporting Manager (ERM). The certification timeline for this voting system follows:

<i>ES&S Voting System Release 4.5, Version 2 Certification: 0508ES&S-02</i>			
Revision	Date	Changes	
Original	08/18/05	Initial certification	
Revised	11/10/05	Corrected the Oracle version number	
Revision 2	07/17/06	Added optional equipment: Battery charger & compact flash multi-card reader/writer. Removed voter activated PEBs from the system configuration.	
Revision 3	09/08/06	Added Service Release 1 (SR-1) to Election Reporting Manager (ERM)	

As noted, the latest revision to the voting system (Revision 3, dated September 8, 2006) lists the ERM version as 7.0.0.3 with Service Release 1 (SR-1). ES&S developed SR-1 to revise the ERM report function and facilitate the extraction of undervoted ballot images from a universal primary contest (UPC).⁸ This SR-1 is an enhancement to a post-election results reporting function that sorts ballot images for a primary election and otherwise has no impact on the election definition or on election night results reporting functions. SR-1 is a revision to both Florida certified voting systems: "*ES&S Voting System Release 4.5, Version 1*" and "*ES&S Voting System Release 4.5, Version 2*". However, the Sarasota County Supervisor of Elections' Office retained the Revision 2 configuration⁹ and did not use the Revision 3 voting system with the SR-1 update.

⁷ Voting system certification # 0508ES&S-02 (Revision 2), dated July 17, 2006.

⁸ The UPC is unique to Florida's closed primary elections and occurs when an office up for election has only one political party with a slate of candidates and that race's winner will go unchallenged during the general election. Under these conditions, this district race appears on all the relevant primary ballots, thus allowing cross-party voting for this race in a closed primary election.

⁹ Configuration for the "*ES&S Voting System, Release 4.5, Version 2*" revision 2:

Election Administration:

- Unity Version 2.4.4.2
 - Audit Manager, version 7.0.2.0
 - Election Data Manager (EDM), version 7.2.1.0
 - ES&S Ballot Image Manager (ESSIM), version 7.2.0.0

Note that the Model 150 central count tabulator is no longer deployed in Florida. Sarasota County does not have the Model 100 precinct ballot counters (i.e., M100 precinct optical scanners) in its inventory. In addition, Sarasota County Supervisor of Elections coded the 2006 Primary and General Elections as text based elections. Therefore, Sarasota County Supervisor of Elections' staff did not use the iVotronic Image Manager or the Oracle database, although these items are installed as part of their Unity system. Sarasota County Supervisor of Elections' office has two banks of eight modems with each bank linked to a Data Acquisition Manager (DAM) computer with an eight-port Sealevel serial card. The second set of modems and the second DAM computer served as a backup system. The

- Hardware Programming Manager (HPM), version 5.0.3.1
 - COTS OmniDrive or similar PCMCIA interface *(for use with Model 100)*
 - Needham's Electronics EMP-11 Device Programmer w/ES&S 2102 piggyback card *(for use with Model 150)*
 - COTS Zip drive *(for use with Model 650)*
 - San Disk Image Mate or similar compact flash interface *(for use with iVotronic compact flash cards)*
 - *Optional* Compact Flash Multi-Card Reader / Writer, version 1.0
 - Election Reporting Manager (ERM), version 7.0.0.3
 - *Optional software*
 - Data Acquisition Manager (DAM), version 6.0.0.0 *(for modem communications)*
 - iVotronic Image Manager (iVIM), version 1.2.3.0 *(for bitmap system)*
 - *Optional hardware*
 - One or more Equinox multi-modem adapters, 4 or 8 ports *(for use with Data Acquisition Manager)*
 - One or more Sealevel Systems COMM+8.PCI serial adapters *(for use with Data Acquisition Manager and a jurisdiction's existing modem bank)*
 - COTS software
 - *Optional* Oracle 9i, version 9.2.0.1.0 *(for use with iVotronic Image Manager)*
 - Adobe Acrobat Reader, version 7.0 Standard or later
 - Adobe Type Basics 65 or similar font manager *(for Helvetica fonts)*
 - RM Cobol, version 7.50 or later
 - Cobol Wow, version 3.12 or later
 - Norton Anti Virus 2004 or equivalence
- Precinct Count *(one or more of the following)*:**
- Model 100 Precinct Ballot Counter, hardware version 1.3,
 - w/firmware version 5.0.0.0
 - Auxiliary equipment for Model 100:
 - *Optional* internal modem
 - Metal Ballot Box
 - iVotronic DRE (12" & 15" w/ and w/o ADA), hardware version 1.0
 - w/ firmware version 8.0.1.2
 - Auxiliary equipment for iVotronic DRE:
 - PEB Rev: iV1.7-PEB-S, iV1.7b1-PEB-S, iV1.7b2-PEB-S, iV1.7c-PEB-S
 - COTS headphones for audio ballots *(for ADA iVotronics)*
 - Communications Pack
 - *Optional* iVotronic Battery Charger, version 1.0
- Central / Absentee Count *(one or more of the following)*:**
- Model 150 Central Ballot Scanner, hardware version 1.1
 - w/ firmware version 2.1.2.0
 - Two COTS parallel printers
 - Model 650 Central Count Ballot Tabulator, hardware version 1.0 or 1.1
 - w/ firmware version 2.1.0.0
 - Two COTS parallel printers

optional Compact Flash Multi-Card Reader / Writer, version 1.0 in the certified configuration is an ES&S product created exclusively for ES&S's voting systems customers. As such, this device did require a qualification test, since it was not a commercial-off-the-shelf (COTS) item. However, Sarasota County Supervisor of Elections staff did not have the ES&S duplicator and instead used a COTS memory card duplicator; the International Microsystems Incorporated M6600 Memory Card Duplicator with 24 sockets.¹⁰

The interface between the Unity election management system and the precinct count tabulator (iVotronic touch screen) is a personalized electronic ballot (PEB) and a compact flash card. The compact flash card is a required element for all iVotronic touch screens that use a bitmap election definition and for use with the Help America Vote Act (HAVA) compliant iVotronic touch screens as a means for storing the audio files. The HAVA compliant touch screens are often generically referred to as the Americans with Disabilities Act (ADA) touch screens. However, since Sarasota County used a text-based election definition instead of a bit-map definition for the 2006 General Election, the county only needed to use the compact flash cards for the ADA iVotronic touch screens.

The audit team also found that the Sarasota County Supervisor of Elections' staff, as a matter of practice, installed and scaled compact flash cards in the ADA and non-ADA iVotronic touch screen prior to the start of election for later use in downloading iVotronic audit data after the polls had closed. The Sarasota County Supervisor of Elections' staff also maintained tracking records of the compact flash cards assigned to each touch screen and the assignment of personalized electronic ballots (PEBs) to each precinct and early voting location.

The interface between Unity and the central count tabulator (Model 650) is a zip disk. The zip disk is used to load the election parameters into the tabulator and to accept the tabulation results for upload into Unity's Election Reporting Manager (ERM). Sarasota County SOE elections staff used zip disks to transfer absentee totals into Unity's ERM and used the PEBs on election night to transfer election day totals into Unity. The elections staff used the compact flash cards to transfer the early voting totals into Unity's ERM. The elections staff did not insert early voting poll worker PEBs into an iVotronic touch screen or any other device once the polls were closed. The elections staff printed the results tapes from the early voting master PEBs after the results contained on the compact flash cards were uploaded into Unity's ERM. Likewise, the activator PEBs used on election day were never inserted into an iVotronic touch screen or any other device once the polls were closed. On election night after the poll workers closed the polls, the poll workers transported the election day master PEBs to one of four regional locations that were under Sarasota County's control. The elections staff used these four sites to modem the summary results to the central tabulation location. As a post-election activity, the elections staff uploaded the iVotronic audit data from the compact flash cards.

B. Access to Physical Facilities

The audit team site visited the offices for the Sarasota County Supervisor of Elections located at 101 S. Washington Boulevard in Sarasota, Florida, and a satellite warehouse facility located at the Interim Government Operations Center (IGOC) located at 1001 Sarasota Center Boulevard. The latter facility, called the Voting Equipment Facility

¹⁰ International Microsystems Incorporated, www.imi-test.com

(VEF), is where the Sarasota County Supervisor of Elections stores the iVotronic touch screens. The VEF also served as the site for the machine and manual recounts for the District 13 race, and the parallel tests conducted by the audit team.

Access to the VEF is restricted to the Supervisor of Elections and to authorized personnel with special identification that permits entry to the facility. Both the offices for the Sarasota County Supervisor of Elections and the VEF have video surveillance. The secured access Data Acquisition and Reporting Center (DARC) is located on the first floor of the VEF. This DARC room is where the elections staff prepares the election definition, creates the election media, and tabulates the results. The DARC has windows on three sides to allow public and media viewing. Entry to the DARC room is under a dual access control system and log sheet. The DARC room contains the isolated Unity server, a coding workstation, a ballot workstation, two Election Reporting Manager (ERM) workstations, and two data acquisition (WDAM) workstations along with a 24-port COTS compact flash duplicator, and COTS printer. Also resident in the DARC room are two Model 650 central count tabulators to provide high speed optical scanning of absentee ballots. The Sarasota County Supervisor of Elections' staff also stores in this room fifteen 12-inch iVotronic supervisor's terminals of which six were used to prepare the activator PEBs for the 2006 General Election. In addition, a COTS video system is present that feeds the ERM streaming summary reports to the canvassing board and the public viewing areas via coax cables. The video system is a Brightboard P27 Digital Signage System. Aside from the modems, this is the only other external connection to the Unity system. Between elections, the DARC room houses all the compact flash cards and PEBs, and retains the compact flash cards and PEBs that are not deployed during an election.

C. *Election Setup and Conduct*

The audit team conducted an examination of the procedures and practices for election set up and operation for the 2006 General Election for Sarasota County. The Sarasota County Supervisor of Elections' staff used both paper ballots and direct recording electronic (DRE) ballots. Absentee voters used paper ballots. Early voting, provisional, and election day voters used the iVotronic touch screens. Nine different ballot styles existed. In addition, the Supervisor of Elections designated 7 early voting sites and 156 election day polling locations. The Supervisor of Elections deployed 1,506 iVotronic DREs: 86 touch screens assigned to the 7 early voting sites and 1,420 touch screens assigned to the 156 polling locations.

Each polling location included at least one ADA iVotronic touch screen. An ADA touch screen is identical to a non-ADA touch screen except that the ADA touch screen has an optional audio ballot capability and includes a three-button voter interface integrated into the case immediately below the touch screen. The use of the term "ADA touch screen" is only intended to identify those touch screens that can satisfy the audio ballot requirements¹¹ and is not intended to imply any additional assessable capability. Sarasota County has no restriction regarding the use of an ADA touch screen for regular voting. Thus, such a device may be used by a vision impaired voter as well as those voters that do not require the audio enhancement.

¹¹ Section, 101.56062(1)(n), Florida Statutes

The Supervisor of Elections held in reserve 31 touch screens (9 non-ADA and 22 ADA touch screens). Twenty-four (6 non-ADA and 18 ADA touch screens) were ultimately available as spares as documented on November 5, 2006.

The audit team learned that three members of the Sarasota County Supervisor of Elections' staff were authorized to code an election and these individuals plus a fourth were authorized to prepare the election media. For the 2006 General Election, the elections staff created twelve qualification PEBs that were encoded with the Election Qualification Code (EQC). This is consistent with elections staff's practice to create a new EQC for every election to prevent unauthorized PEBs and/or touch screens from being used during that election. The qualified PEBs do not contain election parameters/definitions. The qualified PEBs are used to key the iVotronic touch screens with the election specific EQC identifier.

The elections staff transferred the 12 qualified PEBs to the VEF supervisor. The VEF supervisor and his staff used the qualified PEBs to key the iVotronic touch screens. Once the VEF staff completed this task, the VEF supervisor retained custody of the qualified PEBs at the VEF. The VEF staff stored the iVotronic touch screens in their protective storage case. This case also served as the poll booth when assembled and set up at the polling location. The protective case was padlocked whenever the touch screen was in its case and sealed with a taper-evident seal whenever it was set for an election. Similarly, the compact flash card also had a taper-evident seal. The VEF staff recorded the seal numbers in the custody database system. The VEF staff used an iVotronic Custody Sheet to track precinct assignment of the touch screens via their serial numbers and seal numbers. The VEF staff stacked 24 padlocked cases on a metal pallet with removable support legs. The VEF staff stored the pallets three high on these support legs, thus each stack of pallets contains 72 touch screens. The preceding description underscored the formidable logistical obstacles to accessing or tampering with the iVotronic touch screens in this facility. The audit team found no evidence to suggest or conclude that secured access to the iVotronic touch screen was comprised, or that unauthorized access occurred.

With few exceptions, the Sarasota County Supervisor of Elections staff followed the practice of using the same PEB precinct assignments that the elections staff developed for the primary election. This practice facilitated preparations for a general election and minimized re-labeling the PEBs. The records showed that all the PEBs were qualified with the same EQC used to key the iVotronic touch screens. This activity took place on a single day in the DARC room. Next, the elections staff used the Unity Hardware Programming Manager (HPM) and supervisor touch screens to load the election definition onto the qualified PEBs. The elections staff randomly selected 6 of 15 available supervisor touch screens for this activity and completed the process in one day. The elections staff used the master PEBs to open the poll on an iVotronic touch screen and used each activator PEB to bring up a ballot. Each polling location would have approximately four or five activator PEBs in addition to the master PEB. Next, the elections staff again used the master PEB to close the touch screen, thus verifying the correct operation and election definitions coded into these devices prior to sealing the PEBs in their containers. Before sealing the master PEB, the elections staff used a supervisor touch screen to clear the master PEB of any residual votes from this test. The PEBs were stored in cages under dual custody.

Note that there is no difference between a master PEB and a poll worker activator PEB other than a plastic color band. Any of these PEBs may serve as the master PEB, but to minimize poll worker confusion, the master is typically a color (green) that is different

from that used for the activator PEBs (red).¹² A poll worker activator PEB becomes a master PEB when the poll worker uses the PEB to open the polls. That PEB will then contain a list of all the iVotronic touch screens that were opened by the PEB. Once the poll worker opens all the touch screens at a polling location, the last touch screen to be opened will be connected to a communications pack that contains a thermal printer via a RS-232 serial ribbon cable. The poll worker will then print the zero tape for that polling location. After creating the zero tape, the master PEB is set aside in a secure location and not used again until the polls are ready to be closed. The poll worker will close the poll by collecting vote summaries from all the touch screens opened by that PEB. Again, the poll worker will connect the communications pack to the last touch screen to be closed and will then print the results tape. During the time that the polls are open, the poll worker will use the activator PEBs to bring up the ballot on the touch screen for each voter. The master PEB may be utilized for this task as well. However, it is a common security practice to limit the master PEB to only opening and closing the poll.¹³ The activator PEBs contain only the EQC and election definition (i.e., ballot definitions) and do not acquire any vote information during their usage. Only the master PEB will have summary results after the poll closing and collection process.

A continuing examination of the records by the audit team indicated that on election night after the polls were closed, the zero and results tape along with the master PEB were placed in a yellow transfer bag. The poll workers transferred these bags from each precinct directly to the DARC room or to one of the county's controlled regional sites. At a regional site, the elections staff modemed the results to the DARC room using the DAM host/client protocol. The remaining activator PEBs were transferred to the DARC room later that night. The zero and results tape along with the master PEB were transferred to the DARC room under police escort. The regional sites used a laptop computer with the Unity Data Acquisition Manager's client software. The DARC has a DAM host that establishes a handshake with the client. This modem activity began upon an oral indication from the DARC personnel.

The audit team also re-examined the elections parameters and results for the Logic and Accuracy (L&A) tests conducted by the Sarasota County elections staff on October 20, 2006, and on November 1, 2006 (after early voting had begun). Based on the outcome of the first L&A test, the Sarasota County Supervisor of Elections serviced as needed the Model 650 central tabulator. A second L&A test was subsequently conducted to verify the correct operation of the voting system. In accordance with state law, the Supervisor of Elections forwarded the L&A test results and certifications to the Division of Elections/Bureau of Voting Systems Certification on November 1, 2006.¹⁴ The L&A test results showed no evidence of an abnormality with the District 13 race or any other race in Sarasota County. The L&A test results accurately reflected the expected totals from the test scripts.

The Sarasota County Supervisor of Elections' staff deployed the majority of the first L&A test touch screen units for use during the early voting period. Early voting started on October 23, 2006. According to the records, a poll worker at each early voting site opened the poll with a master PEB on the morning of the first day of early voting. Each night, a

¹² ES&S has also developed a voter activator PEB that the voter uses to bring up the ballot. However, voter activator PEBs are not deployed in Florida.

¹³ Minimum Security Procedures, Sarasota Florida, p. N-4.

¹⁴ Section 101.5607(1)(b), Florida Statutes and Rule 1S-2.015(5)(f), Florida Administrative Code

poll worker recorded the public count as displayed on the touch screen. Records indicate that elections staff did not use the practice of locking the touch screen via software. Instead, at the end of each early voting day, the poll worker removed the touch screens from their booths and stacked the units in a lockable cabinet for overnight storage. The cabinet was also located in a lockable room. During this time, the touch screen was not connected to any power source, and thus, remained dormant.

When the poll was opened the next morning for continuation of early voting, the poll worker reinstalled the touch screen into their booth and reconnected the power. To obtain the public count, the poll worker very quickly, in one motion, inserted and removed the PEB. This action activated the touch screen display, thus allowing the poll worker to observe the public count. However, the iVotronic touch screen may log this action as an invalid PEB in the event log, if there is quick insertion and removal of the PEB because the quick process does not allow the touch screen adequate time to establish the proprietary handshake and capture the PEB serial number. This is the primary reason why early voting touch screens exhibit a high number of invalid PEBs in their event logs. The audit team, however, did not find this standard practice to have contributed or to be in any way correlated to the undervote reported in the U.S. Congressional District 13 race.

D. Voter History/Signature Counts

The audit team examined the precinct registers and the precinct register signature counts provided by the Sarasota County Supervisor of Elections' staff. The spreadsheet of signature counts included the public count from the touch screen results tape, the public count as recorded by the poll worker on the "Poll worker Report Form" (PRF), the poll workers' count of signatures as recorded on the PRF, the elections staff's count of the signatures, and the public recount of the signatures that occurred during the machine recount. As an additional random check, the audit team manually counted the signatures from the following 16 precincts: 27, 31, 39, 63, 76, 78, 90, 105, 106, 113, 117, 118, 134, 136, 137, and 150.

The audit team made the following observations regarding the procedures for counting signatures:

- Sarasota County Supervisor of Elections' staff's signature count differed from the signature count obtained during the manual recount in 47 of the 156 precincts. Fourteen of the 47 precincts had differences greater than one signature. The touch screen public count and the transfer of this information by the poll worker to the Poll worker Report Form (PRF) showed one precinct that was off by one vote. This difference is solely attributable to human error as the process involves only the transfer of information from the results tape to the PRF.
- The poll worker signature count differed from the touch screen count in 48 precincts of which 17 precincts showed a difference greater than one signature. The greatest difference between the poll workers' count and the touch screen public count was 8 for precinct 48, but the difference between the touch screen count and the elections staff was two for the same precinct.
- The signature count from the machine recount agreed with the elections staff's count.
- The greatest difference between the elections staff's count with the touch screen public count was four.

- The audit team's own random signature count did not match with the elections staff's count for 10 of the 16 precincts. The audit team's count for three precincts did not match with either the poll workers' count, the elections staff's count, or the count obtained during the machine recount. The audit team's signature count against the touch screen public count was a difference of three in two sample precincts, a difference of two for two precincts and a difference of one for two precincts.

The discrepancies and uncertainty associated with signature counts may be attributed to a number of factors including the lack of a clear indication that the voter had signed the precinct register. For example, when a signature appeared more as a deletion (i.e., the appearance of a scribble intended to mean a deletion of a mark), a short squiggle, or lacked the required poll worker's initials,¹⁵ it was unclear whether to count the signature or to treat it as a scratch out or an inadvertent mark. The audit team encountered this possibility in 10 of the 16 precincts they examined. The audit team found the manual signature count process to be labor intensive and prone to miscount, and not the most reliable indicator of the number of voters that actually voted at a precinct.

E. Precinct Zero and Results Tapes

The audit team examined the precinct zero and results tapes. Although it is a preferred and common practice for the poll worker to remove the zero tape from the communication pack only after the results tape is printed and one continuous tape is produced, the Sarasota County Supervisor of Elections' staff did not consistently follow this practice. In some cases a replacement touch screen was introduced after the poll worker printed the original zero tape. In another case, the vote summary from a touch screen that needed to be replaced was collected by the master PEB prior to the poll closing. The Sarasota County Supervisor of Elections' staff made this decision to collect the votes as a precaution should the touch screen fail to function when the polls were later closed. However, there are preferred alternate procedures for recovering vote totals from touch screens that fail to close properly. When a replacement touch screen later arrived, a poll worker used the master PEB to open that touch screen as would be the normal process.

When the poll worker printed the zero tape, it also revealed the vote summary of the touch screen that was replaced, because it had been closed by this master PEB. The closing process performs a vote collection and creates a vote summary on the master PEB. The premature collection of the vote summary from a touch screen needing replacement should not occur at all prior to closing the poll. It is fundamentally important to ensure the integrity of an election by obtaining the zero totals and not prematurely revealing any vote totals in the process. The audit team recommends the implementation of the appropriate procedure in lower-level work instructions or in a revision to the poll workers' training manual.

As for the early voting results tapes, the audit team found that the Sarasota County Supervisor of Elections' staff did not produce the tapes until the day following election day. Although the results tapes cannot be obtained until after the election day polls are closed, the preferred procedure is to upload the early voting audit data into Unity's ERM on election night after the polls are closed. Immediately following or concurrent with this activity, the early voting results tapes should be printed using the early voting master

¹⁵ Section, 98.461(2), Florida Statutes

PEBs. It is important to ensure the integrity of an election by obtaining the results tapes as soon as possible and in view of the public. The audit team recommends that this procedural step be addressed in a lower-level work instruction for the DARC election officials.

The audit team also examined the zero and result tapes, and the results tapes printed from the vote recollection process in the machine recount. The audit team verified that the zero tapes indicated the counters were set to zero when the polls were opened. The audit team also examined the public count and protective count from both sets of results tapes along with the time and date that the polls were closed. The difference between the results tape's protective count and the zero tape's protective count should equal the results tape's public count. The audit team verified that the public count matched the difference between the beginning and ending protective counts and the machine recount results were identical to the original results tapes.

F. *Sample Deployed Touch Screens*

The audit team conducted an examination of a small sample of zero and results tapes for 46 touch screens representing 1,792 ballots from the North Port Municipal early voting site and the following precincts: 1, 31, 61, 85, 94, 130, 152. The 46 touch screens represent approximately 3% of the 1,506 touch screens deployed during the 2006 General Election for Sarasota County. Two of the 46 touch screens were used during early voting.

Next, the audit team obtained the event log reports for these same 46 touch screens and manually counted the number of ballots cast and confirmed that the results tapes' public count agreed with the event logs. The audit team also obtained and examined the ballot images for these 46 touch screens. The audit team manually counted the votes recorded within the touch screens' ballot images for the U.S. Congressional District 13 and Attorney General races. The audit team found the manual count of the votes cast for these two races agreed with the results tapes. However, as noted for the precinct register's signature count, there were several occasions where the audit team had to recount the votes from the ballot images to arrive at a consistent number.

The audit team confirmed that the vote totals obtained from the results tape matched the data that was uploaded into Unity's ERM, just as was verified during the machine recount. The audit team did not find (and the machine recount did not reveal) any evidence to suggest or conclude that the collection and final tabulation of touch screen vote totals were not accurately tabulated.

G. *Central Count System*

The Sarasota County Supervisor of Elections staff provided the audit team with access to the absentee signature envelopes. The audit team manually counted the accepted ballot signature envelopes from 16 absentee precincts as a random check and verified this count against the number of accepted ballots counted during the machine recount. The 16 precincts included: 27, 31, 39, 63, 76, 78, 90, 105, 106, 113, 117, 118, 134, 136, 137, and 150. These are the same precincts that the audit team used to count the precinct registers' signatures. The central count system consists of two Model 650 central tabulators, locally identified as Ballot Reader #1 and Ballot Reader #2. The COTS printers are Okidata Microline 520 dot matrix printers. Note that the audit team was not able to access a

sample of the absentee ballots to perform a manual count of the CD-13 race, because of the pending litigation of this particular race¹⁶

H. iVotronic EEPROMs

The audit team selected six iVotronic touch screens for examination of the installed firmware. Two of these touch screens were previously used in the parallel testing and the remaining four units were election day touch screens that had never been reactivated since they were closed on election night. For the first touch screen examined, the audit team powered on the device and utilized the touch screen's firmware to download the audit data prior to physically extracting the EEPROMs. The EEPROMs are AMD's Am29LV160D flash memory. For the remaining units, the audit team extracted the EEPROMs prior to powering on the touch screens. Therefore, the information extracted from three of the four election day units represents information from touch screens that were in the exact same state these voting devices were in when they were closed on election night. This is the recommended course of action whenever one extracts the memory contents from an iVotronic touch screen.

The audit team used a Needhams EMP-300¹⁷ device programmer with a Pivot flash module programmer adapter card and Needham's EMPWin application to download the memory contents from the third and fourth EEPROMs. The third memory chip is one of the three redundant memories that contain the election definition, a configuration history, an event log, and the ballot images. The audit team used ERM to extract the event log and ballot images from the EEPROM 3 memory dumps and found this information in agreement with the information provided by the audit data. The fourth memory chip contains the touch screen firmware mapped to high memory. The audit team compared the extracted firmware to the escrowed firmware using PrestoSofts' ExamDiff Pro application.¹⁸ The audit team found the installed firmware to be an exact copy of the DOE escrowed firmware. Additionally, the SHA-1 hash of this firmware using Maresware's hash software is an exact match.¹⁹ The SHA-1 hashes for iVotronic firmware version 8.0.1.2 are:

File name	HASH value	File size (bytes)
DOE escrowed firmware with checksum set to zero:		
V8012.fmw	E9EFF14B28A49504DBEC9C2CA2DBC6929EC7F27E	393216
Sarasota's installed firmware:		
V0106366-V8012.bin	E9EFF14B28A49504DBEC9C2CA2DBC6929EC7F27E	393216
V0110515-V8012.bin	E9EFF14B28A49504DBEC9C2CA2DBC6929EC7F27E	393216
V0106775-V8012.bin	E9EFF14B28A49504DBEC9C2CA2DBC6929EC7F27E	393216
V0105712-V8012.bin	E9EFF14B28A49504DBEC9C2CA2DBC6929EC7F27E	393216
V0105346-V8012.bin	E9EFF14B28A49504DBEC9C2CA2DBC6929EC7F27E	393216
V0117973-V8012.bin	E9EFF14B28A49504DBEC9C2CA2DBC6929EC7F27E	393216

The list below identifies the iVotronic touch screens and their last activity prior to extracting the firmware.

¹⁶ See Jennings v. Elections Canvassing Commission et. al., Circuit Court for Leon County, Case 2006, CA 002973.

¹⁷ Needhams Electronics Inc. available at: <http://www.needhams.com/software-download.html>

¹⁸ PrestoSoft available at: http://www.prestosoft.com/ps.asp?page=edp_download

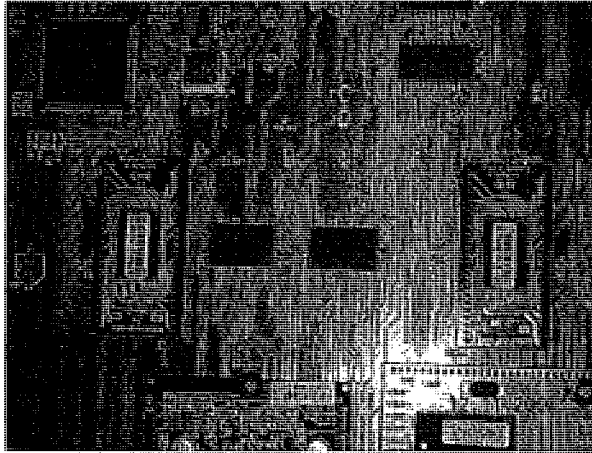
¹⁹ Hash.exe and Hashcmp.exe available from Mares and Company at: <http://www.dmares.com/index.htm>

iVotronic Sn #	Precinct	Last used	Last use
V0105712	105	Nov 7, 2006	Election day (<i>used firmware to first dump the memory</i>)
V0106775	113	Nov 7, 2006	Election day
V0106366	117	Dec 1, 2006	Parallel test
V0117973	76	Dec 1, 2006	Parallel test
V0105346	118	Nov 7, 2006	Election day
V0110515	117	Nov 7, 2006	Election day

The audit team found no evidence to suggest or conclude that Sarasota County's iVotronic touch screens firmware was compromised, altered or different from that held in escrow by Florida Department of State's Division of Elections.

In order to preserve the non-deployed touch screens for future analysis of the installed firmware, the audit team chose not to extract any information from these touch screens. These touch screens are the most logical touch screens on which to conduct further analysis provided no attempt is made to power the units during their storage. The audit team recommends that any future examination of the spare units should be preceded first by removing the EEPROM 3 and EEPROM 4 memory modules and obtaining a memory dump of their contents prior to activating these units.

The removable memory modules are shown in the following photo (EEPROM 3 is on the left, EEPROM 4 is on the right, and EEPROMs 2 and 1 are surface mounted between the two removable chips):



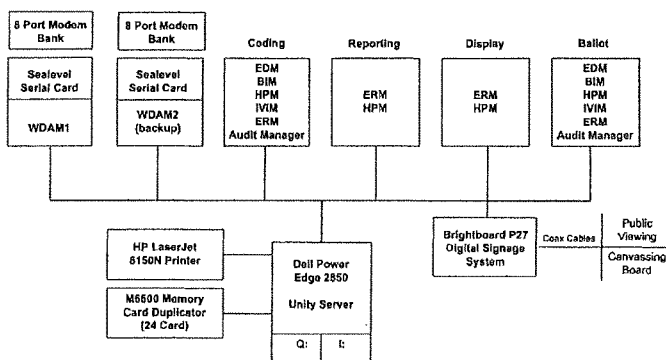
I. *Unity Server*

The audit team examined the Unity server. The Unity server is a Dell Power Edge 2850 and each of the Unity workstations is a Dell Dimension 9100. The operating system and the election reporting system requires a user name and password for each level of access. The audit team extracted a SHA-1 hash of the installed static files for comparison with the software held in escrow by the Florida Department of State's Division of Elections and as

installed on a similar computer. That comparison using the SHA-1 hash confirmed that the static files matched the files retained by department. The escrowed software is the witnessed compiled executables and support files that the Independent Test Authority (ITA) labs provided directly to the department. The audit team also reexamined Sarasota County's voting system acquisition filing and verified that the installation disks matched the escrowed uninstalled files. Based on a review of these data sets, the audit team found no evidence to suggest or conclude that the static files of this voting system software were altered or updated.

In order to preserve the exact settings used to create and tabulate the 2006 General Election for Sarasota County, the audit team also acquired screen shots within the entire set of Unity modules to document each menu setting. The Sarasota County Supervisor of Elections' staff have preserved their Unity system's hard drives, and replaced these drives with new ones in conjunction with ongoing litigation.²⁰

Sarasota County, Florida
Unity 4.5 Version 2 Voting System Configuration



J. Incident Reports

The audit team forwarded to the FSU/SAIT project team for the independent source code review the incident reports compiled by the Sarasota County Supervisor of Elections' staff for the 2006 General Election. The incident reports represent a total of 1,920 documented events of which 455 were related in some manner to the iVotronic touch screen. The audit team reasoned that the FSU/SAIT project team could categorize this data and correlate the information to relevant source code segments that may need a more thorough examination.

²⁰ See Jennings v. Elections Canvassing Commission et. al., Circuit Court for Leon County, Case 2006, CA 002973.

The FSU project team's review and findings are discussed in its separately issued final report.²¹

K. Security Procedures and Work Instructions

The audit team interviewed Sarasota County Supervisor of Elections' staff to ascertain the extent to which the staff followed its established Minimum Security Procedures.²² The audit team found overall that Sarasota's County Supervisor of Elections' Minimum Security Procedures met the basic requirements delineated in the Department of State's minimum security procedures rule²³ and address the major elements of the Division of Elections' Technical Advisory issued March 2006.²⁴ The audit team found that the elections staff complied with their documented processes, with a few exceptions noted.

The audit team noted the importance of Sarasota County Supervisor of Elections' existing multi-layered security that makes use of dual access control and positive inventory tracking methods to minimize security risks. However, the audit team noted the absence of any security training plans for the elections staff and written documentation of certain procedures currently committed only to rote memory.

L. Ballot Design Layout

The audit team examined the ballot design layout for the District 13 race in Sarasota County to determine if it was a contributing factor to the higher than expected undervote rate. The touch screen's first visual ballot image page presented the voters with the first of the federal races, the U.S. Senate race. The second visual ballot image page showed at the top the last federal race, the U.S. Congressional District 13 race. The District 13 race was followed by a highly visible header for the slate of statewide office races that started off with the Governor/Lt. Governor's race followed by its long list of candidates.

As noted earlier, the iVotronic touch screen provides voters with an opportunity to change or correct their vote selections on the review pages, prior to casting their vote. During the parallel testing of the sample Sarasota County iVotronic touch screens, the touch screens accurately recorded each test voter's selection when a test voter chose to make a selection in a race and cast a vote.²⁵ The audit team could not determine definitively whether the prominently displayed "STATE" header caused voters to overlook the federal District 13 race at the top of the ballot page.

A comparative review of the undervote rate for absentee ballots voters in Sarasota County for the District 13 race showed no demonstrable difference between the undervote rates for absentee ballot voters in Charlotte, DeSoto, Hardee, and Manatee counties who also had the District 13 race on their ballots.

²¹ Software Review and Security Analysis of the ES&S iVotronic 8.0.1.2 Voting Machine Firmware, February 2007, available at: <http://election.dos.state.fl.us/>

²² Minimum Security Procedures for Voting Systems – Sarasota County, Florida, Revised June 2006.

²³ Rule 1S-2.015 Minimum Security Procedures for Voting Systems, Florida Administrative Code, available at: <http://election.dos.state.fl.us/laws/AdoptedRules/ElectionsRules.shtml>

²⁴ Technical Advisory – Enhancements to Voting Systems Security Procedures, 3/03/06, Division of Elections, available at: <http://election.dos.state.fl.us/votemeth/index.shtml>

²⁵ Parallel Test Summary Report – Sarasota County, Florida - 12/18/06, Division of Elections, available at <http://election.dos.state.fl.us/index.html>

However, an examination of the undervote rate for voters using the Diebold TSx touch screen in Hardee County showed an undervote rate of 20.7% for the District 13 race.²⁶ This rate was based on the reported results of 12 undervotes out of the 58 votes that were cast on the Diebold TSx touch screen. In contrast, the undervote rate for the District 13 race in Hardee County was 5.6% for votes cast and tabulated on its optical scan voting system. This rate was based on a reported 253 undervotes out of 4,526 votes cast.²⁷

In examining the Diebold TSx touch screen ballot layout, the audit team noted that the layout consisted of a two-column presentation. The first ballot image page contained the federal races in the first column, leading off with the U.S. Senate race. The U.S. Congressional District 13 race appeared at the very bottom of the first column. The second column on the first page started off with the state races including the Governor/Lt. Governor race followed by the race for Attorney General. This layout and a similarly high undervote rate in Hardee County for the touch screen suggest the strong likelihood that like the ballot layout for Sarasota County, a non-optimal ballot design may have contributed to the undervote in Hardee County as well.

The audit team recognizes that a well-designed ballot layout is an important component of the voting process and that the ability of a voting system to accurately reflect the voter's intent to make a selection is inextricably tied to ballot design. The audit team recommends further in-depth review and study of this area which may also assist in the development of ballot design guidelines for use by election officials.

VI. CONCLUSION

Based on the foregoing, the audit team found no evidence to suggest or conclude that the Sarasota County iVotronic touch screens failed to accurately capture votes in the U.S. Congressional District 13 race, that a malicious code²⁸, or that the certified voting system was compromised or changed other than as certified or operated other than in the manner expected. The audit team found no evidence to suggest or conclude that the certified elections results are not an accurate reflection of the votes cast and tabulated.

Furthermore, the audit team found the Sarasota County Supervisor of Elections and staff conducted themselves appropriately, documented their processes well, and followed established procedures and standard practices, with relatively few noted exceptions. In order to assist Sarasota County in its continuing commitment to improve the security and integrity of the voting system and the election process, the audit team recommends the following:

- Enhance the top-level security procedures with written supplemental lower-level work instructions in order to memorialize Sarasota County's unique processes.
- Develop a more reliable methodology for capturing voter history

²⁶The audit team specifically examined a breakdown of Hardee County's recount data posted on the county's website http://www.hardeecountyelections.com/SOVC_REPORT_PAGE.htm

²⁷Note that unlike Sarasota County which uses solely touch screen voting systems, Hardee County is a county that uses primarily the Diebold Accuvote optical scanner voting system but provides a touch screen (the Diebold TSx) in each polling place to comply with federal requirements for voter accessibility for the disabled under the Help America Vote Act.

²⁸Classes of malicious code include viruses, worms, 'Trojan horses' or other harmful or intrusive auto-executable software.

- Revamp the procedure to prohibit the closing of touch screens prior to closing the polls.
- Require the production of the early voting results tape on election night after the polls close.
- Develop formal security training procedures for the elections staff and poll workers.

Finally, in light of the national attention garnered by the events surrounding the Sarasota County undervote rate in the U.S. Congressional District 13 race, and the momentum for further state and federal election reform, the audit team strongly recommends that human factors in the voting process and the interaction between voters and voting systems not be underestimated. Further in-depth study is warranted in this area, particularly in the area of effective ballot design.

Appendix A

**Florida Department of State Letters Regarding Voting System Audit
in Sarasota County, Florida**

- Letter from Secretary of State Sue M. Cobb to Sarasota County Supervisor of Elections, Kathy Dent; November 9, 2006
- Letter from Secretary of State Sue M. Cobb to Sarasota County Supervisor of Elections, Kathy Dent; November 11, 2006
- Letter from Secretary of State Sue M. Cobb to Sarasota County Supervisor of Elections, Kathy Dent; November 16, 2006

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STATE OF FLORIDA
DEPARTMENT OF STATE

JEB BUSH
Governor

SUE M. COBB
Secretary of State

November 9, 2006

The Honorable Kathy Dent
Sarasota County Supervisor of Elections
101 South Washington Blvd.
Sarasota, FL 34236-6940

Dear Supervisor Dent:

As Division of Elections Director Roberts discussed with you today, pursuant to the Department of State's authority under Sections 101.5607(1)(c) and 101.58(2), Florida Statutes, I am directing members of my staff to conduct an audit of Sarasota County's voting system and attendant procedures with regard to the United States Congressional District 13 race.

The Secretary's Chief of Staff Heidi Hughes and Chief of the Division of Elections Bureau of Voting Systems Certification will be in Sarasota today for discussion and preliminary conversations.

We appreciate your invitation for our staff to observe any recount of this race, should one be ordered, along with you and your staff's full cooperation as we conduct the audit.

At this time it is expected that the members of our audit team will include:

David Drury, Chief of the Bureau of Voting Systems Certification
Danielle Scoggins, Senior Management Analyst
Richard Harvey, Government Operations Consultant
Sharon D. Larson, Deputy General Counsel

Sincerely,

Sue M. Cobb

Sue M. Cobb
Secretary of State

R. A. Gray Building • 500 South Bronough Street • Tallahassee, Florida 32399-0250
Telephone (850) 245-6500 • Facsimile: (850) 245-6125 • <http://www.dos.state.fl.us>

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STATE OF FLORIDA
DEPARTMENT OF STATE

JEB BUSH
Governor

SUB M. COBB
Secretary of State

November 11, 2006

The Honorable Kathy Dent
Sarasota County Supervisor of Elections
101 South Washington Blvd.
Sarasota, FL 34236-6940

Dear Supervisor Dent:

We thank you for your continued commitment and cooperation in the process of examining Sarasota County's voting systems and procedures with regard to the United States Congressional District 13 race. Given our level of concern about this race and the number of voters who did not choose a candidate, we are paying very serious attention to the matter. An exacting and thorough audit is mandated and will be executed in an expeditious manner. The Department, working with you and your staff, will look into all possibilities to understand whether the number of undervotes in this race is indicative of an anomaly. Our shared goal is to ensure the integrity and accuracy of voting systems and elections in Florida.

Certain audit activities can be commenced immediately, including manual review of all relevant records and parallel testing to simulate election day conditions using Sarasota County direct recording electronic (DRE) touchscreens prepared for, but not used in, the general election. Based on preliminary discussions between you and Department staff, we have determined to proceed with the audit in the following manner: Florida Division of Elections, Bureau of Voting Systems Certification personnel will conduct an audit of the Sarasota County voting system beginning on November 13, 2006. The audit team, led by Mr. David Drury, Bureau Chief, may be supplemented by additional personnel as the need arises. The structure of this audit will not interfere with the conduct of any recount in the 13th Congressional District.

In addition, the audit team will conduct at least two parallel tests of the iVotronic voting equipment. The first of these tests will utilize at least four of the iVotronic DRE touchscreens that were held in reserve and not deployed on Election Day. The second such test will utilize actual touchscreens used during the election once the recount is complete. Each of these tests will require 14 hours to complete and it is anticipated that the first test will be conducted and completed on Wednesday, November 15, 2006. Each parallel test will utilize the actual ballot images and event logs from the Sarasota County general election as the test script. These items will be extracted from the Election Day audit data of those iVotronic touchscreens identified by

R. A. Gray Building • 500 South Bronough Street • Tallahassee, Florida 32399-0250
Telephone: (850) 245-6500 • Facsimile: (850) 245-6125 • <http://www.dos.state.fl.us>

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The Honorable Kathy Dent
November 11, 2006
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the team based on precinct demographics and the magnitude of undervotes in the 13th Congressional District. Results from the first parallel test should reveal the presence of an anomaly within the touchscreen if such an anomaly is present. The second parallel test is intended to confirm the results of the first parallel test.

The audit plan includes elements that encompass the election process, ballot accounting, tabulator performance, and forensic analysis. The audit will focus on the following areas: the precinct count equipment, the central count (absentee) equipment, the ES&S Unity System (election definition and tabulation), the installed iVotronic firmware and source code, the Sarasota County elections security procedures, event logs, and the logic and accuracy records. The intent of this portion of the audit is to ascertain whether a process error or malicious action influenced the number of undervotes.

Our audit team has extensive expertise. We have enclosed biographical information on the Division of Elections technical staff participating in the audit. Information on further staffing will be forthcoming.

We all agree that the audit and testing procedures are critical steps in determining accuracy of the election and assuring voters that they can be confident in the results.

Sincerely,

Sue M. Cobb

Sue M. Cobb
Secretary of State

Attachment

**FLORIDA DEPARTMENT OF STATE****Sue M. Cobb**
Secretary of StateFlorida Department of State Audit Team
~Sarasota County, November 13, 2006~

David R. Drury is the Bureau Chief of the Bureau of Voting Systems Certification for the Florida Division of Elections. As such, Mr. Drury serves as the team leader in both voting system certifications and auditing. Mr. Drury holds Bachelor degrees in Mechanical Engineering, History and Political Science along with a Masters in Business Administration. Mr. Drury has thirteen years of research, design and development experience with Boeing and GE Aircraft Engines which included computer modeling and an extensive hardware testing background. Mr. Drury earned several "GE Outstanding Achievement Awards" and was nominated for "GE Aircraft Engines Product Quality Award" during 1990 at the Evendale, OH facility. Mr. Drury also acquired experience in the electronics industry while at General Dynamics Tallahassee Operations where he served as a Sr. Industrial Engineer - ISO 9000 Management Representative, and Lead Auditor. During that time, Mr. Drury also served as an adjunct professor at the FAMU - FSU College of Engineering where he taught statistical quality control. Immediately prior to joining state government, Mr. Drury was Director of Quality Assurance for Martin Electronics, Inc. In March 2004, Mr. Drury joined the Bureau of Voting Systems Certification as a Sr. Management Analyst and was promoted to Bureau Chief in December, 2005. Mr. Drury is experienced with process audits, performance audits, and voting system audits.

Danielle Scoggins earned her Bachelor of Science Degree in Management Information Systems from Florida State University's College of Business in 2002. Prior to joining the Bureau of Voting Systems Certification, Ms. Scoggins worked for the Florida Department of Revenue for five years in the SUNTAX program and Internet Service Provider department. During that time Ms. Scoggins gained experience with auditing system reports, establishing user requirements, developing prototypes, testing system integrity, and performing analytical reviews of software requirements and design documents. Additionally, Ms. Scoggins has experience with program planning and evaluation. Ms. Scoggins assumed the Sr. Management Analyst position in March, 2006. Ms. Scoggins' current responsibility is managing the functional test activities during certification events.

Richard Harvey holds a Bachelors degree from Florida State University. Mr. Harvey joined the Division of Elections in 2004 working with voter registration and voter assistance groups. Mr. Harvey was promoted in 2005 and again in 2006 to a Government Operations Consultant position. Mr. Harvey is responsible for reviewing and maintaining voting system acquisition filings, reviewing voting system applications, and researching new technology voting systems. Mr. Harvey has considerable experience with precinct tabulation devices and is considered a

Precinct Equipment Specialist. Mr. Harvey provides technical support to Florida's 67 counties and has conducted training classes on the various precinct voting equipment. Mr. Harvey is a member of the Florida voting system certification test team.

Rosetta Cade has a Bachelors degree in Computer Information Systems with a background in MS Windows 2000 and XP. During her college years, Ms. Cade was involved with software development, network administration and troubleshooting system problems. Upon graduation, Ms. Cade worked for the Florida Department of Management Services and worked as a computer system specialist at the Florida Department of Health. In that position, Ms. Cade was responsible for configuring new and existing systems and maintaining the test database. Ms. Cade joined the Bureau of Voting Systems Certification in May 2006 and is a member of the voting system certification test team. Ms. Cade's primary responsibility is focused on the election management system software.

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STATE OF FLORIDA
DEPARTMENT OF STATE

JEB BUSH
Governor

SUE M. COBB
Secretary of State

November 16, 2006

The Honorable Kathy Dent
Sarasota County Supervisor of Elections
101 South Washington Blvd.
Sarasota, FL 34236-6940

Dear Supervisor Dent:

Now that Judge Economou has cleared the way for the state's audit to proceed, we will determine when to reschedule parallel testing. In the meantime, in the interest of maintaining a transparent, fair and meaningful process, our experts will continue interacting with outside experts and experts made available by the candidates.

Division of Elections staff will coordinate with you and your staff to arrange a time for parallel testing after the recount process is complete. As the audit will be conducted in an open and public manner, once a parallel testing date is determined, we will provide sufficient advance notice to the public in order to allow interested parties to observe.

We appreciate your continued cooperation and commitment to this process.

Sincerely,

A handwritten signature in cursive script that reads "Sue M. Cobb".

Sue M. Cobb
Secretary of State

Office of the Secretary
R. A. Gray Building • 500 South Bronough Street • Tallahassee, Florida 32399-0250
Telephone: (850) 245-6500 • Facsimile: (850) 245-6125 • WWW: <http://www.dos.state.fl.us>

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Appendix B

Audit Plan

BVSC provided the following audit plan to the Supervisor of Elections:

Audit Plan
Sarasota County Florida (November 13 - TBD, 2006)

Note: This audit plan may change in response to the in-process audit findings. Activities that require access to the deployed equipment will be performed upon completion of the recount process.

Opening meeting

- Purpose and scope
- Team introduction
- Available resources
- Audit transparency
- Audit overview
 - Examination of the precinct count equipment
 - Examination of the central count equipment
 - Verification of the election management system (ES&S Unity Voting System) software
 - Examination of the Sarasota County's elections security procedures and activities
 - Parallel tests (*simulations of election day voting*)
 - Closeout meeting

Precinct Count Examination

- Obtain the following:
 - Precinct list
 - List of voting devices at each precinct
 - Equipment tracking logs for election media / equipment
 - Zero and results tapes for all the voting devices (original and recount)
 - Number of spoiled ballots that occurred at each precinct, if any
 - Number of provisional ballots issued at each precinct, if any
- Examine precinct voter rolls
 - Manually count number of voter signatures
- Examine precinct zero tapes
 - Verify counters are zero
 - Note the time/date stamp & signatures
- Examine precinct results tapes
 - Verify the public count from the protective counts using the zero and results tapes
 - Note the time/date stamp & signatures on the results tape
- Examine precinct results and precinct voting equipment
 - Select at least 45 DREs used during election day and obtain their ballot image reports
(This selection TBD based on precinct demographics and magnitude of 13th Congressional District undervote)
 - Manually count the number of votes for the 13th Congressional District race from the ballot image report
 - Determine the number of undervotes for this race
 - Compare the observed 13th Congressional District undervote total to the results tape
 - Manually count the number of votes for additional randomly selected contest/candidates
 - Manually count the number of ballots cast
 - Obtain the event logs for the selected DREs and manually count the number of ballots cast
 - Verify the ballot count from the event logs, the ballot images, and the results tapes match each other
- Sum the total ballots cast from the results tapes for each precinct
 - Compare the precinct ballot totals with the totals from the precinct voter rolls
 - Compare the precinct ballot totals with the reported totals from the Election Reporting Manager (ERM)
- Repeat the above activities for early voting except sample size to be at least 2 DREs
- Examine the precinct voting equipment
 - Download the EEPROM .bin files from each of the selected DREs
 - Examine the EEPROM files for any evidence of disagreement between the redundant memory chips

Extract the firmware .bin file from one of the selected DREs
*(*The following activities to be performed at Division of Elections in Tallahassee, FL)*
 *Obtain the firmware EEPROM .bin file from the Division of Elections' 12th DRE
 *Hash the .bin file segment that contains the firmware for both voting devices
 *Compare the hash results to verify the installed firmware
 Perform an independent source code review of the firmware
(The independent review will be performed by TBD)

Central Count Examination by precinct, if time permits
 Manually count the number of acceptable absentee ballot signatures
 Manually count the number of acceptable absentee ballots
 Compare the signature count to the absentee ballot count
 Manually count the votes for the 13th Congressional District from at least one precinct.

ES&S Unity Examination

Obtain a directory listing of the Unity server and workstations
 Obtain a copy of the registry
 Obtain a copy of the operating system logs and the Unity log files
 Obtain screen shots of each Unity module's settings
 Examine the ERM precinct results reports and compare with the manual counts
 Compare the precinct election day totals, provisional totals, and absentee totals
 Perform a SHA-1 hash of the installed static files on the server and workstation
*(*The following activities to be performed at DOE/Tallahassee)*
 *Compare the hash message with the hash message of the installed State certified software
 *Examine the registries and system logs

Security Procedures and Work Instructions

Examine the security procedures
 Examine the work instructions and relevant objective evidence (e.g., logs, inventory, seals, etc.)
 Examine the conduct of elections report
 Compare the conduct of elections with the documented procedures/work instructions
 Examine the reported issues concerning the precinct devices
 Examine the security camera video tapes and access logs

Perform the first of two parallel tests by performing the following:

(Note: This first parallel test will be performed as soon as possible. However, the actual DREs that were deployed on election day will not be available until after the recount process is complete. A second parallel test will be performed utilizing the DREs that were deployed on election day once these devices become available.)

Identify four DREs that were deployed on election day
(This selection TBD based on precinct demographics and magnitude of 13th Congressional District undervote)
 Select four DREs that were not deployed on election day
 Program PEBs and election media to reflect the election definition/parameters of the deployed DREs
 Obtain the event log and ballot image report for each of the deployed DREs
 Prepare the test scripts based on the ballot images
 Prepare a time-line for casting ballots based on the event log for each deployed DRE
 Obtain four video cameras / recorders
 Organize four two-person teams with each team assigned to a DRE
(One person to enter votes and one person to verify vote selection and verify the review page)
 Determine optimal setup of the video cameras / recorder for each DRE and team
(Video image should clearly display the entire touch screen surface without obstruction during the voting process)

Clear the PEBs, election media, and DREs

Perform the following at the start of the designated test day:

Start video recording
 Set the date to November 7, 2006
 Set the DREs for election mode
 Open the polls at the indicated time and obtain the zero tapes
 Select candidates/positions per the test script
 For the undervoted 13th Congressional District race perform the following:
 Randomly select one or the other candidate or neither
 Compare this selection with the review screen and document
 Change the selection to match the test script

Examine the review screens to verify its contents match the script based on the ballot image
 Cast ballot at the designated time
 Document any discrepancy and/or deviation from the test script
 Repeat for each ballot cast on election day
 Close the polls at the indicated time and obtain the results tapes
 Terminate video recording
 Resolve discrepancies (if any)
 Summarize finding(s) and observations

Perform the second parallel test once the deployed DREs become available by performing the following:

Select four DREs that were deployed on election day
(This selection TBD based on precinct demographics and magnitude of 13th Congressional District undervote)
 Obtain the same PEBs and election media that were used with these DREs
 Obtain the event log and ballot image report for each of the deployed DREs
 Prepare the test scripts based on the ballot images
 Prepare a time-line for casting ballots based on the event log for each DRE
 Obtain four video cameras / recorders
 Organize four two-person teams with each team assigned to a DRE
(One person to enter votes and one person to verify vote selection and verify the review page)
 Determine optimal setup of the video cameras / recorder for each DRE and team
(Video image should clearly display the entire touch screen surface without obstruction during the voting process)

Clear the PEBs, election media, and DREs

Perform the following at the start of the designated test day:

Start video recording
 Set the date to November 7, 2006
 Set the DREs for election mode
 Open the polls at the indicated time and obtain the zero tapes
 Select candidates/positions per the test script
 For the undervoted 13th Congressional District race perform the following:
 Randomly select one or the other candidate or neither
 Compare this selection with the review screen and document
 Change the selection to match the test script

Examine the review screens to verify its contents match the script based on the ballot image
 Cast ballot at the designated time
 Document any discrepancy and/or deviation from the test script
 Repeat for each ballot cast on election day
 Close the polls at the indicated time and obtain the results tapes
 Terminate video recording
 Resolve discrepancies (if any)
 Summarize finding(s) and observations

Closeout Meeting
 Issue the audit report

Appendix C

Parallel Test Summary Report

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FLORIDA DEPARTMENT *of* STATE

Division of Elections

**Parallel Test Summary Report
for
Sarasota County, FL**

**November 7, 2006 General Election
Using
Election Systems and Software, Inc.
Unity Version 4.5, Version 2**

December 18, 2006

Prepared by:

Bureau of Voting Systems Certification

drd/

SA-468

Parallel Test Summary Report
for
November 7, 2006 General Election held in Sarasota County, FL
using
Election Systems and Software, Inc.
Unity 4.5 Version 2
Audit location: Sarasota, FL
Test Dates: 11/28/06 to 12/01/06

EXECUTIVE SUMMARY:

Florida Division of Elections conducted two parallel tests of the iVotronic touchscreens in an effort to replicate the undervote count observed for the 13th Congressional District race during the November 7th, 2006 General Election held in Sarasota County. The parallel tests focused on the iVotronic touchscreen's ability to accurately record a voter's selections as presented to the voter on the touchscreen's ballot review pages. In addition, the parallel tests also examined various complaints regarding a voter's ability or difficulty in making his or her vote selections.

Bureau of Voting Systems Certification (BVSC) identified four touchscreens to examine, one each from four precincts selected by the Jennings and Buchanan organizations (two precincts each) plus a fifth touchscreen to be used for ad hoc testing. Sarasota County Elections Staff provided BVSC with the election day ballot images and event logs for the five selected touchscreens. BVSC utilized these records to develop the test scripts (i.e., the number of ballots to cast, the vote selections for each ballot, and the timeline for casting the ballots.) BVSC designed the test scripts to accomplish two objectives: to replicate election day with respect to the ballots cast and the frequency of use for each machine (except the ad hoc unit) and to identify any latent issues with respect to making a vote selection. However, the selected touchscreens did not become available for testing until December 1, 2006. Therefore, the first of the two parallel tests utilized five touchscreens from the pool of touchscreens that were not deployed during this election. This pool of touchscreens is the same election-ready units that were available as replacement units during this election.

Division of Elections (DOE) conducted the first parallel test on November 28, 2006 and the second parallel test on December 1, 2006. The second parallel test utilized the five selected units that were deployed on election day. The first parallel test results were compared to the expected election day results with reconciliation of the differences taking place during November 28th and 29th, 2006 in the presence of technical representatives from both the Jennings and Buchanan organizations and the media. All the vote differences experienced during this test were the result of two script errors and eight vote selections that were not entered according to the test script. The second parallel test results were reconciled on December 5, 2006 in the presence of the Jennings' technical representative and the media. The technical representative for the Buchanan organization was not present. All the vote differences experienced during this test were the result of one incorrectly documented vote selection for the ad hoc machine and two vote selections that were not according to the test script. In addition, a review of both parallel test videos did not identify any latent issues with respect to making a vote selection.

In summary, the test results show that the iVotronic touchscreens accurately captures the voter's selection as presented to the voter on the review screens. These tests did not identify any latent problems with respect to vote selection or the accuracy of the touchscreens' tabulation of the votes as cast.

BACKGROUND:

Sarasota County, Florida experienced an unexpected number of undervotes for the 13th Congressional District race during the 2006 General Election. Although a number of factors may have contributed to this undervote total, interested parties are concerned that the undervote for this race suggests that the voting equipment may not have correctly captured the voters' selection.

In response to the Sarasota County Supervisor of Elections' request and at the direction of the Secretary of State, the Division of Elections (DOE) developed an extensive audit plan to ascertain if a process, definition, machine, or tabulation anomaly contributed to this contest's undervote total. As part of DOE's audit, BVSC utilized a test activity known as a "parallel test." Typically, a parallel test involves a random selection of voting devices from the population of voting devices destined for deployment on election day. This test sample would be segregated from the actual deployed devices, but otherwise would undergo the same election day activities in "parallel" with the deployed voting devices, except the voters would consist of a test team and the ballots cast would be defined by a predetermined test script. The intent of this parallel activity is to ascertain the accuracy and reliability of the deployed voting devices with consideration given to ballot style, layout, coding, demographics, and operation.

OBJECTIVE and SCOPE:

The application of the parallel test technique for this audit deviated from the classical parallel test in that the test scripts were based on the audit data extracted from a sample of iVotronic touchscreen devices. In addition, the test script also took into consideration the voting experience of several voters that were described in various news articles. Because documents describing voter complaints were not available for review, DOE relied solely on the published accounts bearing in mind that some of these accounts actually verified the voter's acknowledgement to undervote the 13th Congressional District race.

The audit data for the iVotronic touchscreen consists of two records: the event log and the ballot image file. The event log contains the timing element for each ballot cast. The ballot image file contains the voter selections as they appeared on the review screen at the time the voter pressed the "VOTE" button. However, the arrangement of the ballot images is random. Therefore, these ballot images cannot be associated with the time that the ballot was cast.

BVSC requested each candidate to provide a list of two to four precincts that they believed warrant close examination. From this list of precincts, BVSC staff identified four iVotronic touchscreens (two from Jennings' list and two from Buchanan's list) that experienced the highest undervote within their respective precinct. This selection should enhance the probability of revealing the undervote anomaly should it exist. BVSC personnel then developed a test script from the audit data extracted from each of these machines. The four iVotronic touchscreens and their precinct are:

<u>iVotronic SN #</u>	<u>Precinct</u>	<u>Precinct selected by:</u>
V0105192	105	Jennings' organization
V0106437	118	Jennings' organization
V0117973	76*	Buchanan's organization
V0106866	113*	Buchanan's organization

* Note: The Buchanan organization recommended a random selection. BVSC performed this random selection utilizing MS Excel. The Jennings' organization also identified precincts 117 and 31 in their initial selection and later added precincts 44 and 74.

TEST PREPARATION:

BVSC conducted two parallel tests each consisting of four iVotronic touchscreens that followed a predetermined test script and a fifth iVotronic machine that underwent an ad hoc vote selection process focused on the 13th Congressional District race. BVSC developed the test scripts based on the event log and ballot images from the four iVotronic touchscreens identified above. The first parallel test utilized a random selection of touchscreens from the pool of touchscreens that were not deployed during the general election. This pool consisted of six non-ADA touchscreens and eighteen ADA touchscreens. An ADA touchscreen is identical to a non-ADA touchscreen except that the ADA touchscreen has an optional audio ballot capability and includes a three-button voter interface just below the touchscreen. Sarasota County has no restriction regarding the utilization of an ADA touchscreen for regular voting. Thus, such a device may be used by a vision impaired voter as well as those voters that do not require the ADA enhancement. BVSC included an ADA touchscreen in this first parallel test based on this information and the limited number of non-ADA units that were in the pool of units that were not deployed during this election. BVSC selected one ADA iVotronic touchscreen and four non-ADA iVotronic touchscreens from this pool. The one ADA touchscreen and three non-ADA touchscreens were tested using the predetermined scripts and the remaining touchscreen served as the ad hoc test article. The ad hoc test script was a random vote pattern along with a specific vote pattern for the 13th Congressional District race, all of which was documented by a second individual on preprinted blank sample ballots. The ad hoc tester randomly selected a vote pattern from ten predetermined vote patterns for the 13th Congressional District race for each ballot cast. BVSC tabulated the ad hoc votes that were manually recorded on the sample ballots and compared the totals with the tabulated results that were printed from the ad hoc unit. The election night results for the selected deployed touchscreens served as the baseline results for comparison with the first and second parallel test results.

The five non-deployed touchscreens selected for the first parallel test are:

iVotronic SN #
V0105917
V0106549
V0106923
V0105124
V0106978 (ADA)

The second parallel test utilized the four actual iVotronic touchscreens deployed on election day plus a fifth touchscreen from precinct 117 (SN # V0106366) for the ad hoc exercise. An alternate consideration was precinct 31 (SN # V0106117) which served as a backup test unit should one or more touchscreens fail during the second parallel test. For the second parallel test, BVSC used the same master personalized electronic ballots (PEB), poll worker activated PEBs, and compact flash cards that were used by these machines on Election Day.

AD HOC Vote Patterns:**Vote Pattern B-1**

Select Jennings the first time the race is presented to the voter.

Return to the race from the review screen after all other selections are made by paging back and change final selection to Buchanan.

Verify Buchanan is the selection indicated on the review screen prior to casting the ballot.

Vote Pattern B-2

Select Jennings the first time the race is presented to the voter.

Return to the race directly from the review screen after all other selections are made and change final selection to Buchanan.

Verify Buchanan is the selection indicated on the review screen prior to casting the ballot.

Vote Pattern J-1

Select Jennings the first time the race is presented to the voter.

Return to the race from the review screen after all other selections are made by paging back and verify selection is still Jennings.

Verify Jennings is the selection indicated on the review screen prior to casting the ballot.

Vote Pattern J-2

Select Jennings the first time the race is presented to the voter.

Return to the race directly from the review screen after all other selections are made and verify selection is still Jennings.

Verify Jennings is the selection indicated on the review screen prior to casting the ballot.

Vote Pattern J-3

Select Buchanan the first time the race is presented to the voter.

Return to the race from the review screen after all other selections are made by paging back and change final selection to Jennings.

Verify Jennings is the selection indicated on the review screen prior to casting the ballot.

Vote Pattern J-4

Select Buchanan the first time the race is presented to the voter.

Return to the race directly from the review screen after all other selections are made and change final selection to Jennings.

Verify Jennings is the selection indicated on the review screen prior to casting the ballot.

Vote Pattern J-5

Do not make a selection the first time the race is presented to the voter.

Return to the race from the review screen after all other selections are made by paging back and change final selection to Jennings.

Verify Jennings is the selection indicated on the review screen prior to casting the ballot.

Vote Pattern J-6

Do not make a selection the first time the race is presented to the voter.

Return to the race directly from the review screen after all other selections are made and change final selection to Jennings.

Verify Jennings is the selection indicated on the review screen prior to casting the ballot.

Vote Pattern U-1

Select Jennings the first time the race is presented to the voter.

Return to the race from the review screen after all other selections are made by paging back and change final selection to an undervote.

Verify an undervote is the selection indicated on the review screen prior to casting the ballot.

Vote Pattern U-2

Select Jennings the first time the race is presented to the voter.

Return to the race directly from the review screen after all other selections are made and change final selection to an undervote.

Verify an undervote is the selection indicated on the review screen prior to casting the ballot.

Note: Vote pattern J-4 was in error for the first parallel test. The first instruction "Select Buchanan..." actually stated "Select Jennings..." BVSC corrected the vote pattern (correct version shown above) for the second parallel test.

ELECTION SETUP:

DOE conducted the parallel tests at Sarasota's Interim Government Operations Center (IGOC) located at 1001 Sarasota Center Blvd in Sarasota, Florida. The setup for both parallel tests involved placing the 12 inch iVotronic touchscreen in a vertical orientation mounted on a modular wall unit. This wall unit is in a small room located in the Sarasota Elections storage facility within the IGOC. That room served as the test area and contained windows on two parallel sides with the modular wall being located below the windows on one side. This allowed the public to witness the test team's interaction with the touchscreens from the opposite set of windows. This arrangement also facilitated video taping the test and the observations by the designated representatives from both the Jennings and Buchanan organizations. A video production company utilized five cameras w/monitors to record the testing with one camera/monitor devoted to each touchscreen. Sarasota election staff also located two additional wide screen monitors in the public viewing area. Thus, the public was able to observe all five monitors located in the test area along with the two large monitors in the public area and also directly observe the interactions of the test team with the touchscreens. Two members of the test team were positioned to one side of each touchscreen. One team member made selections per the test script or randomly voted on the ad hoc unit while the second team member documented the actions taken. The test team consisted of twelve volunteers from the Division of Elections, ten of which were located in the test area and the remaining two serving as rotating replacements. The majority of the volunteers did not have any prior experience with touchscreens. BVSC staff gave the test team a brief 15 minute orientation just prior to beginning the first parallel test. In addition, the test team had no prior test experience as evidenced by its lack of documentation and note taking during the first parallel test. Based on the constructive feedback provided by the Jennings organization and the experience gained from the first parallel test, the test team substantially improved its test documentation during the second parallel test.

The iVotronic serial numbers, test script identification, and camera position were as indicated below:

1st Parallel Test -- Tuesday November 28, 2006

Non-deployed iVotronic Sn #	Camera #	Script based on Precinct # / (iVo Sn #)
V0105917	1	n/a <i>ad hoc test script</i>
V0106549	2	105 / (V0105192)
V0106923	3	118 / (V0106437)
V0105124	4	113 / (V0106866)
V0106978 (ADA)	5	76 / (V0117973)

2nd Parallel Test -- Friday December 1, 2006

Deployed iVotronic Sn #	Camera #	Precinct
V0106366	1	117 <i>ad hoc test script</i>
V0105192	2	105
V0106437	3	118
V0106866	4	113
V0117973	5	76

Key Elements:

A number of media reports described problems that several Sarasota voters encountered in making their selections and/or in making corrections to their selections as presented on the review screens. BVSC utilized the test scripts and the ad hoc script to replicate the published anomalies. Although a number of these voters indicated a problem with their initial and final selection for the 13th Congressional District race, the primary focus of the parallel tests is the review screens. The review screens present the voter with the voter's selections. It is this review screens' list of voter selections that the iVotronic records when the voter presses the "VOTE" button to cast the ballot. Therefore, the primary question concerning the accuracy of the iVotronic touchscreen is whether the review screens as presented to the voter and ultimately verified and cast by the voter is in fact what was stored as the ballot image. All other issues involving the vote selection process do not alter the fact that it is the selections that are presented on the review screens that are ultimately cast and tabulated. Thus, a review screen that shows a selection for any candidate and/or measure that is not captured in the ballot image is a machine error. Likewise, any review screen that does not show a selection that is captured within the ballot image is also a machine error. The vote selection process does not capture that selection as a vote until the voter advances through all the review pages and has had an opportunity to observe the voter's selections. Then, and only then, will the vote button become enabled and allow the voter to cast their ballot. Upon reaching the review screen, an undervote is visually presented to the voter as "No selection made" and with the contest checkbox left empty. A third visual report is provided on the non-ADA touchscreens with the "No selection made" in a red text on a white background.

Results:

The initial results from the first parallel test noted the following:

1st Parallel Test -- Tuesday November 28, 2006

Non-deployed iVotronic Sn #	Script	Variance	Resolution
V0105917	<i>ad hoc test script</i>	None	
V0106549	V0105192	1 extra vote for Jennings 1 less undervote 1 extra vote for Carusone 1 less vote for Klos	Ballot 40, Undervote was voted for Jennings Cause is same as noted for ballot 40 Ballot 35, Vote for Klos was cast for Carusone Cause is same as noted for ballot 35
V0106923	V0106437	3 extra votes for Jennings 3 less undervotes	Ballot 2, Undervote was voted for Jennings Ballot 4, Undervote was voted for Jennings Ballot 6, Undervote was voted for Jennings Causes are same as noted for ballots 2, 4, and 6
V0105124	V0106866	1 extra vote for George 1 less vote for Phillips 1 extra YES vote 1 less undervote	Ballot 67, Vote for Phillips was scripted for George Cause is same as noted for ballot 67 Ballot 5, An undervote was scripted as a Yes Cause is same as noted for ballot 5
V0106978	V0117973	1 extra vote for Jennings 1 less undervote 1 extra undervote 1 less vote for Campbell	Ballot 30, Undervote was voted for Jennings Cause is same as noted for ballot 30 Ballot 34, Vote for Campbell was cast as an undervote Cause is same as noted for ballot 34

2nd Parallel Test – Friday December 1, 2006

Non-deployed			
iVotronic Sn #	Script	Variance	Resolution
V0106366	<i>ad hoc test script</i>	1 extra Yes vote	Ballot 44, Recorded Yes vote on pdf when actual vote was No Cause is same as noted for ballot 44
V0105192	V0105192	1 less No vote 1 extra vote for Crist 1 less vote for Davis	Ballot 19, Vote for Davis was cast for Crist Cause is same as noted for ballot 19
V0106437	V0106437	1 extra vote for Campbell 1 less vote for McCollum	Ballot 47, Vote for McCollum was cast for Campbell Cause is same as noted for ballot 47
V0106866	V0106866	None	
V0117973	V0117973	None	

As noted above, both parallel tests were successful in demonstrating 100% accuracy in recording the vote selections as indicated on the review screens. There were no unresolved anomalies. In addition, attempts to replicate the published reports concerning voter difficulties in making or changing their vote selections did not materialize during this test.

Conclusion:

This series of parallel tests demonstrated that the iVotronic touchscreens did not exhibit pervasive malfunctioning. There are no indications of machine bias or otherwise voting machine faults that would yield rejected legal votes. The claims made that votes were lost due to touchscreen malfunction are not supported by the results of this test. In addition, statistical analysis of the undervote for the 13th Congressional District race may not be a good indicator of a voting machine undervote anomaly. Consider the countywide races for Sarasota County Review Board (Districts 1, 2, 3, 4 and 5) and the Hospital Board Southern District Seat race. If one were to give similar considerations that were used to analyze the 13th Congressional District race in an analysis of the countywide races one would note that these six races exhibited nearly identical percent undervotes except for the Review Board District 2 race where the undervote is over 7% higher representing nearly 10,000 additional undervotes. Examination of the ballot images provides some clues as to voting patterns. All six races had two candidates, one Republican listed first and one Democrat, except the Review Board District 2 race which had an NPA candidate instead of a Democrat. BVSC noted when building the test scripts that a large number of voters that tended to vote a Democratic ballot chose to either vote for the Republican candidate or undervote the contest rather than vote for the NPA candidate. The voters that tended to vote a Republican ballot were largely consistent with their Republican choices for county-wide races. Thus, voting patterns with respect to candidate preference does appear to be a factor that needs consideration in any statistical analysis of the 13th Congressional District race.

Furthermore, criticisms that the test arrangement and/or the test team makeup influenced the accuracy of the touchscreens are unfounded. The purpose of this test is to determine whether the iVotronic touchscreens encountered pervasive malfunctioning or irregularities that contributed to the observed undervote count for the 13th Congressional District race. The unit's orientation, the voter's demographics, and all other external factors may contribute to the voter's and/or the touchscreens ability or inability to make vote selections. However, the process of selecting one's choices is not a measure of the voting device's accuracy. Accuracy is relevant to the information presented to the voter on the review screens and ultimately captured as a ballot cast upon a positive action by the voter after that voter has advanced to all the review screens and after making any desired changes to the

vote selections. The sample size for these tests, a total of ten test units, is more than adequate to identify any machine malfunctions, faulty machines, machine bias or irregularities that could have contributed to the observed undervotes for this race. In summary, there is no evidence to support the position that the iVotronic touchscreens caused votes to be lost.

Appendix D

Audit Documentation Inventory

(Items comprise the public records associated with this audit with noted applicable exemptions)

<u>File Folder & Contents</u>	<u>Pages</u>
Letters from Division of Elections	19
General iVotronic Custody Logs	166
Observer Sign-in Sheets	25
Tape-Log and Custody Sheets	11
Manual Recount Forms	16
Ballot Custody Batch Log Sheets	44
Provisional (Coded) Ballot Summary	7
Security Procedure <i>(Not a public record)</i>	83
Turnout and Voter History	3
Conduct of Election Report	5
Jurisdictional Canvass	19
ERM Summary Report with Group Detail	16
Audio/Video Purchase Order	11
Parallel Test Communication	8
Parallel Test Custody Logs	25
Ballot by Style	15
1. Sample Ballot	
2. CD - Event Log & Ballot Image PDF Files	
3. Sample Ballot Style 3	
4. Ballot Style List	
Legal Filings – Case No. 2006 CA 2973 & 06 CA 2996	21
Audit Plan	3
News Articles	23
Zero and Results Tapes (11/28/2006)	60
- 15 Tapes (4 pages legal size paper per Tape)	
Zero and Results Tapes (12/01/2006)	60
- 15 Tapes (4 pages legal size paper per Tape)	
Ballot Image Log	156
Parallel Test Plan	5
Zone Tech Log Sheets	16
11/28/06 Test Results	25
12/01/06 Test Results	26
Event Logs for Sn # 105192, 106437, 106866, & 117973	6
11/28/06 Test Script for ad-hoc touchscreen from Precinct 117	92
11/28/06 Test Script for touchscreen from Precinct 105	55
11/28/06 Test Script for touchscreen from Precinct 118	80
11/28/06 Test Script for touchscreen from Precinct 113	76
11/28/06 Test Script for touchscreen from Precinct 76	40
Precinct Protective and Public Counts	163
- Precinct I-156 & Early Voting	
Precinct Register Reconciliation	20

- 131 Slips	
12/01/06 Test Script for ad-hoc touchscreen from Precinct 117	94
12/01/06 Test Script for touchscreen from Precinct 105	57
12/01/06 Test Script for touchscreen from Precinct 118	80
12/01/06 Test Script for touchscreen from Precinct 113	76
12/01/06 Test Script for touchscreen from Precinct 76	40
Canvassing Board Minutes for November 7, 2006	4
M650 Configuration Report printouts	4
Unity System Logs and Screen Shots	2 CD
Parallel Test Image and Event Log (11/28/06-12/01/06)	1 CD
46 DRE Ballot Image/Event Log Count	86
General Election Parameters <i>(Not a public record)</i>	1 CD
Firmware Chip Comparison <i>(Not a public record)</i>	23
- 2 CDs <i>(Not a public record)</i>	
iVotronic Firmware Installation <i>(Not a public record)</i>	9
- 1 CD <i>(Not a public record)</i>	
Public Record Requests	6
FSU SAIT Statement of Work	28
Precinct Zero and Early Voting Zero Results Tapes Copies	1392
ES&S CD-13 Background Report	31
Parallel Test Summary Report	18
Incident Reports	1,920
This Audit Report	29
FSU/SAIT Software Review and Security Analysis Report	67
FSU/SAIT Report Appendix E, F, & G <i>(Not a public record)</i>	
DVD for Two Parallel Tests	146 DVD's
Cost per DVD set is \$370.84, <i>(subject to change)</i>	

Appendix E

Acronyms

ADA	Americans with Disabilities Act
BVSC	Bureau of Voting Systems Certification
COTS	Commercial-off-the-shelf
DARC	Sarasota County Elections' Data Acquisition and Recording Center
DOE	Florida Division of Elections
DRE	Direct recording electronic
EEPROM	Electronically erasable programmable read only memory
EQC	Election Qualification Code
ES&S	Elections Systems and Software, Inc.
FSU	Florida State University
HAVA	Help America Vote Act
ITA	Independent Test Authority
L&A	Logic and Accuracy test
PEB	Personalized electronic ballot
M100	ES&S Model 100 precinct optical scanner
M650	ES&S Model 650 high speed central count optical scanner (for absentee ballots)
PRF	Sarasota County Elections' Poll Worker Report Form
SAIT	FSU's Security Analysis in Information Technology laboratory
SR-1	Service Release 1 is an update to Unity's Election Reporting Manager (ERM) that allows sorting of ballot images that contain an undervoted universal primary contest (UPC).
UPC	Universal primary contest. The UPC is unique to Florida's closed primary elections and occurs when an office up for election has only one political party with a slate of candidates and that race's winner will go unchallenged during the general election. Under these conditions, this district race appears on all the relevant primary ballots, thus allowing cross-party voting for this race in a closed primary election.
Unity	ES&S's election management system that is composed of the Election Data Manager (EDM), the ballot image manager for ES&S scanners (ESSIM), the Hardware Programming Manager (HPM), the optional Data Acquisition Manager (WDAM), the optional iVotronic image manager (iVIM), and the Election Reporting Manager (ERM).
VEF	Sarasota County Elections' Voting Equipment Facility

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COFFEY & WRIGHT, L.L.P.

GRAND BAY PLAZA, PENTHOUSE 2B
2665 SOUTH BAYSHORE DRIVE
MIAMI, FLORIDA 33133

KENDALL COFFEY TELEPHONE: 305/857-9797
e-mail: kcoffey@coffeywright.com FACSIMILE: 305/859-9919

November 2, 2006

**VIA FEDERAL EXPRESS &
FACSIMILE (941-861-8609)**
The Honorable Kathy Dent
Supervisor of Elections
Sarasota County Department of
Elections
101 South Washington Boulevard
Sarasota, FL 34236

**RE: Electronic Voting
Machines**

Dear Ms. Dent:

This firm represents the Christine
Jennings Campaign. We are writing

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The Honorable Kathy Dent
November 3, 2006
Page 2

because, despite past discussions about correcting the problem, we continue to receive numerous reports concerning problems with the voting equipment in Sarasota County.

To date, the reported problems have occurred at five of the seven early voting precincts in Sarasota County including: Sarasota County Terrace, R.L. Anderson Administration, North County Library, Fruitville Library, and the Gulf Gate Library. In addition to those circumstances about which we have been

COFFEY & WRIGHT, L.L.P.
GRAND BAY PLAZA, PENTHOUSE 2B • 2665 SOUTH
BAYSHORE DRIVE
MIAMI, FLORIDA 33133
TEL: 305/857-9797 • FAX: 305/859-9919

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November 3, 2006
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made aware, it is likely that there have been yet other instances that were either not noticed by the voter or not reported. If this level of reported problems were to apply throughout the County's polling places on Tuesday, it would, to say the least, be a matter of real concern.

The problem that has consistently arisen is that when a voter makes a selection for Ms. Jennings on the electronic voting equipment, her opponent's name is either immediately highlighted or appears incorrectly as the

COFFEY & WRIGHT, L.L.P.
GRAND BAY PLAZA, PENTHOUSE 2B • 2665 SOUTH
BAYSHORE DRIVE
MIAMI, FLORIDA 33133
TEL. 305/857-9797 • FAX: 305/859-9919

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November 3, 2006
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choice in the machine summary. In one notable instance at the Gulf Gate Library precinct, a married couple each independently had the same problem on the machines at that site— they selected Christine Jennings and her opponent's name appeared highlighted instead. They apparently had some difficulty rectifying the problem. There are multiple other complaints from that site as well as from the other early voting locations referenced above. Another problem that has been reported is that when the voter selects Christine Jennings, no selection

COFFEY & WRIGHT, L.L.P.
GRAND BAY PLAZA, PENTHOUSE 2B • 2665 SOUTH
BAYSHORE DRIVE
MIAMI, FLORIDA 33133
TEL: 305/857-9797 • FAX: 305/859-9919

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November 3, 2006
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appears at all. For obvious reasons, we are concerned that if we are already receiving this level of complaints during the period of early voting from a majority of the designated polling places, there is the prospect that these issues will only be magnified on Election Day, Tuesday, November 7, 2006. We know that you share our objective to ensure that will not be the case.

In furtherance of eliminating these problems to the greatest extent possible, we respectfully insist that your office take

COFFEY & WRIGHT, L.L.P.
GRAND BAY PLAZA, PENTHOUSE 2B • 2665 SOUTH
BAYSHORE DRIVE
MIAMI, FLORIDA 33133
TEL. 305/857-9797 • FAX 305/859-9919

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November 3, 2006
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every reasonably prudent step in the coming days to further ensure the integrity of the elections in Sarasota County. Included in the measures that should immediately be implemented are: (1) recalibrating every machine at the end of each day at all early voting sites, (2) calibrating each of the machines to be used on election day before they are utilized for voting, (3) ensuring that there are at least two poll workers at each one of Sarasota County's early voting and Election Day precincts trained in the process of recalibrating the machines, (4)

COFFEY & WRIGHT, L.L.P.
GRAND BAY PLAZA, PENTHOUSE 2B • 2665 SOUTH
BAYSHORE DRIVE
MIAMI, FLORIDA 33133
TEL: 305/857-9797 • FAX: 305/859-9919

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alerting each voter upon arrival at the early voting precincts as well as the polls on Election Day to double check that each of their respective choices are accurately reflected in the voter summary before the red "vote" button is pushed, (5) immediately closing down any machine that produces error in multiple instances and ensuring that replacement machines are immediately available and activated, and (6) all other measures necessary to maintain voter confidence.

COFFEY & WRIGHT, L.L.P.

GRAND BAY PLAZA, PENTHOUSE 2B • 2665 SOUTH
BAYSHORE DRIVE
MIAMI, FLORIDA 33133
TEL: 305/857-9797 • FAX: 305/859-9919

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We would appreciate receiving confirmation from your office that you have received this correspondence and that the appropriate safeguards are being instituted. We will be immediately available to discuss these matters further and would welcome the opportunity to meet with you at a time of your convenience.

Respectfully,

COFFEY & WRIGHT, L.L.P.
GRAND BAY PLAZA, PENTHOUSE 2B • 2665 SOUTH
BAYSHORE DRIVE
MIAMI, FLORIDA 33133
TEL: 305/857-9797 • FAX: 305/859-9919

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November 3, 2006
Page 9

KENDALL COFFEY

KC/jc

COFFEY & WRIGHT, L.L.P.
GRAND BAY PLAZA, PENTHOUSE 2B • 2665 SOUTH
BAYSHORE DRIVE
MIAMI, FLORIDA 33133
TEL. 305/857-9797 • FAX. 305/859-9919

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IN THE CIRCUIT COURT FOR THE SECOND JUDICIAL CIRCUIT
IN AND FOR LEON COUNTY, FLORIDA
CIVIL DIVISION

CHRISTINE JENNINGS, nominee of the
Democratic Party for Representative in Congress
From the State of Florida's Thirteenth Congressional
District, *Plaintiff*,

v.

Case No.: 2006 CA 2973

**ELECTIONS CANVASSING COMMISSION OF
THE STATE OF FLORIDA**, *et al.*, *Defendants*.

ELLEN FEDDER, *et al.*, *Plaintiffs*,

v.

Case No. 2006 CA 2996
(consolidated)

**FLORIDA ELECTIONS CANVASSING
COMMISSION**, *et al.*, *Defendants*.

NOTICE OF SERVING STATE DEFENDANTS'
FIRST SET OF INTERROGATORIES TO EACH FEDDER PLAINTIFF

Defendants, Elections Canvassing Commission of the State of Florida, Sue M. Cobb, Secretary of State of the State of Florida, and Dawn K. Roberts, Director of the Division of Elections, ("State Defendants"), pursuant to Florida Rule of Civil Procedure 1.340, propounds the following Interrogatories to each of the Fedder Plaintiffs, Ellen Fedder, Lance Jones, Ernest Lasche, Barbara Klein, Lois Harmes, John Minder, Dovie Murray, John McBride, Susan Gaar, Gary Lamer, and Charles Clifton, to be answered fully, in writing and under oath, within thirty (30) days from the date of service.

When answering the following Interrogatories, please refer to Schedule "A" attached hereto.

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing has been furnished by Facsimile or Electronic Transmission this 5 day of Dec, 2006, to the following:

Mark Herron
Messer, Caparello & Self, P.A.
2618 Centennial Place
Tallahassee, Florida 32308
Telephone (850) 222-0720
Facsimile (850) 558-0659
E-Mail: mherron@lawfla.com
Attorney for Plaintiff Jennings

Kendall Coffey
Coffey & Wright, LLP
2665 South Bayshore Drive
PH-2, Grand Bay Plaza
Miami, Florida 33133
Telephone (305) 857-9797
Facsimile (305) 859-9919
E-Mail: kcoffey@coffeywright.com
Attorney for Plaintiff Jennings

Donald B. Verrilli, Jr.
Jessica Ring Amunson
Sam Hirsch
Jenner & Block, LLP
601 Thirteenth Street N.W.
Washington, DC 20005-3823
Telephone (202) 693-6095
Attorneys for Plaintiff Jennings

Glenn T. Burhans, Jr.
Hayden R. Dempsey
Greenberg Traurig, P.A.
101 East College Avenue
Tallahassee, Florida 32301
Telephone (850) 222-6891
Facsimile (850) 681-0207
E-Mail Burhansg@gtlaw.com
Dempseyh@gtlaw.com
Attorney for Vern Buchanan

Ronald A. Labasky
Young Van Assenderp, P.A.
225 South Adams Street
Tallahassee, Florida 32302
Telephone (850) 222-7206
Facsimile (850) 561-6834
E-Mail rlabasky@yvlaw.net
Attorney for Supervisor Dent

Frederick J. Elbrecht
Deputy County Attorney
Sarasota County Attorney's Office
1660 Ringling Boulevard, Second Floor
Sarasota, Florida 34236
Telephone (941) 861-7272
Facsimile (941) 861-7267
E-Mail RElbrecht@scgov.net
Attorney for Sarasota Defendants

Lowell Finley
 Voter Action
 1604 Solano Avenue
 Berkeley, California 94707
 Telephone (510) 318-2248
 Facsimile (415) 723-7141
Attorney for Fedder Plaintiffs

Muslima Lewis, Director
 Voting Rights Project
 Randall C. Marshall, Legal Director
 Aziza Naa-Kaa Botchway
 ACLU Foundation of Florida, Inc.
 4500 Biscayne Boulevard, Suite 340
 Miami, Florida 33137-3227
 Telephone (786) 273-2729
 Facsimile (786) 363-1448
Attorneys for Fedder Plaintiffs

Reginald J. Mitchell
 People for the American Way Foundation
 1550 Melvin Street
 Tallahassee, Florida 32301
 Telephone (850) 877-0307
 Facsimile (850) 402-1999
Attorney for Fedder Plaintiffs

Elliott M. Minberg
 Judith E. Schaeffer
 People for the American Way Foundation
 2000 M Street N.W. #400
 Washington, DC 20036
 Telephone (202) 467-4999
 Facsimile (202) 293-2672
Attorneys for Fedder Plaintiffs

Rebecca Harrison Steele
 Zeina N. Salam
 ACLU Foundation of Florida, Inc.
 West Central Florida Office
 Post Office Box 18245
 Tampa, Florida 33679-8245
 Telephone (813) 254-0925
 Facsimile (813) 254-0926
Attorneys for Fedder Plaintiffs

Cindy A. Cohn
 Matthew J. Zimmerman
 Electronic Frontier Foundation
 454 Shotwell Street
 San Francisco, California 94110
 Telephone (415) 436-9333 x 127
 Facsimile (415) 436-9993
Attorneys for Fedder Plaintiffs

Peter Antonacci
 Florida Bar No. 280690
 Allen C. Winsor
 Florida Bar No. 016295
 GrayRobinson, P.A.
 301 South Bronough Street
 Suite 600 (32301)
 Post Office Box 11189
 Tallahassee, Florida 32302
 Telephone (850) 577-9090
 Facsimile (850) 577-3311
 E-Mail pva@gray-robinson.com
 awinsor@gray-robinson.com
Attorneys for State Defendants

SCHEDULE "A" TO INTERROGATORIES**DEFINITIONS AND INSTRUCTIONS**

These instructions and definitions pertain to the Interrogatories immediately following.

1. **"Plaintiff"** means each of the Fedder Plaintiffs: Ellen Fedder, Lance Jones, Ernest Lasche, Barbara Klein, Lois Harnes, John Minder, Dovie Murray, John McBride, Susan Gaar, Gary Lamer, and Charles Clifton, and their respective employees, agents, and attorneys.
2. The word **"person(s)"** means any natural person, individual, entity, including but not limited to, joint owners, companies, partnerships, joint ventures, corporations, trusts, estates, limited partnerships, associations, proprietorships, firms, other business enterprises, or government bodies.
3. The word **"document(s)"** means all written, recorded or graphic matter, however produced or reproduced, pertaining in any manner to the subject matter indicated and including without limiting the generality of the foregoing, all originals, copies and drafts of all correspondence, office memoranda, memoranda of telephone conversations, telegraphs, messages, contracts, studies, cancelled checks, graphs, photographs, releases, newspaper or magazine articles, books, financial statements, ledgers, transcripts, affidavits, tapes, tape recordings and phonograph records, whether originals, and all non-identical copies, or drafts, however produced or reproduced.
4. **"Communication"** means any oral statement or writing.
5. As used herein, the singular and masculine form of noun or pronoun shall embrace, and be read and applied as the plural or the feminine or neuter, as circumstances may make appropriate.
6. As used herein, the terms **"relating, related to or referring to"** shall mean referring to, reflecting, regarding, discussing, constituting, supporting and/or evidencing.
7. The word **"identify"** when used with respect to a person means:
 - A. State the full name, present address, and telephone number of said person;
 - B. State the full name, address and telephone number of each of his employers, each corporation of which he is an officer or director, and each business in which he is a principal.
8. The word **"identify"** when used with respect to a document means:
 - A. Describe document by date and subject matter;

- B. Identify the person or persons that authored, wrote, signed, initialed, dictated, or otherwise participated in the creation of document; and
 - C. Identify the name, address, and telephone number of the person who has custody of the document.
9. The word **“identify”** when used with respect to an act, occurrence, statement, event or conduct, means to describe the substance of such act, occurrence, statement, event or conduct; the date of occurrence; the identity of and every person participating in such act, occurrence, statement, event or conduct, whether any minutes, notes memoranda or any other writing or recordation exists regarding such act, occurrence, statement, event or conduct; and identify the person or persons who presently have custody of said recordation or writing.
10. If all the information furnished in answer to all or any part of an interrogatory is not within the personal knowledge of the affiant, identify each person to whom all or any part of the information furnished is a matter of personal knowledge, and each person who communicated to the affiant any part of the information furnished.
11. If the answer to all or any part of the interrogatory is not presently known or available, include a statement to that effect and furnish the information known or available and in response to the entire interrogatory by supplemental answer in writing, and under oath, within three (3) days from the time the entire answer becomes known or available.
12. **“You”** or **“your”** means and refers to each of the Fedder Plaintiffs: Ellen Fedder, Lance Jones, Ernest Lasche, Barbara Klein, Lois Harmes, John Minder, Dovie Murray, John McBride, Susan Gaar, Gary Lamer, and Charles Clifton. Each reference to **“you”** or **“your”** should be understood to include your attorneys (but excluding privileged communications), and any investigator, agent, representative or employee of you or your attorneys, and also any person under the control of you or your attorneys.

3200

INTERROGATORIES

1. What is the name and address of the person answering these interrogatories, and, if applicable, the person's official position or relationship with the party to whom the interrogatories are directed?

RESPONSE:

2. List the names and addresses of all persons who are believed or known by you, your agents, or your attorneys to have any knowledge concerning any of the issues in this action; and specify the subject matter about which the witness has knowledge.

RESPONSE:

SA-494

3201

3. Have you heard or do you know about any statement or remark made by or on behalf of any party to this action, other than yourself, concerning any issue in this action? If so, state the name and address of each person who made the statement or statements, the name and address of each person who heard it, and the date, time, place, and substance of each statement.

RESPONSE:

4. Do you intend to call any expert witnesses at the trial of this case? If so, state as to each such witness the name and business address of the witness, the witness's qualifications as an expert, the subject matter upon which the witness is expected to testify, the substance of the facts and opinions to which the witness is expected to testify, and a summary of the grounds for each opinion.

RESPONSE:

5. Identify all facts, persons and documents which support the allegation in paragraph 41 of your Complaint that "[w]hen the Secretary of State certified the iVotronic, it was widely known among Florida elections officials that key components of ES&S voting systems suffered from serious defects and had experienced serious failures in multiple elections in multiple jurisdictions."

RESPONSE:

6. Identify all facts, persons and documents which support the allegation in paragraph 41 of your complaint that "ES&S systems in other states were known to have lost votes and attributed votes to the wrong candidates."

RESPONSE:

3203

7. Identify all facts, persons and documents which support the allegation in paragraph 42 of your Complaint that in certifying the iVotronic, the former Secretary of State "[d]isregard[ed] these warnings concerning the reliability and trustworthiness of ES&S voting systems."

RESPONSE:

8. Identify all facts, persons and documents which support the allegation in paragraph 42 of your Complaint that the former Secretary of State "substantially fail[ed] to comply with the statutory requirements for electronic voting system certification."

RESPONSE:

9. Identify all facts, persons and documents which support the allegation in paragraph 42 of your Complaint that the former Secretary of State's alleged noncompliance with the statutory requirements for electronic voting system certification "left uncorrected a defect or defects in the hardware, firmware and/or software of the iVotronic voting machines."

RESPONSE:

10. Identify all facts, persons and documents which support the allegation in paragraph 42 of your Complaint that "a defect or defects in the hardware, firmware and/or software of the iVotronic voting machines ... caused the certified results of the 13th Congressional District election to include false, grossly excessive undervote figures."

RESPONSE:

11. Do you contend that "a defect or defects in the hardware, firmware and/or software of the iVotronic voting machines" was responsible for all undervotes in the 13th Congressional District election?

(a) If your answer is "yes," please identify all facts, persons and documents which account for any such undervote attributable to such a defect.

(b) If your answer is "no," please identify any undervotes you believe are attributable to such a defect, and identify all facts, persons and documents to support that number.

RESPONSE:

12. Describe your voting experience for the November 7, 2006 general election, identifying the precinct at which you voted, whether you voted on November 7, or during the early voting period, all races for which you voted or intended to vote, all races for which you intentionally undervoted, the specific difficulties you had in using the iVotronic voting system and whether you reported your difficulties to poll workers or asked for assistance.

RESPONSE:

3206

13. Please state if you have ever been a party, either plaintiff or defendant, in a lawsuit other than the present matter, and, if so, state whether you were plaintiff or defendant, the nature of the action, and the date and court in which such suit was filed.

RESPONSE:

14. Were you suffering from physical infirmity, disability, or sickness at the time you voted in the November, 2006 general election? If so, what was the nature of the infirmity, disability or sickness?

RESPONSE:

3207

15. Do you wear glasses, contact lenses, or hearing aids? If so, who prescribed them, when were they prescribed, when were your eyes or ears last examined, and what is the name and address of the examiner?

RESPONSE:

16. Did you consume any alcoholic beverages or take any drugs (prescribed or not) or medications within 12 hours before the time you voted in the November, 2006 general election? If so, state the type and amount of alcoholic beverages, drugs (prescribed or not), or medication which were consumed, and when and where you consumed them.

RESPONSE:

3208

17. Identify all persons whom you intend to call as witnesses at trial.

RESPONSE:

3209

If it is claimed that any of the information covered by these interrogatories are privileged or otherwise not subject to discovery pursuant to the Florida Rules of Civil Procedure, the State Defendants respectfully request that such information be identified by description and a statement as to the nature of the claim of privilege or the basis for claiming that such information is not subject to discovery be made in response to these interrogatories so that the court may rule upon such matters.

3210

Tab 27

3211

Page 1 of 1

From: Dent, Kathy
Sent: Tuesday, November 07, 2006 3:27 AM
To: Larry Rose
Subject: RE: Voter Glitch?

And they are voter errors! Since Tom Lyons they have come out of the woodwork.

From: Larry Rose [mailto:jedilrose@tampabay.rr.com]
Sent: Sun 11/5/2006 12:30 PM
To: Dent, Kathy
Subject: Voter Glitch?

Kathy,

Voter Glitch, My eye!

4 voter error out of 28,000 early votes is:

>>>**Touch Screen Voter Success!** <<<

Congratulations on a continuing Success for the TS system!

Best of luck and wishes for Tuesday!

Remember, I always said the election is in the hands of the voter, poliworker and God!

Larry Rose Consulting Corp.
Ph: 941.735.3053

4/11/2007

SA-504

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Tab 28

IN THE CIRCUIT COURT OF THE SECOND JUDICIAL CIRCUIT
IN AND FOR LEON COUNTY, FLORIDA
CIVIL DIVISION

CHRISTINE JENNINGS, nominee of the
Democratic Party for Representative
in Congress from the State of Florida's
Thirteenth Congressional District,

Plaintiff,

vs.

CASE NO. 2006 CA 002973

ELECTIONS CANVASSING COMMISSION OF
THE STATE OF FLORIDA, et al.,

Defendants.

ELLEN FEDDER, et al.,

Plaintiffs,

vs.

CASE NO. 2006 CA 002996
(Consolidated)

TOM GALLAGHER, et al.,

Defendants.

ORDER

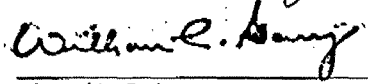
THIS CAUSE having come before the Court upon the
Stipulation Agreement on Defendant Kathy Dent's Notice and
Motion for Authorization, Voter Plaintiffs' Motion for Entry of
Anti-Spoliation Order and Voter Plaintiffs' Emergency Motion for
Preliminary Injunction (Exhibit "A" attached), and the Court
having reviewed the Stipulation and supporting documents, and
applicable law, it is hereby

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ORDERED AND ADJUDGED that:

The Stipulation Agreement on Defendant Kathy Dent's Notice and Motion for Authorization, Voter Plaintiffs' Motion for Entry of Anti-Spoliation Order and Voter Plaintiffs' Emergency Motion for Preliminary Injunction as agreed is incorporated herein and is hereby APPROVED.

SO ORDERED this 2nd day of February, 2007.



Circuit Judge

Conformed copies to: All counsel of record

IN THE CIRCUIT COURT OF THE SECOND JUDICIAL CIRCUIT
IN AND FOR LEON COUNTY, FLORIDA
CIVIL DIVISION

CHRISTINE JENNINGS, a nominee of the
Democratic Party for Representative in Congress
From the State of Florida's Thirteenth Congressional
District,

CASE NO. 2006 CA 2973

Plaintiff,

v.

ELECTION CANVASSING COMMISSION
OF THE STATE OF FLORIDA, et. al.,

Defendants.

ELLEN FEDDER, et. al.,

CASE NO. 2006 CA 2996
(Consolidated)

Plaintiffs,

v.

TOM GALLAGHER, et. al.,

Defendants.

**STIPULATION AGREEMENT ON
DEFENDANT KATHY DENT'S NOTICE AND MOTION FOR AUTHORIZATION,
VOTER PLAINTIFFS' EMERGENCY MOTION FOR PRELIMINARY INJUNCTION,
AND VOTER PLAINTIFFS' MOTION FOR ENTRY OF ANTI-SPOILIATION ORDER**

WHEREAS Plaintiffs Ellen Fedder, Lance Jones, Ernest Lasche a/k/a Mike Lasche,
Barbara Klein, Lois Harnes, John Minder, Dovie Murray, John McBride, Susan Gaar, Gary
Lamer, and Charles Clifton (collectively, "Voter Plaintiffs") have filed a motion for entry of an
anti-spoliation order;

WHEREAS Defendant Kathy Dent ("Dent") has filed a notice of upcoming election and
request for authorization to use some of the voting systems at issue in this case in county-wide

elections scheduled for March 13, 2007 (the "March 2007 Elections");

WHEREAS Plaintiff Christine Jennings has requested that Dent preserve certain election equipment from the November 2006 Election;

WHEREAS Voter Plaintiffs have filed an emergency motion for preliminary injunction to preserve the evidence in this case;

WHEREAS the parties agree that it is just and proper to preserve and retain relevant evidence in this ongoing litigation;

And WHEREAS the parties agree on the importance of Sarasota County's (the "County") voters' right to vote in the upcoming election;

THEREFORE, in consideration of the above, the parties to the Agreement have agreed and stipulated to the following order addressing all three motions.

1. Equipment not to be used in the March 2007 Elections:

A. Six hundred and seventy (670) of the iVotronic machines used in the November 2006 Election (for purposes of this Stipulation and Order, the "November 2006 Election" includes early voting and Election Day voting), will be segregated and maintained in an unaltered condition for possible future inspection and/or analysis. The parties acknowledge that such segregation has already begun. (For the purposes of this Agreement, the parties acknowledge that the requirement to "segregate and maintain" said machines means that the machines will be stored and maintained in compliance with applicable Florida law, and not used or altered for election purposes by Dent.) To the extent such has not already taken place, each party may have one representative observe the movement of the voting machines. (For the purposes of this Agreement, representative means an attorney representing a party, or such attorney's legal assistant, or an officer or board member of a party. The parties agree that any

such designated representative shall not interfere with Dent's duties concerning the March 2007 Elections. Any such interference shall be grounds for the representative's immediate removal. Such representative(s) shall contact Dent to arrange for access to observe the movement of the machines.) A list of the 670 machines, by serial number, is attached hereto as Exhibit A. In addition, the following voting system components used in the November 2006 Election in connection with those specific 670 machines will be segregated and maintained by Dent: the PEBs identified in Paragraph 1D herein, the "flash cards," and any software used in connection with the identified machines.

B. The County will not clear and test or recalibrate any of the 670 touchscreen machines not used in the March 2007 Election, except pursuant to Court Order.

C. Dent will remove the hard drives from computers used to tabulate votes in the November 2006 Election and will use new hard drives for the March 2007 Election. Dent will create a back-up of all information on the server used to collect and store the votes in the November 2006 Election. The hard drives used in connection with assembling, tabulating, and in any other way addressing ballot images, gathering election data, and counting votes in connection with the November 2006 Election shall be segregated and not used in any future elections, except pursuant to Court Order.

D. The PEBs listed by serial number in Voter Plaintiffs' February 6, 2007 communication to Dent will be maintained in an unaltered condition. (A list of the PEBs, by serial number, is attached hereto as Exhibit B.)

E. The particular equipment specified in Jennings' and the Voter Plaintiffs' Motions to Compel and that were the subject of this Court's Order of December 29, 2006, will be segregated and not used in the March 2007 Election.

2. The parties agree that the prohibition on the use of the election equipment described in Paragraph 1 above shall not apply to elections conducted after the March 2007 Election. The parties will address the use of said election equipment in any future elections in a separate agreement or as provided by Court Order.

3. Other. The parties will retain in an unaltered condition, as required by law:

A. All election material relating to the November 2006 Election as required by Florida Statute Section § 101.545.

B. All Public Records related in any way to the November 2006 Election, as "public records" is defined under Florida Statute § 119.011, or that were the subject of public record requests by any of the parties to this case. While "public records" does not include *unused* ballots or other unused election materials that do not memorialize or communicate knowledge, all other election-related documents that fall within the definition of this law will be retained.

4. Dent may use any iVotronic voting machines other than the 670 systems identified by Plaintiffs and their related components, in connection with the March 2007 Elections in Sarasota County. Plaintiffs hereby specifically waive any and all objections to such use.

5. Unless expressly addressed herein, nothing in this stipulation shall be understood to absolve any of the parties of their discovery or evidentiary obligations under Florida law. This agreement does not constitute a waiver of any claims relating to such obligations.

6. This Agreement may be executed in counterparts. In addition, facsimile copies of signature pages shall be deemed binding and effective.

THE PARTIES HEREBY AGREE TO THE FOREGOING

ATTORNEYS FOR VOTER PLAINTIFFS:

BY: Rebecca Steele

John Bonifaz
(Pro hac vice application to be filed)
VOTER ACTION
C/o Demos
27 School Street, Suite 500
Boston, MA 02108
(617) 624-3900, ext. 22
(617) 624-3911 (fax)

Judith E. Schaeffer
David J. Becker
(Pro hac vice applications filed)
PEOPLE FOR THE AMERICAN WAY
FOUNDATION
2000 M Street NW, #400
Washington, DC 20036
(202) 467-4999
(202) 293-2672 (fax)

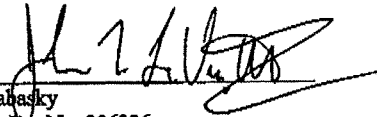
Reginald J. Mitchell
Florida Bar No. 0621293
PEOPLE FOR THE AMERICAN WAY
FOUNDATION
1550 Melvin Street
Tallahassee, FL 32301
(850) 877-0307
(850) 402-1999 (fax)

Matthew J. Zimmerman
(Pro hac vice)
ELECTRONIC FRONTIER FOUNDATION
454 Shotwell Street
San Francisco, CA 94110
(415) 436-9333, ext. 127
(415) 436-9993 (fax)

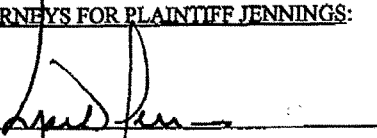
Rebecca Harrison Steele
Florida Bar No.: 067326
Zeina N. Salam
Florida Bar No. 653632
ACLU FOUNDATION OF FLORIDA, INC.
West Central Florida Office
P.O. Box 18245
Tampa, FL 33679-8245
(813) 254-0925
(813) 254-0926 (fax)

Muslima Lewis
Florida Bar No. 0158305
Randall C. Marshall
Florida Bar No. 181765
Aziza Naa-Kaa Botchway
Florida Bar No. 017803
ACLU FOUNDATION OF FLORIDA, INC.
4500 Biscayne Boulevard, Suite 340
Miami, FL 33137-3227
(786) 273-2729
(786) 363-1448 (fax)

ATTORNEYS FOR DEFENDANTS DENT, SARASOTA COUNTY SUPERVISOR OF
ELECTIONS AND JUDGE GALEN:

BY: 
Ron Labasky
Florida Bar No. 206326
Young van Assenderp, P.A.
225 South Adams Street, Suite 200
Tallahassee, FL 32301-1700
(850) 222-7206
(850) 561-6834 (fax)

ATTORNEYS FOR PLAINTIFF JENNINGS:

BY: 
Kendall Coffey
Florida Bar No. 259861
Coffey & Wright, LLP
2665 South Bayshore Drive
PH-2, Grand Bay Plaza
Miami, FL 33133
(305) 857-9797
(305) 859-9919 (fax)

Sam Hirsch
Jessie Amunson
Donald B. Verrilli, Jr.
(Admitted Pro Hac Vice)
Jenner & Block, LLP
601 Thirteenth Street, NW
Suite 1200 South
Washington DC 20005
(202) 639-6000
(202) 661-4900 (fax)

Mark Herron
Florida Bar No. 199737
Messer, Caparello & Self, P.A.
2618 Centennial Place
Tallahassee, FL 32308
(850) 222-0720
(850) 558-0659 (fax)

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Tab 29

JUANITA MELLENDER-MCDONALD, CALIFORNIA
CHAIRWOMAN

Congress of the United States

House of Representatives
COMMITTEE ON HOUSE ADMINISTRATION
1309 Longworth House Office Building
(202) 226-2061
Washington, D.C. 20515-6157
www.house.gov/cha

VERNON J. EHLERS, MICHIGAN
RANKING MEMBER

February 6, 2007

Ms. Christine Jennings, Contestant
PO Box 49135
Sarasota, FL 34230

Hon. Vern Buchanan, Contestee
U.S. House of Representatives
1516 Longworth House Office Building
Washington, DC 20515

Contested Election: *Jennings v Buchanan (FL-13)*

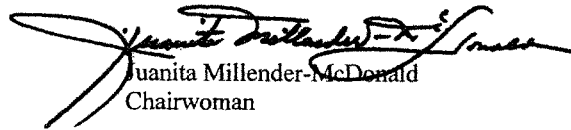
Dear Ms. Jennings and Rep. Buchanan:

On December 20, 2006, Contestant, Ms. Jennings, filed a *NOTICE OF CONTEST REGARDING THE ELECTION FOR REPRESENTATIVE IN THE ONE HUNDRED TENTH CONGRESS FROM FLORIDA'S THIRTEENTH CONGRESSIONAL DISTRICT* with the Office of the Clerk of the U.S. House of Representatives. On January 19, 2007, Contestee, Rep. Buchanan, filed a *MOTION TO DISMISS ELECTION CONTEST* with the Office of the Clerk of the U.S. House of Representatives. The matter has been referred to the Committee on House Administration for consideration.

Under the Federal Contested Elections Act ("FCEA"), the Contestee may file a Motion to Dismiss in lieu of an answer. If the motion is denied, or if the Committee postpones its disposition until the hearing on the merits, Contestee's Answer shall be served within ten days of notice of the denial or postponement or at such time as the Committee sets. Contestant's discovery right does not begin until service of Contestee's answer.

At this time, the Committee is not prepared to act on Contestee's Motion to Dismiss, nor is it prepared to postpone its disposition until the hearing on the merits. The Committee is considering the Motion, and will notify both Contestant and Contestee when the Committee has reached a decision on how it intends to proceed. Until notice is given, neither the filing of Contestee's Answer nor the commencement of compelled discovery by Contestant is permitted under the FCEA.

Very truly yours,


Juanita Millender-McDonald
Chairwoman

CC:

Counsel for Christine Jennings:

Mark Herron
Messer Caparello, & Self, PA
2618 Centennial Place
Tallahassee, FL 32308

Kendall Coffey
Coffey & Wright
2665 South Bayshore Drive
PH-2, Grand Bay Plaza
Miami, FL 33133

Sam Hirsch
Jenner & Block
601 Thirteenth Street, NW
Suite 1200 South
Washington, DC 20006

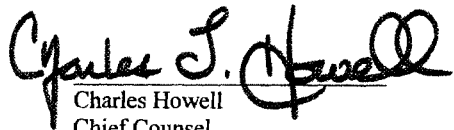
Counsel for Rep. Vern Buchanan:

Glenn T. Burhans, Jr.
Hayden R. Dempsey
Seann M. Frazier
Greenberg Traurig, P.A.
101 East College Avenue
Tallahassee, FL 32301

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CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing has been furnished by United States Mail, this 6th day of February, 2007, to the parties and all counsel of record as listed therein.

A handwritten signature in black ink that reads "Charles J. Howell". The signature is written in a cursive style with a large, stylized "H" at the end.

Charles Howell
Chief Counsel
Committee on House Administration
1309 Longworth House Office Building
Washington, D.C. 20515
Telephone: (202) 225-2061

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**FOR CONTINUATION OF HOUSE REPORT 110-528
SEE PART 3**