The State of Texas

Elections Division
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Austin, Texas 78711-2060
www.sos.state.tx.us

Gwyn Shea
Secretary of State

Phone: 512-463-5650
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(800) 252-VOTE (8683)

December 12, 2002

Mr. Steven M. Bolton
Director, Product Management
Election Systems & Software, Inc.
11208 John Galt Blvd.
Omaha, Nebraska 68137

Dear Mr. Bolton:

Please find enclosed the results for the September 10, 2002 examination of ES&S' Votronic, iVotronic, Unity, and Models 100, 550/150, 650 voting systems.

If you have any questions, please feel free to contact Paul Miles or Irene Diaz toll-free at 1-800-252-VOTE(8683).

Sincerely,

Ann McGeehan
Director of Elections

AM:ID

Ann McGeehan

From: Bolton, Steve [smbolton@essvote.com]
Sent: Tuesday, December 03, 2002 4:52 PM
To: Ann McGeehan (E-mail)
Subject: Certs

Hello Ann,

Elizabeth got out of the office today without getting back in touch with me. I believe she said she will be out for a few days. I would like to get to a conclusion on the cert event from Sept yet. At issue yet to be resolved from my conversations with Elizabeth was for someone to view the M-550 audit log start up sheet to verify that the printer will print a configuration page and notify the user that the ballot log option is enabled. We can do this through any of our local customers. I will scan the configuration page and send it to you PDF so you know where it is and can verify for yourself.

The other issue is the audit log of ERM. As you might have seen, I forwarded this on to the examiners for their review and received comment back from Nick already, forwarded it on to you also. As you can read in Nicks email, confusion is not on the part of the audit log, but just the overall certification due to the number of systems we were trying to upgrade.

I am holding shipment of Bexar Counties iVotronic units and we need to ship the units on Thursday of this week in order to meet the contract delivery date. Cliff Borosfsky wants to be sure the latest certified version of firmware is on them. I need to have version 7.4.5.0 (wyle certified) installed on them as it corrects a defect in the last version that caused a lockup on the iVotronic. 7.4.5.0 corrects this.

I am willing to come back down to demonstrate the iVotronic and ERM in January so that it is only the one system and the examiners will not be confused by the other systems if need be, but I would like to at least have a certification on the system for now so that I can deliver the units to Bexar for installation inspection. Please let me know ASAP what I can do to resolve this issue. I really appreciate your response to my request.

Regards,

Steve.

Steve Bolton
Vice President, Product Management
Election Systems & Software, Inc.
Omaha NE, 68137
402-593-0101 ext. 1118
smbolton@essvote.com <mailto:smbolton@essvote.com>

ELECTION
SYSTEMS & SOFTWARE

October 25, 2002

SUBJECT: Model 115

Dear Valued Texas Customer:

We have received several calls and questions in response to a letter from Ann McGeehan of the Texas Secretary of State's office. The letter was dated October 17, 2002 and was titled "Maintenance on Optical Scan Counting Machines." This letter has caused some confusion and anxiety for our clients, so we would like to make the following clarifications.

- As you are all aware, it is standard procedure to provide regular maintenance services to our customers. During these maintenance visits, all services are discussed with our customers and all units are tested at the completion of our work. There were no unauthorized changes made to your voting equipment.

- During the year, ES&S updated its central scanner firmware certification with the State of Texas. The new version is 1.4.2 and will be used on all central scanners. This firmware is delivered to you as part of the election-coding chip that you receive with test decks for each election. Without changing the sensitivity of the scanners, the new firmware does present changes in the system messages. You should review your manual for the messages related to the new firmware.

- As our tabulation equipment product line has grown, we have added features. Some customers around the country are using their ES&S Central Scanners for mail absentee ballot processing exclusively. In many cases, these customers believe a "visible light" configuration that does not require a #2 pencil is more appropriate. Therefore, we have begun offering the Models 150, 550 and 650 in either the traditional infrared or newer visible light configurations. No visible light option is offered on the Model 315 or 115.

- To change a scanner from infrared to visible light requires replacing each of the optical fiber bundles as well as the related electronic components. The same firmware is used for both the infrared and visible light configurations.

- Because of the differences in operation in the infrared as compared to the visible light environment, the Election Day programming indicates which configuration is being used through an internal setting. This setting will be used by the firmware to set reading thresholds within the scanner. While designed to provide consistent behavior between properly configured infrared and visible light scanners, the setting can affect the actions of the scanner when marginal marks are encountered.

- ES&S recommends that you complete your L&A test decks as you normally would, using properly filled in ovals. While our scanners have the capacity to generally read many marginal marks, we do not recommend that you use these sorts of marks for test purposes. Voter instructions should clearly ask the voter to fully fill in the oval.

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- For all central scanners except the Model 115, there is a switch, referred to as the "sensitivity switch" by Ms. McGeehan, which is used to indicate the proper settings for either light source. The switch is not used to change the sensitivity of the scanner. This switch is an actual DIP-switch included in the Model 315, Model 150 and Model 550 scanners. The switch has two alternative settings. One setting is for infrared and the other is for visible light. The so-called "sensitivity switch" does not set sensitivity levels of the scanner. However, an incorrect setting can alter reading effectiveness making it more likely that marginal marks ("Xs" and check marks) would be less likely to be sensed. The switch should only be set for the appropriate light source and should not be changed arbitrarily to alter the processing of marginal marks. The voting equipment in your county is using the infrared configuration, so the software setting and hardware switch, if any, should be set accordingly.

- During the programming for this election, the coding software automatically defaulted to a setting indicating that visible light sensors are being used. In programming, this setting should have been changed to indicate infrared sensor. There may be situations where this setting was not correct, thereby reflecting a visible light configuration while you are using an infrared configuration.

It is possible that a mismatch between the internal setting and your sensor configuration can create operational difficulties. Therefore, in addition to clarifying the facts and terms above, we also wish to provide you with the necessary guidance to allow you to determine whether your scanner is properly set up and to understand the changes in operations you will encounter.

Determining Proper Configuration:

We would like you to confirm your configuration by checking the Hardware section of your Configuration Report. The Configuration Report automatically prints upon powering up the scanner. We have attached examples of two reports, one indicating "**Infrared Sensors Installed**" and the other indicating **"Visible Light Sensors Installed."** You will see that the hardware configuration is the third section on this report.

Scanning Ballots:

If your report indicates an infrared configuration, your configuration is correct and no further procedures are needed. If your report indicates a visible light configuration, you will need to be aware of an additional condition that you can encounter on Election Day. We believe it is more likely that you will receive "Check Voter Response" messages on marginally marked ballots when you have a Model 115 set for visible light but using infrared sensors. As a result, you should handle these ballots according to the procedures within your county by either submitting them to your resolution board or by over-marking the ballot.

In no case, will this issue result in a failure of your ES&S scanner to determine properly filled ovals.

Please call us if you have any additional concerns or questions about this matter.

Regards,

Al Moraczewski
Director of Field Services

cc: Ann McGeehan, Director of Elections (State of Texas)

Financial Division
P.O.Box 12887
Austin, Texas 78711-3697

Gwyn Shea
Secretary of State

Office of the Secretary of State

Packing Slip

August 1, 2002

Election Systems & Software, Inc.
11208 John Galt Blvd.
Omaha NE 68137

Batch Number: 1484296 **Batch Date:** 08-01-2002

Client ID: 11269827
Return Method: Mail

Document Number	Document Detail	Fee
14842960002	Voting System Examination Fee	10500.00
	Total Document Fees	**10,500.00**

Payment Type	Payment Status	Payment Reference	Amount
Check	Received	82245	$10,500.00
		Total Payments Received	**$10,500.00**

Total Amount Charged to Client Account $0.00

Total Amount Credited to Client Account $0.00

Note: Any amount due need not be paid until the monthly statement is received.
Any amount credited to Client Account may be refunded upon request.
Refunds (if applicable) will be processed upon Request.
Acknowledgement of Filing Document(s) (if present) is attached.

User ID: LGUZMAN

The State of Texas

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Gwyn Shea
Secretary of State

TO: Ann McGeehan
Elections Division Director

FROM: Glenn Glover
Voting System Examiner

DATE: October 17, 2002

A voting systems certification examination was held at the Office of the Secretary of State, Elections Division on Wednesday, September 11, 2002. Election Systems & Software, Inc. (ESS) presented for State of Texas recertification the following voting systems and versions:

iVotronic DRE Voting System	7.4.5.0
Votronic DRE Voting System	5.1.9
Model 100 OMR Precinct Counter	4.8.0.0
Model 150/550 OMR	2.0.1.0
Model 650	1.1.9.1
Unity Election System Software	2.2
Consists of	
Ballot Image Manager	7.1.1.0
EDM – Election Data Manager – Election Setup	7.1.0.0
HPM – Hardware Program Manager –	3.6.0.0
DAM – Data Acquisition Manager (Client)	4.3
DAM – Data Acquisition Manager (Host)	2.5
ERM – Election Reporting Manager	6.3.2.0

The Unity Election Systems Software is an integrated suite of modular software programs that enable an election official to enter and maintain a database of jurisdiction and election information, format ballot layouts and program election equipment. The Unity system components also collect, accumulates, and reports voting results.

Unity's real-time audit log proved confusing in noting significant events during vote tabulation and also printed wrong timestamps. The vendor provided an explanation but I believe the audit log functionality should be rewritten and provide clearer descriptions of tabulation events, and accurate date and time stamping. At this time I do not recommend certification of the Unity 2.2 based on the shortcomings of the audit features.

The iVotronic DRE Voting System was presented to the examiner for evaluation. During the presentation, the iVotronic tabulation appeared to give erroneous results of the examiner's test ballots. The examination was effectively suspended while the vendor tried to reconcile the apparent erroneous results. My opinion is that the iVotronics PEB (Personalized Electronic Ballots) unit used to collect election totals from each individual iVotronic unit at the polling place, lends itself to procedural confusion in the administration of an election. A single PEB unit has an internal database where the election information is stored. Once the election is closed, the PEB is plugged into each iVotronic and the counts for that election is collected from the individual iVotronic unit and copied to the PEB's internal database. After the iVotronic unit's election results is collected, then the PEB is extracted and placed into the next iVotronic unit and increments the PEB's internal elections database with the new individual iVotronics election results. The procedural confusion can be addressed with effective training of the administering officials and election workers but nonetheless problems can arise as witnessed at the examination. Also, a zero totals printout should be printed when the election opens on each iVotronics device; currently it is an option. As a result of the problems encountered with the result tabulation of the iVotronic device, I do not recommend the use of the iVotronic device at this time. I believe ESS can successfully demonstrate the iVotronic tabulation functionality and encourage them to return to the examination board for iVotronic certification.

During the examination, the Model 550 Central Count device initially had its audit log function turned off. The examination board recommended that the Model 550 used in Texas jurisdictions eliminate the audit log option and always require it to be operational. With the Model 550 audit log printing enabled, the audit printout proved to be difficult in identifying significant events during the tabulation of the ballots. I recommend not certifying the Model 550 until the audit log function is mandatory and presents clearer information of significant events.

The Model 100 which is currently being phased out in Texas and has no audit log printing capabilities should not be certified for use.

The Model 150 and Model 650 appeared to have no apparent problems during the examination and as a result I would recommend these models for Texas certification.

In summary, I recommend the certification of ESS Model 150 and Model 650 Central Ballot Scanner. I do not recommend the certification of the iVotronic at this time nor do I recommend the certification of Model 100, Model 550 and Unity 2.2 until the issues stated above are addressed.

DEPARTMENT OF INFORMATION RESOURCES

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Chief Information Officer
State of Texas

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October 2, 2002

Ms. Ann McGeehan
Deputy Assistant
Office of the Secretary of State
1019 Brazos Street
Austin, TX 78701

RE: Re-examination of the Unity Election System Version Release 2.2 and Firmware for vote tabulation devices from Election Systems and Software (ES&S)

Dear Ms. McGeehan:

I attended a scheduled examination September 11, 2002, at 9:30 am, for the purpose of examining the voting systems from Election Systems and Software (ES&S). The report below summarizes my findings.

Voting Systems Versions

Hardware/Software Version

Unity Election System v2.2
EDM – Election Data Manager v7.1.1.0
Ballot Image Manager v7.1..0.0
HPM – Hardware Program Manager v3.6.0.0
DAM – Data Acquisition Manager (Host) v2.5
DAM – Client v4.3
ERM – Election Reporting Manager v 6.3.2.0

Tabulation Systems (all currently certified)
Model 100 Precinct Count System Firmware v4.8.0.0
Model 150/550 Central Count v 2.0.1.0
Model 650 Central Count v1.1.9.1

DRE voting systems
Ivotronic DRE audio balloting system v7.4.5.0
Votronic DRE Voting System v5.19

System description

Unity is an umbrella marketing designation that includes all of the software modules noted above. The modules are upgraded as a single package; none of them can be upgraded individually.

The core functionality demonstrated in prior versions has not been changed. ES&S personnel explained that changes they were demonstrating were mostly

cosmetic changes. For instance, the Model 100 was upgraded to handle longer ballots, and a ZIP drive was added to the model 650.

The software appeared to perform all functions specified by the Texas Secretary of State (SOS). The tallying software appeared to count votes correctly, and handled over votes and under votes appropriately.

However, the Unity software appeared to demonstrate some audit log anomalies. The log printer that appeared to function correctly in prior examinations did not print correctly this time until ES&S personnel reset a configuration switch in the election definition. It is suggested that ES&S engineering support institute QA procedures to ensure that key parameters such as the log printer settings are not overridden when they deliver firmware upgrades to customers.

System performance

This examination came the day after another highly publicized vote tabulation dispute in Florida, so it was interesting to note how these systems performed. A key problem in the Florida election was that each unit took as much as ten minutes to initialize. So a polling location that expected to be open at 7 am would have to begin setting up machines at 5:30 am to have ten voting units ready for voters. Even in the test systems examined here, each system took well over a minute to load ballots before it was ready for voting.

The slow initialization was probably due to the infrared interface between the master controller and the voting devices. The huge ballot in Florida had to be rendered in three languages (English, Spanish, and Creole). This is something the equipment was not designed to handle. Retrofitting the machines with a faster interface would likely be prohibitively expensive for the counties and/or the vendor. Thus potential customers would be well advised to examine their potential ballot styles to ensure that the equipment can handle the growth of ballots in the foreseeable future.

Recommendations

The Department of Information Resources (DIR) finds no technical objection to certifying the Unity Election System and firmware demonstrated at this examination.

Respectfully,

Nick Osborn
Systems Analyst

CP:MM:NO:sk

Voting System Examination
Election Systems & Software (ES&S)

Prepared for the
Secretary of State of Texas

James Sneeringer, Ph.D.
Designee of the Attorney General

This report comprises the findings of the Attorney General's designee from an examination of the equipment listed, pursuant to Title 9, Chapter 122 of the Texas Election Code, section 122.036(b).

Examination Date	September 11, 2002
Report Date	September 26, 2002

ES&S offers a complete line of products for every aspect of conducting an election, including election setup, DRE, optical scanning, punch-card reading, tallying and reporting.

Components Examined	**Type**	**Version**	**NASED***
iVotronic DRE Voting System	Voting	7.4.5.0	7-30-02
Votronic DRE Voting System	Voting	5.1.9	8-30-02
Model 100 OMR Precinct Counter	Scanner	4.8.0.0	7-2-02
Model 150/550 OMR	Scanner	2.0.1.0	7-2-02
Model 650	Scanner	1.1.9.1	8-22-02
Unity Election System Software	Setup & Tabulation	2.2	7-30-02
Ballot Image Manager	Part of Unity	7.1.1.0	"
EDM – Election Data Manager – Election Setup	Part of Unity	7.1.0.0	"
HPM – Hardware Program Manager – Programs PEBS, EPROMS, etc from election definition	Part of Unity	3.6.0.0	"
DAM – Data Acquisition Manager (Client)	Part of Unity	4.3	"
DAM – Data Acquisition Manager (Host)	Part of Unity	2.5	"
ERM – Election Reporting Manager	Part of Unity	6.3.2.0	"

* ES&S provided letters from Wyle Laboratories, which stated that the components were certified, but did not give NASED numbers. I have listed the dates of the letters from Wyle.

Voting: Characteristics of the Votronic and iVotronic DRE

Election Setup	Flash memory cartridge (Personalized Electronic Ballot, or PEB) created with Unity software. Nothing is pre-programmed in the terminals; all the election information is in the PEB.
Zero-total report	On the thermal printer in the communication pack.

Authorization to vote / Ballot selection	There are two modes: • Voter inserts a flash memory cartridge (PEB) created with Supervisor station and a supervisor PEB, both of which are red to distinguish them from voting stations. The PEB cannot be reused without re-activation. • Poll worker inserts a PEB, immediately removes it, and selects the appropriate ballot. The PEB is retained by the poll worker and is reusable without re-activation.
View / Vote	LCD display / touch screen
Vote Storage	Three redundant flash memories
Precinct Consolidation	Allowed using PEB cards. There is no real-time audit log printer.
Transfer Results	PEB transported or transmitted by modem to Unity software (or a regional site from which data is sent to the Unity software at central counting). The PEB is protected by a Cyclical Redundancy Check (CRC).
Print precinct results	On thermal printer in the communication pack.
Straight party / crossover	Yes. A straight-party vote cannot cancel crossover votes that have already been selected, which protects the voter against mistakenly canceling a crossover vote.
ADA	Yes. Because it is battery-powered, the iVotronic can even be taken to the curbside for voting. However, this was not demonstrated, because the Secretary of State verifies ADA compliance.

Setup & Tabulation: Characteristics of the Unity System

Tamper Resistance	Cyclical Redundancy Check (CRC) on each record in the election files.
OS access	Not permitted during tabulation.
Real-Time Audit Log	Yes.
Data Integrity	There are no special transaction-processing features. However, according to ES&S, there is no need, because all the data is written in a single write statement, making it impossible for partial results to be entered into the database. Also, it is easy to recalculate everything if a problem is suspected, and everything is automatically re-calculated when you request a canvass report. Since a canvass report would always be requested, this is satisfactory. In short, it is nearly impossible to get an incorrect result and not know it.
Notes	• The Data Acquisition Manager is used in regional centers to collect precinct data for forwarding to central counting by modem or by carrying a PEB. • The Data Acquisition Manager does not need to know election-specific data or understand the results. It does not tabulate.

Concerns

Unity	1. The real-time audit log has a bug that prints extraneous lines with an incorrect timestamp. This is extremely confusing. *This should be fixed*

	before Unity is certified.
iVotronic and Votronic DRE	2. Because the PEB tabulates the ballots from the voting location at the end of the day, as they are being transferred to the supervisor terminal, there is a requirement for real-time audit log to be printed. I do not perceive this as a great risk, but it does not comply with the Secretary of State's administrative regulations. *These should not be certified until this is corrected, or the regulations are changed.*

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September 20, 2002

Ann McGeehan
Deputy Assistant
Secretary of State
P.O. Box 12060
Austin, Texas 78711-2060

Re: Election System & Software ("ES&S")-Unity Election System V. 2.2; iVotronic DRE, V. 7.4.5.0; Votronic DRE, V. 5.19; Model 100 Precinct Count System, V. 4.8.0.0; Model 150/550 Central Count, V. 2.0.1.0; Model 650 Central Count, V. 1.1.9.1; Election Data Manager, V. 7.1.1.0; Ballot Image Manager, V. 7.1.0.0; Data Acquisition Manager (Host), V. 2.5; Hardware Program Manager, V. 3.6.0.0; Data Acquisition Manager (Client), V. 4.3; and the Election Reporting Manager, V. 6.3.2.0 (collectively the "ES&S Unity Election System" or "Election Systems").

Dear Ms. McGeehan:

Pursuant to my appointment as an examiner under §122.035 of the Texas Election Code, I examined the above referenced software and hardware as presented by ES&S for examination. I examined the Election Systems with respect to Texas Election Law and procedure on September 11, 2002. Each reference to one or more of the above components is a reference to the version number of such component listed above.

This report is concerned solely with the ability of the Election Systems, and each individual component thereof, to function in compliance with Texas Election Law. No opinion is expressed regarding the suitability of the either system for the purposes of or use by any jurisdiction.

All of the above referenced programs and equipment function under the umbrella of the Unity Election System. The Election Data Manager is used to set-up the election and jurisdiction area covered by the election. The Ballot Image Manager is used to construct the ballot for each election. The Data Acquisition Managers are used as an integral part of and with each of the alternative election systems. The Election Reporting Manager functions at election central for the tabulating and reporting of results. The Model 650 Central Count Opscan is used as the central tabulation device at election central for larger jurisdictions that use punch cards. The

ES&S

The ES&S systems were examined in Austin on September 11, 2002. The systems comprised a suite of ES&S's voting systems used in Texas. The names and current releases are as follows:

Unity - version 2.2 - an election setup, and central accumulator and reporting system
Model 100 - v. 4.8.0.0 - optical **precinct**-counting scanner
Model 150/550 – v. 2.0.1.0 - optical **central**-counting scanner
Model 650 – v. 1.1.9.1 - optical **central**-counting scanner
iVotronic - version 7.4.5.0 - DRE voting machine
Votronic - version 5.19 - DRE voting machine

There have been improvements since the last examination in May. The "refresh" option has been modified in the iVotronic but is still available as before in the Votronic. Dallas County had a problem in a recent election because of the option on the Votronic. It should be modified in both DRE systems. The modified option does not restrict the county from making last minute spelling corrections to the ballot.

Another improvement is that the Unity operator can no longer continue with the real-time audit log offline. Additional changes to the systems were not substantive.

The individual systems were able to record and count the ballots correctly but the Unity demonstration illustrated that the system as a whole is complex. The demontrators had some difficulty tabulating the results from all the machines and precincts. They had to zero-out the results and start over at least once in order to get an accurrate tally.

The following corrections must be made in order to satisfy the requirements of the Texas Election Code:

- The Unity audit log had in-consistent date/time stamps. The explaination given was that the report header should not have been on the log. The log is generally confusing to read. A call to the developer was required to explain how it should be interpreted because the demonstrators were unable explain the entries. It can easily be improved.

- The 550's audit log was not enabled. This is said to be an option of the election setup. This should not be optional in Texas. A log is required for any central-counting system.

- The 100 does not have a log printer and therefore should not be used/sold in Texas for a central-counting system even though it would otherwise be appropriate for a county with a very small voting population.

- The supervisor PEB's used by the DRE systems to open the polls in an early voting locations can have results from the previous day(s) stored on it. This is one of the problems experienced during the examination. The vendor needs to do a better job preventing this. If the vendor can make this mistake, an election worker certainly might.

Conclusion

The 650 is the only system which is not mention in the problems above and so I recommend certification. The other systems need a little more work to in order to meet the standards set forth in the Texas Election Code. I do not recommend certification of these systems until the problems outlined above are corrected.

Tom Watson
Examiner

Model 150/550 Central Count Opscan is used as the central tabulation device at election central for smaller and medium size jurisdictions that use punch cards. The Model 100 Precinct Count Opscan is used to scan and tabulate paper ballots at the precinct. The Votronic and the iVotronic DRE consists of voting stations and a precinct controller, using PEBs for the casting, recording and tabulation of votes at the precinct level.

Minimum Requirements Generally Satisfied

Although numerous problems were encountered in the course of the examination, these were ultimately overcome and a successful examination was completed, with the above listed components and whole of the Unity Election System functioning in compliance with the minimum requirements of the Texas Election Code. With the exception noted below, the ES&S Unity Election System ultimately appeared to function in a manner to meet the minimum requirements of *Chapt. 122, Subchapt. A, Texas Election Code* for use in an election. Subject only to the possible exception set forth in the following paragraph as to the Votronic and iVotronic, I recommend these versions, programs and segments of the ES&S Unity Election System be certified as meeting the minimum requirements of the Texas Election Code.

Real-time Log Printer Issue

The Votronic and iVotronic were ultimately demonstrated to function at the precinct level in a manner to comply with the minimum requirements of the Texas Election Code. However, no log printer was present when downloading vote totals to the supervisor PEB or from the PEB to the controller and the supervisor PEB/controller tabulating those results for the precinct report. The downloading and function of the supervisory station at the close of polls constitutes the tabulation of ballots. No real time log printer is present during this process, and the only record is the original information on each voting station, and the aggregate information deposited on the supervisor PEB/station, i.e. there are separate electronic logs in each station and those are aggregated and not recorded separately on the supervisor PEB. Unless (1) the Votronic and iVotronic are modified at the precinct level to include and require a real time log printer that identifies each voting station, time, date, etc. for which the voting totals are downloaded to the supervisor controller; or (2) the Votronic and iVotronic software is modified so that the results of each voting station is downloaded, stored and reported separately on the PEB, rather than being added to the totals previously loaded on the PEB; or (3) your office makes an administrative decision that an electronic aggregation of the votes from multiple voting stations at the precinct does not constitute tabulation, I recommend the Votronic and iVotronic not be certified as in compliance with the requirements of *Chapt. 122, Subchapt. A, Tex. Elec. Code.*

Reservations and Recommendations

Notwithstanding the above opinion that the ES&S Unity Election System meets the minimum requirements of the Texas Election Code, I recommend the Secretary consider requiring or

advising modifications be made by ES&S to: (1) the operating programs for the ES&S Unity Election System; and (2) the written instructions and procedures for the Election Systems. Such recommendations are based on the September 11, 2002 examination, and prior examinations, with one assumption being made. The assumption is that the personnel presented by ES&S to participate in the examination are as well or much better trained in the operation of the ES&S Unity Election System than is the average election worker.

These Reservations and Recommendations result from the following incidents during the examination.

ES&S Model 550 Ballot Scanner. As initially examined, the Model 550 produced a minimal and largely unusable real time log printer result. After considerable confusion and contacts by ES&S with the home office, it was discovered that the real-time log printer function had been "turned off" during the election set-up for the examination election. The software program for election set-up gives the election official the option to disable the real-time log printer function. This function had not been turned off for the Model 650, and corrections were ultimately made that enabled the examination of the Model 550 with a functional real-time log printer. Recommendation. I recommend the Secretary require ES&S to eliminate the capability to disable the real-time log printer, for election systems made available in the State of Texas.

Votronic and iVotronic. Notwithstanding the knowledge and skills of the ES&S personnel available to participate in the examination, after simulated voting at the election precinct level the tabulation of the results for the Votronic resulted in a larger number of votes being tabulated than were cast in the simulated voting. After some time and confusion, it was discovered that ES&S personnel had failed to clear the prior test results from the system prior to the start of voting. As a result, the Votronic and iVotronic were ultimately demonstrated to function in compliance with the minimum requirements of the Texas Election Code, subject only to the ability of the election judges to follow all required procedures. The confusion and difficulties encountered during the examination also distracted from this examiner assuring certain functions. Recommendation. I recommend the Secretary consider requiring ES&S to modify the operating programs for the Votronic and iVotronic so that the Election Administrator cannot program the election in a manner to not require a zero totals tape being printed when the election is opened. Further, I recommend the Secretary have staff examine and make certain that a voter station cannot be connected to the Votronic or iVotronic precinct system after the zero total votes tape is printed, without a zero total votes tape being printed for that station. In this regard, it would appear to lessen the opportunity for operator error if there was only one procedure for opening the voting stations and the supervisor terminal for voting. See Section 5, pages 51-54, of the Certification Materials, for the potential for confusing election judges.

Real-Time Audit Log. The real-time audit log for the Model 150, Model 550 and Model 650 and other central tabulation appeared ultimately to function in a manner to meet the minimum requirements of the applicable regulations. Reservations. The audit log was confusing and

unnecessarily complicated. Persons attempting to use the audit log to investigate seemed irregularities, or to actually audit the tabulation of ballots, would eventually (with ES&S help) be able to audit the tabulation events. As an example, at the end of the examination, two examiners, a member of the Secretary's staff, the lead ES&S presenter and a seemingly very competent ES&S staff member, required almost thirty minutes to ascertain the events logged for a tabulation that required less than five minutes.

Summary and Recommendation for Certification

The following is subject to the Secretary's decision regarding a real-time log printer for tabulation by an electronic voting system at the precinct level. When proper procedures were followed, the ES&S Unity Election System was demonstrated to function in compliance with the minimum requirements of the Texas Election Code. Those procedures included the following: (1) the official creating the election not selecting a log printer option that is not authorized in Texas; (2) the official creating the election not selecting an option for the zero tapes total for the Votronic or iVotronic precinct level that is not authorized in Texas; and (3) the clearing of the Votronic and iVotronic PCBs and voting stations at the precinct level prior to the opening of the polls for voting. Never-the-less, when proper procedures are followed the ES&S Unity Election System meets the minimum requirements of the Texas Election Code.

Sincerely,

Barney L. Knight

The State of Texas

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Gwyn Shea
Secretary of State

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REPORT OF EXAMINATION OF DIEBOLD ELECTION SYSTEMS, INC.'S ACCU-VOTE TS R6 v.4.1.11

PRELIMINARY STATEMENT

On May 21, 2002, Diebold Election Systems, Inc. (the "Vendor") presented its Accu-Vote TS R6 system for modification and reexamination in compliance with House Bill 1419, 77th Legislature, which requires reexamination of all voting systems of each county to determine whether the voting system continues to comply with the minimum applicable standards prescribed by law. The system was formerly distributed by Global Election Systems. The examination was conducted in Austin, Texas. Pursuant to Sections 122.035(a) and (b) of the Texas Election Code, the Secretary of State appointed the following examiners:

1. Mr. Nick Osborn, an expert in electronic data communication systems;
2. Mr. Tom Watson, an expert in electronic data communication systems;
3. Mr. Barney Knight, an expert in election law and procedure; and
4. Mr. Glenn Glover, an expert in electronic data communication systems.

Pursuant to Section 122.035(a), the Texas Attorney General appointed Dr. Jim Sneeringer, an expert in electronic data communication systems.

The Vendor first demonstrated the system; the examiners thoroughly examined the system. Examiner reports on the system are attached hereto and incorporated herein by this reference.

BRIEF DESCRIPTION OF THE ACCU-VOTE TS R6

The Accu-Vote TS R6 is a modification to the previously certified Accu-Vote TS Direct Record Electronic voting machine. The modified system features a larger, color screen, and a thermal printer. The version presented for examination was version 4.1.11.

FINDINGS

The following are my independent findings, based on oral evidence presented at the examination, written evidence submitted by the Vendor in support of its application for certification, and the findings of our voting system examiners as set out in their written reports.

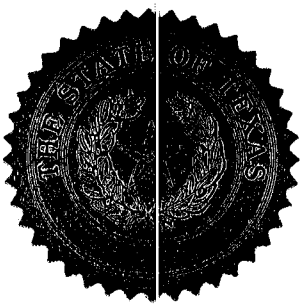
The Accu-Vote TS R6 v. 4.1.11 does not meet the standards for certification as prescribed by Section 122.001 of the Texas Election Code. Specifically, the system:

1. is not suitable for the purpose for which it is intended;
2. does not operate safely, efficiently, and accurately;
3. is not safe from fraudulent or unauthorized manipulation; and
4. is not capable of providing records from which the operation of the voting system may be audited.

CONCLUSION

The voting systems examiners noted that the audit log failed to record all significant events at the point of tabulation and recommended that the system not be re-certified until this was remedied. Accordingly, I hereby deny the Vendor's application for recertification of the Accu-Vote TS R6 system for use after December 31, 2002.

Certified under my hand and seal of office, this 1st day of August, 2001.



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Gwyn Shea
Secretary of State

REPORT OF EXAMINATION OF DIEBOLD ELECTION SYSTEMS, INC.'S ACCU-VOTE ES 2000 v.1.9.4w

PRELIMINARY STATEMENT

On May 21, 2002, Diebold Election Systems, Inc. (the "Vendor") presented its Accu-Vote ES 2000 optical scan voting system for reexamination in compliance with House Bill 1419, 77th Legislature, which requires reexamination of all voting systems of each county to determine whether the voting system continues to comply with the minimum applicable standards prescribed by law. The system was formerly distributed by Global Election Systems. The examination was conducted in Austin, Texas. Pursuant to Sections 122.035(a) and (b) of the Texas Election Code, the Secretary of State appointed the following examiners:

1. Mr. Nick Osborn, an expert in electronic data communication systems;
2. Mr. Tom Watson, an expert in electronic data communication systems;
3. Mr. Barney Knight, an expert in election law and procedure; and
4. Mr. Glenn Glover, an expert in electronic data communication systems.

Pursuant to Section 122.035(a), the Texas Attorney General appointed Dr. Jim Sneeringer, an expert in electronic data communication systems.

The Vendor first demonstrated the system; the examiners thoroughly examined the system. Examiner reports on the system are attached hereto and incorporated herein by this reference.

BRIEF DESCRIPTION OF THE ACCU-VOTE ES 2000

The Accu-Vote ES 2000 is a mark sense optical scan ballot reader. The version presented for examination was 1.9.4w

FINDINGS

The following are my independent findings, based on oral evidence presented at the examination, written evidence submitted by the Vendor in support of its application for certification, and the findings of our voting system examiners as set out in their written reports.

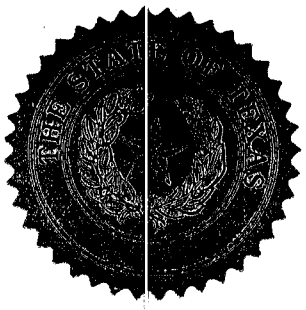
The Accu-Vote ES 2000 v. 1.9.4w does not meet the standards for certification as prescribed by Section 122.001 of the Texas Election Code. Specifically, the system:

1. is not suitable for the purpose for which it is intended;
2. does not operate safely, efficiently, and accurately;
3. is not safe from fraudulent or unauthorized manipulation; and
4. is not capable of providing records from which the operation of the voting system may be audited.

CONCLUSION

The voting systems examiners noted that the audit log failed to record all significant events at the point of tabulation and recommended that the system not be re-certified until this was remedied. Accordingly, I hereby deny the Vendor's application for recertification of the Accu-Vote ES 2000 system for use after December 31, 2002.

Certified under my hand and seal of office, this 1st day of August, 2001.



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REPORT OF EXAMINATION OF DIEBOLD ELECTION SYSTEMS, INC.'S GLOBAL ELECTION MANAGEMENT SYSTEM, v. 1.17.17

PRELIMINARY STATEMENT

On May 21, 2002, Diebold Election Systems, Inc. (the "Vendor") presented its Global Election Management (GEMS) system for reexamination in compliance with House Bill 1419, 77th Legislature, which requires reexamination of all voting systems of each county to determine whether the voting system continues to comply with the minimum applicable standards prescribed by law. The system was formerly distributed by Global Election Systems. The examination was conducted in Austin, Texas. Pursuant to Sections 122.035(a) and (b) of the Texas Election Code, the Secretary of State appointed the following examiners:

1. Mr. Nick Osborn, an expert in electronic data communication systems;
2. Mr. Tom Watson, an expert in electronic data communication systems;
3. Mr. Barney Knight, an expert in election law and procedure; and
4. Mr. Glenn Glover, an expert in electronic data communication systems.

Pursuant to Section 122.035(a), the Texas Attorney General appointed Dr. Jim Sneeringer, an expert in electronic data communication systems.

The Vendor first demonstrated the system; the examiners thoroughly examined the system. Examiner reports on the system are attached hereto and incorporated herein by this reference.

BRIEF DESCRIPTION OF GEMS

GEMS is a computer program that prepares ballots and reads and tabulates precinct election results recorded on IMATION 120 megabyte floppy disks or transmitted by modem. The version presented for examination was GEMS, v. 1.17.17

FINDINGS

The following are my independent findings, based on oral evidence presented at the examination, written evidence submitted by the Vendor in support of its application for certification, and the findings of our voting system examiners as set out in their written reports.

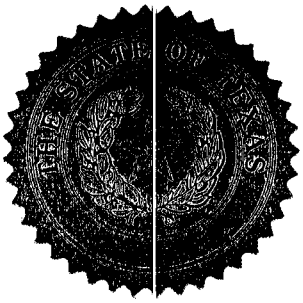
GEMS v. 1.17.17 does not meet the standards for certification as prescribed by Section 122.001 of the Texas Election Code. Specifically, the system:

1. is not suitable for the purpose for which it is intended;
2. does not operate safely, efficiently, and accurately;
3. is not safe from fraudulent or unauthorized manipulation; and
4. is not capable of providing records from which the operation of the voting system may be audited.

CONCLUSION

The voting systems examiners noted that tabulation was able to continue in GEMS even though the audit log printer was off-line and recommended that the system not be re-certified until this was remedied. Accordingly, I hereby deny the Vendor's application for recertification of the GEMS voting system for use after December 31, 2002.

Certified under my hand and seal of office, this 1st day of August, 2002.



Gwyn Shea
Secretary of State

Diebold Election Systems

The Diebold system was examined in Austin on May 21, 2002. The system is made up of three sub-systems. The names and current releases are as follows:

Accuvote-TS - version 4.1.11 - DRE voting machine
Accuvote-ES2000 - version 1.9.4w - optical scan reader
Gems- version 1.17.17 - election preparation, tally and reporting system

The system as demonstrated requires the following corrections in order to satisfy the requirements of the Texas Election Code:

- If a different TS machine is needed during the course of an election, the new machine's protective counter value should be written to the audit log.

- The precinct report must use the "long" format that indicates the under-voting.

- Accumulation on a TS machine did not record all significant events (i. e. a second attempt to load the same PCMCIA card).

- The failure to transfer the precinct results from the TS was not logged on the TS audit log nor the GEMS log.

- Tabulation was able to continue in GEMS even though the audit log printer was off-line.

- The demonstration did not use a laptop to initialize the TS activation cards as would be done for a real election. All equipment and sub-systems used must be demonstrated.

Conclusion

The system does not meet the standards outlined in the Texas Election Code. I do not recommend certification of the system.

Tom Watson
Examiner

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May 21, 2002

Ann McGeehan
Deputy Assistant
Secretary of State
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Re: Diebold Election Systems ("Global") AccuVote-TS R6 Version 4.1.11 ("AV-TSR6"), AccuVote-ES 2000 Optical Scan Reader Version 1.9W ("Scan Reader"), and Global Election Management System Version 1.17.17 ("GEMS")

Dear Ms. McGeehan:

Pursuant to my appointment as an examiner under §122.035 of the Texas Election Code, I attended a scheduled examination on Tuesday, May 21, 2002, for the purpose of examining the above referenced AccuVote TS R6, the Scan Reader and Gems. At that time, Diebold made a presentation and the examiners were able to ask questions and examine the use and function of the AV-TSR6, the Scan Reader and GEMS. The efficiency of the examination was limited due to Diebold having to interrupt the examination to prepare an election that would enable the examiners to review and examine the function of required straight party and other abilities.

In that examination, I relied upon representations of Diebold concerning operation of the software and electronic components. Those representations were made during an extended examination and were considered together with those contained in the printed materials for the AV-TSR6, Scan Reader and Gems. Other than examining the materials provided, observing the demonstration, presenting questions and observing the response of Diebold to my questions and those presented by the other examiners, I did not conduct an independent examination of the software or the electronic components.

This report is concerned solely with the ability of the AV-TSR6, Scan Reader and Gems to operate and comply with Texas Election Law. No opinion is expressed regarding the suitability of the system for the purposes of or use by any jurisdiction. The AV-TSR6 is a voting machine and voting system equipment, the Scan Reader is automatic tabulation equipment, and GEMS is the operating system for an electronic voting system as those terms are defined in § *121.003, Tex. Elec. Code*.

AV-TSR6. Use as a voting station. The AV-TSR6 is an upgrade of the previously certified AV-TSR6. The AV-TSR6 is a DRE device that allows a voter to vote by touching the LCD Screen. The AV-TSR6 is programmed for the election by using the Gems, V. 1.17.17, to use a PCMCIA cared to load media into the AV-TSR6. The AV-TSR6 stores both ballot images and election results, as votes are cast. The voter accesses the AV-TSR6 by use of a "Smart Card" which results in the proper ballot being presented for the voter and the activation of the machine for voting. The results are recorded in both the internal memory and the external PMCIA. The AV-TSR6 appears to have and perform all the requirements and functions required for a voting machine.

No computer is required at the precinct level. At the close of election, each AV-TSR6 will print the required election results tape for the machine, and the votes may be tabulated at the precinct level and at election central using the PMCIA cards. The printer generally functioned adequately for use as a voting machine. However, I recommend the Secretary consider imposing two requirements for certification of the AV-TSR6, V. 4.1.11, as follows: (1) The election judge can enable the machine for voting without producing a zero votes printout. The machine will print a fully adequate zero report tape and should be required to do so before being able to be opened for voting. (2) The AV-TSR6 will print both an abbreviated tape and a full report tape at the close of voting. The abbreviated tape does not include some required information, e.g. undervotes. I recommend the Secretary require a modification so as to enable the machine to produce only the tape that reports all required information. In my opinion, with the two recommended modifications the AV-TSR6 meets the requirements of the Texas Election Code and is appropriate for certification by the Secretary for use as a voting machine.

AV-TSR6. Use as precinct tabulation equipment. The device appeared to accurately tabulate votes when the PMCIA cards from other voting machines were read into the device. However, the required real time log printer was wholly inadequate. The real time log printer printed on the same tape as the printout for the AV-TSR6 use as a voting machine, and the same tape was used for reporting the tabulation of precinct results. As a result, the real time log printer tape was required to be removed with the voting machine tape, and again with the precinct tabulation tape. Further, the real time log printer did not record numerous events. As examples: it recorded the sending of data, but not that the sending of the data had failed; it did not report error messages; and it did not report all other attempts to interface with or use the machine as tabulation equipment. I recommend the AV-TSR6 not be certified as automatic tabulation equipment for the collection and tabulation of precinct results until such time as the real time log printer functions in a manner to record all events and to preserve an audit trail.

GEMS Software. GEMS provides a single data base for the entire election. The Touchscreen voting station stores ballot images on the PMCIA card and on the hard drive. The ballot images are randomly distributed in storage. Each of the voting stations has a separate ID# that transmits to GEMS, and there are multiple ID#s applicable to each election, e.g. precinct number, copy number machine number, and election number.

During the examination, the Vendor demonstrated GEMS to function at election central as automatic tabulation equipment and as capable of satisfactorily tabulating votes. However, GEMS again permitted operations and tabulation when the required real-time log printer was not attached, was turned off, etc. This continues to be a problem based on some prior examinations. In addition, as GEMS existed when demonstrated on May 21, 2002, the real time log printer did not fully and adequately log all events, error messages, entries and instructions from the keyboard and other functions. The election central log printer function was not demonstrated to materially comply in any respect with the requirements for an audit trail, or log printers.

I recommend that GEMS not be certified as meeting the requirements of Chapt. 122, Subchapt. A, Texas Election Code, until such time as GEMS is modified to (1) automatically stop the function of election central if the real-time log printer is disconnected or turned off; and (2) require the real time log printer to record all events, failed attempts, error messages, keyboard entries, etc. Based upon my observations and examination, GEMS will not satisfy the requirements of Chapt. 122 until these requirements are satisfied.

AccuVote-ES 2000 Optical Scan Reader Version 1.9W.

The Scan Reader is automatic tabulating equipment and accurately tabulated ballots during the examination. However, the required log printer was not adequate to perform the required tasks to produce an audit trail. The real time log printer printed on the same tape as the printout for reporting the tabulation of precinct results. As a result, the real time log printer tape was required to be removed with the precinct tabulation tape. Further, the printer did not record all events required for an adequate audit log. Based upon my observations and examination, the Scan Reader is accurate in the scanning and recording of votes but will not satisfy the requirements of Chapt. 122 until the requirements for a real time log printer are satisfied.

Very truly yours,

Barney L. Knight

The State of Texas

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Gwyn Shea
Secretary of State

TO: Ann McGeehan
Elections Division Director

FROM: Glenn Glover
Voting System Examiner

DATE: June 3, 2002

A voting systems certification examination was held at the Office of the Secretary of State Elections Division on Tuesday morning, May 21 2002.

Diebold Election Systems Inc. submitted their election system products of the AccuVote-TS R-6 Touch screen DRE, AccuVOTE ES-2000 OPTICAL SCAN READER 1.94W, and the Global Election Management System (GEMS) version 1.17.17.

The AccuVote-TS unit operates on the Windows CE operating system and is controlled exclusively by touching the LCD and entering a smart card into the card reader. The AccuVote-TS unit operates in one of four states: Pre-Download Mode, Pre-Election Testing Mode, Election Mode, and Post-Election Mode. The AccuVote-TS retains the ballot image and corresponding result of every ballot counted in Pre-Election Testing mode as well as in Election Mode in both external media and internal storage.

The AccuVote-TS has an accumulator function that allows election results from all AccuVote-TS units to be accumulated to a single unit at the polling location. Once all results have been accumulated, they are tabulated, printed, and results are transferred to the host computer running the GEMS software.

The examination revealed that as the AccuVote-TS performs its accumulation function, it does no real-time print of audit information to it's continuous feed printer which is a requirement of all vote tabulation device used in Texas elections. If the AccuVote-TS only collected the individual election information from each AccuVote-TS units, then transferred the raw election data to GEMs, real-time printing would not be a requirement because it would not tabulate results. The AccuVote-TS unit can print audit information but only through a menu option, not in real-time.

GEMS is Diebold's election management software solution that operates in the Microsoft Windows NT environment. The software is involved in all phases of the election process. GEMS is responsible for the definition of jurisdictional information, the creation of ballot content and ballot artwork. GEMS also manages voting device media programming, election results consolidation and tallying, as well as provides election results reporting tools.

The GEMS demonstration revealed that the tabulation features also did not meet the requirement of printing real-time audit events to a continuous feed printer. Instead GEMS spools the information, then prints audit events at a later point in processing. The AccuVOTE ES-2000 Optical Scan Reader was not presented because of a lack of time during the examination.

Based on these two observations, I recommend the AccuVote-TS and GEMS be not certified at this time for use in Texas elections until the real-time audit requirements are fulfilled for the tabulation function of the system. The presentation of the AccuVOTE ES-2000 Optical Scan Reader should be rescheduled for examination and consideration of certification.

All comments and recommendations are made in my capacity as an examiner of voting systems and are based on documentation and demonstrations provided by Diebold Election Systems Inc.

Voting System Examination
Diebold Election Systems

Prepared for the
Secretary of State of Texas

James Sneeringer, Ph.D.
Designee of the Attorney General

This report comprises the findings of the Attorney General's designee from an examination of the equipment listed above, pursuant to Title 9, Chapter 122 of the Texas Election Code, section 122.036(b).

Examination Date	May 21, 2002
Report Date	May 25, 2002

Purpose	Component	Version
Voting	AccuVote-TS R-6	4.1.11
Scanning	AccuVote-ES 2000	1.94w
Election Setup	Global Election Management System	1.17.17
Tabulation	Global Election Management System	1.17.17

Voting

Election Setup	PCMCIA card. Nothing is pre-programmed in the terminals; all the election information is in the PCMCIA card.
Zero-total report	On the thermal printer.
Authorization to vote / Ballot selection	A manager card, when used with the manager password, allows any R6 to generate PCMCIA cards to authorize voting, and to perform other administrative functions. The PCMCIA cards are automatically erased after voting, so they cannot be reused. The manager card and password authorize someone to perform any operation that the R6 is capable of, including clearing elections (although the last copy is never erased). There is no hierarchy of management functions.
View / Vote	LCD display / touch screen
Vote Storage	Internal flash memory and on the PCMCIA card.
Precinct Consolidation	Any R6 can accumulate results from other R6 devices in the same precinct, and forward all the results to election central in a single modem call. The R6 has a real-time audit printer, but it does not record all significant tabulation events.

Transfer Results	PCMCIA cards or a modem.
Print precinct results	On the thermal printer
Straight party / crossover	Yes. Canceling a straight-party vote cancels all previously selected crossover votes without warning.
ADA	Yes, but ADA capability is verified separately by the Secretary of State's office, so it was not demonstrated to the examiners.
Notes	• Each R6 is an independent stand-alone system, which can communicate with other stations or election central only when the polls are closed. • In the event of an attempt to repeat the upload of a precinct's results, the event is logged on the printer at the R6. (However, at election central, the only thing that is logged is the fact that a session was opened and closed without uploading any results.)

Voting: Questions, Risks and Problems

1. If a voter cancels a straight-party vote after having voted individual races, his crossover votes in the individual races are cancelled without a warning. This could cause him to cast votes different from what he intended. The Diebold representatives pointed out that this is plainly visible on the screen, and that he must step through every page, and can see all the votes that were changed. This is true, but since the voter may assume his previous results are unchanged, he has no reason to inspect each page closely for possible changes.
2. The R6 cannot enforce requirements to print pre- or post-election reports, such as a zero-total report. Poll workers must be trained to request the reports that are needed. These things should be determined during election setup, and produced automatically, so that training requirements and mistakes are minimized.
3. The R6 has only one level of security. The election judge can do anything that anyone can do. The more sensitive operations (such as clearing an election or deleting an election archive) should only be permitted with an additional security code, which is not given to the election judge unless an unusual situation arises.
4. When precinct results are tabulated, attempts to tabulate results from the same station twice are not recorded on the real-time audit log printer unless the operator says to overwrite the previous results. Also, the operator messages and responses are not recorded. For example, if an attempt is made to load a voting stations results twice, the operator will be told that it is a duplicate, and asked whether to overwrite or cancel. If he replies "cancel," nothing at all will be recorded on the real-time audit-log printer. It should record the failed attempt to load precinct data, the operator message, and the operator response. *The R6 should not be certified until this is fixed.*
5. When a modem upload fails, the printed audit log on the voting station still reports success. The screen correctly reports failure, even though the log is wrong. *The R6 should not e certified until this is fixed.*
6. If a voting station should fail, you can substitute a different one in the middle of the election. However, the representatives could not say whether the protective counter values are recorded in the log when the swap is made.

The demonstration did not include the correct test ballots for Texas, nor was the correct equipment demonstrated. It is suggested that at the next demonstration all equipment that may be needed to completely demonstrate the system be brought to the exam site.

Recommendations

The Department of Information Resources (DIR) recommends that the system, as demonstrated, not be certified until deficiencies with the log printer and zero tape have been remedied.

Respectfully,

Nick Osborn
Systems Analyst

CP:MM:NO:sk

Election Setup / Tabulation

Results Storage	Encrypted, proprietary database on the hard drive.
Tamper Resistance	The OS is locked down during tabulation and the data is encrypted.
OS access	None during tabulation.
Real-Time Audit Log	There is a log printer, but the system continues to function when the printer is offline. Messages are queued and printed when the printer comes back online.
Data Integrity	The Diebold representatives did not know what measures are taken to be sure that the data remains consistent after a failure. See below.

Election Setup / Tabulation: Questions, Risks and Problems

7. GEMS did not log an attempt to repeat the upload of the results from a precinct, although it did log the fact that a connection was made without transmitting anything.
8. GEMS continued to operate after the real-time audit log printer was disabled. The system should be disabled whenever that printer is not operating, whatever the reason. *The system does not comply with the Secretary of State's rules, and should not be certified until this is fixed.*
9. The Diebold representatives did not know what measures are taken to be sure that the data remains consistent after a failure. For example, if precinct results are being loaded when the power fails on the tally system, either all totals should be updated and the precinct marked "tabulated," or no totals should be updated and the precinct not marked "tabulated." The database should never be left in an inconsistent state. *The system should not be certified until this question has been satisfactorily answered.*

DEPARTMENT OF INFORMATION RESOURCES
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June 13, 2002

Ms. Ann McGeehan
Deputy Assistant
Office of the Secretary of State
1019 Brazos Street
Austin, TX 78701

RE: Examination of Accu-Vote TS R6 Voting Hardware from Global Election Systems (GES)

Dear Ms. McGeehan:

I attended a scheduled examination May 21, 2002, at 9:30 am, for the purpose of examining the Global Election Management Systems (GEMS) hardware. The report below summarizes my findings.

Voting Systems Versions

Hardware/Software Version	**Date Previously Certified**
AccuVote-TS R-6 Touchscreen (DRE) 4.1.11	May 2001
AccuVote-ES-2000 Optical Scan Reader 1.94W	January 2000
Global Election Management System (GEMS) 1.17.17	May 2001

Results of the examination

The Accu-Vote TS R6 has not changed significantly since the previous certification exam. However, some certification concerns emerged that were not addressed in the previous exam.

It appears that the zero tape required at initialization of the polls on Election Day is not required. This should not be optional. The system as demonstrated cannot be certified in this condition.

The PCMCIA card captures each voting unit's internal serial number. This is one of the security features that may help prevent vote fraud. It is suggested that a post-election audit module include a tally and report on all voting units to determine that the serial number of all units sent out matches the serial number of all units that were counted by the tally software.

The audit log did not print an entry when a data transmission failed. Interrupting the audit log printer itself did not generate a system error or halt processing. This is an unacceptable condition that must be addressed before the equipment can be certified for sale in the state.

The State of Texas

Elections Division
P.O. Box 12060
Austin, Texas 78711-2060
www.sos.state.tx.us

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Fax: 512-475-2811
TTY: 7-1-1
(800) 252-VOTE (8683)

Geoffrey S. Connor
Secretary of State

REPORT OF EXAMINATION OF DIEBOLD ELECTION SYSTEMS, INC.'S ACCU-VOTE TS BALLOT STATION v. 4.1.15

PRELIMINARY STATEMENT

On September 10, 2002, Diebold Election Systems, Inc. (the "Vendor") presented its Accu-Vote TS Ballot Station system for modification and reexamination in compliance with House Bill 1419, 77th Legislature, 2001, which requires reexamination of all voting systems of each county to determine whether the voting system continues to comply with the minimum applicable standards prescribed by law. The system had been previously examined in May 2002. The examination was conducted in Austin, Texas. Pursuant to Sections 122.035(a) and (b) of the Texas Election Code, the Secretary of State appointed the following examiners:

1. Mr. Nick Osborn, an expert in electronic data communication systems;
2. Mr. Tom Watson, an expert in electronic data communication systems;
3. Mr. Barney Knight, an expert in election law and procedure; and
4. Mr. Glenn Glover, an expert in electronic data communication systems.

Pursuant to Section 122.035(a), the Texas Attorney General appointed Dr. Jim Sneeringer, an expert in electronic data communication systems.

The Vendor first demonstrated the system; the examiners thoroughly examined the system. Examiner reports on the system are attached hereto and incorporated herein by this reference. After the September 10th examination, the vendor made changes based on the initial examiner reports. The re-examination was conducted on January 3, 2003 at the Secretary of State's office in Austin. Mr. Osborn and Mr. Glover attended this examination and their reports are attached. The version numbers reflect those presented at the January 3rd examination. A copy of a letter from the vendor explaining the modification is also attached to the certification.

BRIEF DESCRIPTION OF THE ACCU-VOTE TS BALLOT STATION

The Accu-Vote TS Ballot Station is a modification to the previously certified Accu-Vote TS Direct Record Electronic voting machine. The modified system features a larger, color screen, and a thermal printer. The version presented for examination was version 4.1.15.

FINDINGS

The following are my independent findings, based on oral evidence presented at the examination, written evidence submitted by the Vendor in support of its application for certification, and the findings of our voting system examiners as set out in their written reports.

The Accu-Vote TS Ballot Station v. 4.1.15:

1. Preserves the secrecy of the ballot;
2. Is suitable for the purpose for which it is intended;
3. Operates safely, efficiently, and accurately;
4. Is safe from fraudulent or unauthorized manipulation;
5. Permits voting on all offices and measures to be voted on at the election;
6. Prevents counting votes on offices and measures on which the voter is not entitled to vote;
7. Prevents counting votes by the same voter for more than one candidate for the same office or, in elections in which a voter is entitled to vote for more than one candidate for the same office, prevents counting votes for more than the number of candidates for whom the voter is entitled to vote;
8. Prevents counting a vote on the same office or measure more than once;
9. Permits write-in voting;
10. Is capable of permitting straight-party voting; and
11. Is capable of providing records from which the operation of the system may be

CONCLUSION

The examiners determined that the Vendor had resolved the problems they identified in the earlier September 2002 examination of the system. Accordingly, I hereby grant the Vendor's application for re-certification of the Accu-Vote TS Ballot Station voting system.

Signed under my hand and seal of office, this 7th day of October, 2003.

Luis Saenz
Assistant Secretary of State

ELECTION
SYSTEMS & SOFTWARE

November 13, 2003

Ms. Irene Diaz
Secretary of State's Office
208 E. 10th St., 3rd Floor
Austin, TX 78701

Dear Ms. Diaz:

Enclosed are the required documents for the upcoming Texas certification event in January. I wanted to take just a moment to explain what is enclosed and what ES&S plans to bring in January.

ES&S is essentially only bringing two new products that fall under the Unity software suite of products. They are the ES&S Optech Image Manager, which is ballot layout software for the Optech products and the iVotronic Image Manager which is layout software for the iVotronic DRE. The upgraded version of Unity we will be presenting is Unity version 2.4.2.

Unity 2.4.2 is an upgrade of version 2.4 that was brought to the last exam in May. Unity 2.4.2 can be used with all of the ES&S product line, including legacy products. Our legacy products in Texas are the Optech 3PE, the Optech 4C, and the Votronic DRE. We do plan to bring these legacy products in January for the only reason of showing how they can be used with the updated Unity software version 2.4.2. We are not submitting a new version of these already certified products.

As you may recall, during the last certification in May, there were letters next to the version numbers of the following products: the iVotronic, the M100, and the M650. We do plan to bring these products back for the January certification with the same version number but without the alpha letters. An ITA examined these versions and we expect to receive the stamp of approval from the EAC by the end of this year. The reasoning for the letters on the version numbers from the last exam is explained on Form 100, schedule A.

I hope this letter gives everyone a better understanding of what ES&S is trying to accomplish in January. We look forward to seeing you again in January.

Sincerely,

Lisa Conway

Lisa Conway
Certification Associate

The State of Texas

Elections Division
P.O. Box 12060
Austin, Texas 78711-2060
www.sos.state.tx.us

Gwyn Shea
Secretary of State

Phone: 512-463-5650
Fax: 512-475-2811
TTY: 7-1-1
(800) 252-VOTE (8683)

VOTING SYSTEM CERTIFICATION - FORM 100

Person Making Request	Sue McKay
Organization	Election Systems & Software
Street Address, City, State, Zip	11208 John Galt Blvd. Omaha, NE 68137
Phone Number	402.593.0101
Fax Number	402.970.1275
E-Mail Address	SImckay@essvote.com

	Component Submitted for Certification	Exact Version	Previous Texas Certification Date*	NASED Certification Date for this Version	NASED Status Number for This Version
1	IVotronic DRE Voting System	8.0.0.0	May, 2003	In progress	N/A
2	Model 100 OMR Precinct Counter	5.0.0.0	May, 2003	In progress	N/A
3	Model 650	1.2.0.0	May, 2003	In progress	N/A
4	Unity Election System Software	2.4.2	May, 2003	In progress	N/A
5					
6					
7					

*For the most recent certification, or state "None"

Required Materials Checklist (Indicate materials submitted with an "X")	
X	Software (7 copies required)
X	Source Code (5 copies required)
X	User Manuals (7 copies required)
X	Forms 100 and 101
X	Certification Fee
X	Summary Report from a Nationally-Recognized Testing Laboratory (7 copies required)

If applicable, attach Schedule A, listing issues raised in past examinations.

Signature of Person Making Request	Title	Date
Sue McKay	Director of Certification	11/14/03

The State of Texas

Elections Division P.O.
Box 12060 Austin,
Texas 78711-2060
www.sos.state.tx.us

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Gwyn Shea
Secretary of State

VOTING SYSTEM CERTIFICATION - FORM 100 SCHEDULE A

	Component	Issue*	How Addressed
1	Firmware versions	Confusing version numbering scheme.	Please see attached version description.
2	Data Acquisition Manager	Should be changed so that only pct. files for the current election appear in the list of results to be upgloaded.	The versions from the last certification event have not been changed. They are the versions that were submitted to comply with the 2002 Voting System Standards. This suggestion will be taken into consideration during the development of future versions.
3	Unity real time audit log	Suggested an on line viewer that would include an even more detailed information.	Please see comment to number two above.
4	IVotronic	Messages for the early cast feature are confusing.	Please see comment to number two above.
5			
6			
7			
8			
9			
10			

*From the last time this component was examined

Use additional sheets as necessary

ES&S utilizes a standard versioning convention to identify all software and firmware releases. This system uses four digits to identify the scope of the changes in a particular release. The convention is as follows:

- First number is reserved for a new release or a major functional revision.
- Second number is reserved for minor functional revisions.
- Third number is reserved for bug fixes.
- Fourth number is reserved for one off functionality, usually state specific.

During the software development phase version numbers of the release are determined when the work begins. In order to manage changes during development and testing an alpha character is appended to the targeted version number, which identifies a particular build. Appended alpha characters start at "a" and progress through "z", and, if necessary, revision identifiers will re-start at "za" and progress through "zz". Thus a typical Model 100 firmware release would follow this example:

- 5.0.0.0a is the 1st build of a major revision.
- 5.0.0.0z is the 26th build of a major revision
- 5.0.0.0zz is the 52nd build of a major revision.

When the prospective release has proven through testing and ITA qualification the alpha identifier is removed and the product is ready to be released. The final version appears then appears as follows:

- 5.0.0.0 would be ITA qualified production release.

The version number and revision history will be located in the product directory where the software or firmware is stored.

The State of Texas

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Gwyn Shea
Secretary of State

January 11, 2002

Mr. Steve Bolton
Vice-President, Product Management
Election Systems and Software
11208 John Galt Blvd.
Omaha, Nebraska 68137

Dear Mr. Bolton:

Please find enclosed the results for the October 23, 2001 examinations of Election Systems and Software voting systems listed below:

Optical Ballot Tabulating System, Model 650, version 1.1.3.1
Modifications to iVotronic DRE system, version 6.1.4.3
Unity software, version 1.1 (re-examination)
Modifications to Optical Scan Voting Systems, Models 100, version 4.7.2 and 150/550, version 1.4.1.

If you have any questions or concerns, please feel free to contact Paul Miles, Elizabeth Hanshaw Winn, or Leticia Calvo toll-free at 1-800-252-VOTE(8683).

Sincerely,

Melinda Nickless

Melinda Nickless
Assistant Director of Elections

Enclosures

MN:LC

ELECTION
SYSTEMS & SOFTWARE

March 21, 2002

Ms. Leticia Calvo
Secretary of State's Office - Elections Division
208 East 10th Street
Thomas J. Rusk State Building, 3rd Floor
Austin, TX 78701

Dear Leticia:

Per Steve Bolton's e-mail to you on March 19th, please find the Change Releases, Source Code Reviews, and Wyle ITA letters for the products listed below.

iVotronic from v. 6.2.0.1 to 6.2.0.3
Model 100 from v. 4.7.2 to 4.7.6
Model 150/550 (115/315) from v. 1.4.1. to 1.4.2
Model 650 from 1.1.3.1 to 1.1.6.0

We look forward to hearing from the State regarding a firm date and time for the system examination. If there is any additional information I can provide, please do not hesitate to contact Steve Bolton or myself at our Omaha office, 800-247-8683. Thank you in advance for your consideration.

Sincerely,

Sue L. McKay
Director of Certification

Leticia Calvo

From: Bolton, Steve [redacted]

Sent: Tuesday, March 19, 2002 10:24 AM

To: [redacted]

Cc: [redacted] Hughes, David; McKay, Sue; Prescott, Karen; Blakely, Don; Lehan, Lisa

Subject: Certification

Leticia,

I wish to discuss the systems for the upcoming RE-Certification. First, I want to apologize for not getting the correct message across on the upgrades to existing certified systems. I was out of town and asked David to communicate to you the reason for the upgrades to the Model 100, iVotronic, Model 650, and Models 150/550. These system's firmware were undergoing FEC re-qualification at the time of the last examination in Texas and were anticipated to complete review and functionals at the current submitted level of firmware revision. While in final code review, some extra commenting of the code or multiple return correction of the code was requested by the FEC examiners. While this is very common, and we strive to exceed the requirements, sometimes one gets by us. Due to these requests, the added code comments require us to increment the version number, creating a new firmware level.

My request to your office should have read from David, that due to the nature of the changes, and that the functionality is not changed and we received final FEC qualification on these version numbers, ES&S is asking that these revised FEC qualified version numbers be submitted, and approved for use without the need for a meeting of the examiners. Change difference reports can easily be looked at to determine what was changed in the code at the request of the FEC examiners. You will notice in the following list, that the version numbers incremented are in the 3rd and 4th digits, which mean code commenting, or FEC code house keeping. Any functional changes warrant either a 1st or 2nd digit revision, depending on how large the change was.

Model 100: TX cert = V. 4.7.2
Model 100: FEC cert V. 4.7.6

iVotronic: TX cert = V. 6.2.0.1
iVotronic: FEC cert = V. 6.2.0.3

Model 150/550: TX cert = V. 1.4.1
Model 150/550: FEC cert = V. 1.4.2

Mode 650: TX cert = V. 1.1..5.1
Model 650 FEC cert = V. 1.1.6.0

To examine these upgrades by functional testing in a Texas examination would be futile, as they have no functional differences to the operation of the system that can be demonstrated. I did not intend to even bring these systems with us, but rather to simply keep Texas on the currently functionally tested FEC qualified versions.

Given that my intentions were to not bring these systems to Austin, the examination would focus on the Optech and punch card systems into the Unity Software and this could be accomplished in a single day, not the two reflected from adding the other four systems.

Please realize that I am not trying to get out of examination fees paid to your state, but rather the changes to the

four above listed systems are not demonstratable and are functionally identical to the versions certified in the last examination. I also do not see a need have the examiners stay the extra day when not needed, nor do I see a cost to examine these simple changes being at $6000.

Please review this information with your office and let me know how we can proceed. Thank you for your consideration.

Respectfully yours,

Steve Bolton
Vice President, Product Management
Election Systems & Software, Inc.
Omaha NE, 68137
402-593-0101 ext. 1118
[redacted]

Dear Mr. Hughes:
Thank you for your response. Due to the increased number of systems you will be bringing, we will need a full two days to conduct the examinations. In order to compensate the voting system examiners for these two full days, you will need to submit a fee of $15,000, which represents $3,000 per full review and introduction of the Unity to the Optech IIIPe Eagle OMR Precinct Counter, Optech IV C Precinct Count System, PCBT OMR Precinct Counter and $1,500 per modification of the remaining systems.
If you have any questions or concerns regarding this matter, please contact Paul Miles (<mailto[redacted]> [redacted] or Leticia Calvo (<mailto[redacted]> [redacted].
-----Original Message-----
From: Hughes, David [mailto:[redacted]
Sent: Monday, March 11, 2002 11:08 AM
To: [redacted]
Cc: McKay, Sue; Shoemaker, Roberta
Subject: Intention to Submit

Ms. Leticia Calvo
Office of the Secretary of State
Elections Division
Austin, Texas
Dear Ms. Calvo:
Please accept this e/mail as confirmation that ES&S intends to file an application to re-certify products that have been previously certified for use in the State of Texas. In all cases the products submitted will be upgrades from current versions. The systems we intend to submit are listed

below and where applicable the revision levels are listed with the product.
1. Model 100 OMR Precinct Counter Ver. 4.7.6
2. Models 150/550 OMR Central Counters Ver. 1.4.2
3. iVotronic DRE Precinct Counter Ver. 6.2.0.3
4. Model 650 OMR Central Count System Ver. 1.1.6.0
5. Optech IIIPe Eagle OMR Precinct Counter
6. Optech IV C Precinct Count System
7. PCBT OMR Precinct Counter.

Application and fees will be forwarded to your offices by April 5, 2002
Respectfully:
-S-
David M. Hughes
ES&S Certification Department
David M. Hughes
ES&S
11208 John Galt Blvd.
Omaha, NE 68107
Tel: 1.402.593.0101
Fax: 1.402.593.8107
E/mail: [redacted]
Steve Bolton
Vice President, Product Management
Election Systems & Software, Inc.
Omaha NE, 68137
402-593-0101 ext. 1118
[redacted]

ELECTION
SYSTEMS & SOFTWARE

May 27, 2003

Ms. Ann McGeehan
Director of Elections
Office of Secretary of State
208 E. 10th Street, 3rd Floor
Austin, TX 78701

Re: Texas Administrative Code; Use of Audit Logs in Automatic Tabulation Equipment

Dear Ms. McGeehan:

I am writing to you after examination of the latest change to the Texas Administrative code; specifically, Title 1, Part 4, Chapter 81, Subchapter D, rule § 81.62 (d). While I agree that the March 25th, 2003 amendment to the rule is a definite improvement and a welcome change, I believe the rule contains requirements that cannot be applied consistently to each subsystem of a voting system. Also, over the past several years, there has been confusion by the vendors and the certification committee over the terminology of the rule and exactly how to apply the intent of the rule. This is due to the fact that the rule was written to deal with earlier election technologies. Technologies in use today warrant a change in the rule to adequately meet the original intent of the rule.

As a result, I would like to recommend changes that accomplish the following objectives: 1) to better define the Rule's content so that a more precise declaration of the intent of the rule is followed by the vendors, 2) identify ways to enable the certification examination committee to better apply the intent of the rule to the election systems being examined, and 3) parse the rule into subsections that will apply to the subsystems of any voting system.

For clarification, I have defined the following two basic parts of the election system. This seems to be the point that offers the most confusion with the intent of the rule.

Automatic Tabulation Equipment: Refers to Ballot Tabulators either DRE or Optical Scan, either central or in precinct devices. These devices simply allow the

voter to input directly or mark a ballot for scanning in the precinct. They store vote counts, as in a ballot tabulator, or ballot images, as in a DRE system.
Accumulation systems: Refers to a program designed to accumulate results from automatic tabulation equipment. These are commonly referred to as central election results software programs or reporting systems.

To shorten my explanation, I will not go into each item by detail and explain, but rather, point out some obvious issues, then provide my recommendation. Through the recommendation, it will become clear why there has been and still can be confusion with the rule.

First, subsection(b) item (4) refers to identifying input ports used for modem *from* precincts, which suggests that this is referring to the central accumulation system. This *does not apply* to either precinct or central Opscan systems, nor precinct DRE systems (automatic tabulation equipment), yet the title of the rule (ref. RULE §81.62) states, use of audit logs in Automatic Tabulation Equipment.

Second, item (5) refers to users logging in and out from an election system. This does not apply to central or precinct optical scan, but could apply to some vendors DRE controller terminals. Again, no reference is made to declare which part of the election subsystem it should be applied to. Again, the examiners are left trying to determine how to legally interpret the rule and the vendors are left trying to guess how they ultimately will.

The following recommendation preserves the intent of the original rule and allows application of a new set of rules that apply directly to the specific election subsystem it is intended. First, the current rule, and then the recommendations.

Current Rule from TAC

TITLE 1	ADMINISTRATION
PART 4	OFFICE OF THE SECRETARY OF STATE
CHAPTER 81	ELECTIONS
SUBCHAPTER D	VOTING SYSTEM CERTIFICATION
RULE §81.62	Use of Audit Logs in Automatic Tabulation Equipment

(a) For any voting tabulation device, or any modification to a voting tabulation device, to be certified for use in Texas elections, the device shall include a continuous feed printer dedicated to a real-time audit log. All significant election events and their date and time stamps shall be printed to the audit log.

(b) The definition of "significant election events" in subsection (a) of this rule includes but is not limited to:

(1) error messages and operator response to those messages;
(2) number of ballots read for a given precinct;
(3) completion of reading ballots for a given precinct;

(4) identity of the input ports used for modem transfers from precincts;
(5) users logging in and out from election system;
(6) precincts being zeroed;
(7) reports being generated; and
(8) diagnostics of any type being run.

(c) The audit log for an election shall be retained by the custodian of election records for the appropriate preservation period.

(d) An alternative to the real-time printed audit log requirement may be approved by the Secretary of State for use on a precinct level voting system if the Secretary determines that the alternative produces at a minimum a sufficient record of items (b)(1)-(8) listed above and any administrative functions performed prior to opening the polls, the opening and closing of the polls, all ballot images, and any administrative functions performed after the closing of the polls. The alternative audit must be capable of being printed and a printed copy must be made available upon request.

Proposed Changes (Changes in bold)

TITLE 1 ADMINISTRATION
PART 4 OFFICE OF THE SECRETARY OF STATE
CHAPTER 81 ELECTIONS
SUBCHAPTER D VOTING SYSTEM CERTIFICATION
RULE §81.62 Use of Audit Logs in **Election Systems**

(a) For any voting tabulation device, or any modification to a voting tabulation device, **OR any accumulation software systems (reporting programs used to consolidate and distribute election results from tabulation devices)** to be certified for use in Texas elections, the device **or system** shall include a continuous feed printer dedicated to a real-time audit log. All significant election events and their date and time stamps shall be printed to the audit log.

(b) The definition of "significant election events" in subsection (a) of this rule includes ***but is not limited to***:

(1) For Central Optical Scan tabulation devices...
(a) error messages and operator response to those messages;
(b) number of ballots read for a given precinct;
(c) precincts being zeroed **or saved to storage medium;**
(d) reports being generated; and
(e) diagnostics of any type being run.

(2) For Precinct based Optical Scan tabulation devices...
(a) error messages and operator response to those messages;
(b) **Poll opening event**;

(c) **First ballot processed;**
(d) **Poll closing event;**
(e) **number of ballots read for a given precinct, (if the system does not produce precinct reports with this information);**
(f) **number of blank ballots accepted;**
(g) **number of over voted ballots accepted;**
(h) **number of write in ballots accepted;**
(i) precincts being zeroed;
(j) reports being generated;
(k) **administrative or** diagnostic **events** of any type being run **prior to poll opening, while polls are open, and after polls are closed; and**
(l) **success or failure to modem results to a central site.**

(3) For Precinct based DRE tabulation devices...
(a) error messages and operator response to those messages;
(b) number of ballots **recorded** for a given **terminal;**
(c) a record of each recorded ballot image for a given terminal;
(d) **poll opening event;**
(e) **poll closing event;**
(f) precincts **or terminals** being zeroed;
(g) reports being generated;
(h) **administrative or** diagnostic **events** of any type being run**, prior to poll opening, while polls are open, and after polls are closed; and**
(i) **success or failure to modem results to a central site.**

(4) For Central election results software programs...(Reporting software systems)
(a) error messages and operator response to those messages;
(b) number of ballots **received or uploaded** for a given precinct;
(c) **identity of tabulation device type the system is receiving results from;**
(d) **identity of precincts the system is receiving from the tabulation devices;**
(e) **identity of the means by which the system accepted results, i.e. modem, direct read from disk, serial upload, etc.;**
(f) users logging in and out from election system;
(g) precincts being zeroed;
(h) reports being generated; and
(i) diagnostics of any type being run.

(c) The audit log for an election shall be retained by the custodian of election records for the appropriate preservation period.

(d) An alternative to the real-time printed audit log requirement may be approved by the Secretary of State for use on a precinct level voting system if the Secretary determines that the alternative produces at a minimum a sufficient record of items **(2) (a-l) and (3) (a-i)** listed above. ~~and any administrative functions performed prior to opening the polls, the opening~~

~~and closing of the polls, all ballot images, and any administrative functions performed after the closing of the polls.~~ The alternative audit must be capable of being printed and a printed copy must be made available upon request.

The strikeout in item subsection (d) above, is due to optical scan system differences from DRE systems. Optical scan systems typically do not store ballot images, but rather store aggregated vote totals by precinct from each ballot scanned. Those items struck out were added to each individual device subsection within the rule for clarity.

I would like to hear your feedback on the proposed changes and start the process of change for the recommendations. I would like to discuss any issues you might have on the content or context of the changes before formally presenting these changes. Feel free to call me directly to discuss.

Sincerely,

Steve Bolton
VP Product Management
ESS

Cc: Don Blakely
Mike Devereaux
Roy Orr

The State of Texas

Elections Division
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Gwyn Shea
Secretary of State

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(800) 252-VOTE (8683)

May 7, 2003

Ms. Sue McKay
Election Systems and Software
11208 John Galt Blvd.
Omaha, Nebraska 68137

Dear Ms. McKay:

This letter is to confirm receipt of your application and fee for the May 2003 voting system examinations. We have scheduled your examination for Wednesday, May 28, 2003 from 9:30 a.m. – 4:30 p.m. Due to the number of voting systems you will be submitting for certification, we have agreed to hold your exam off-site at the Radisson Town Lake at 111 E. Cesar Chavez St., Austin, Texas.

If you have any questions, please contact Irene Diaz toll-free at 1-800-252-VOTE(8683).

Sincerely,

Ann McGeehan
Director of Elections

Enclosure: Certification Fee Receipt

AM:ID

Financial Division
P.O.Box 12887
Austin, Texas 78711-3697

Gwyn Shea
Secretary of State

Office of the Secretary of State

Packing Slip

April 3, 2003

Election Systems & Software Inc
11208 John Galt Blvd
Omaha NE 68137

Batch Number: 3120084 **Batch Date:** 04-03-2003

Client ID: 11269827
Return Method: Mail

Document Number	Document Detail	Fee
31200840002	Voting System Examination Fee	12000.00
	Total Document Fees	**2,000.00**

Payment Type	Payment Status	Payment Reference	Amount
Check	Received	90792	$12,000.00
		Total Payments Received	**$12,000.00**
		Total Amount Charged to Client Account	$0.00
		Total Amount Credited to Client Account	$0.00

Note: This is not a bill. Please do not send any payments until the monthly statement is received.
Any amount credited to Client Account may be refunded upon request.
Refunds (if applicable) will be processed upon Request.
Acknowledgement of Filing Document(s) (if present) is attached.

User ID: KCULVER

Irene Diaz

From: McKay, Sue [redacted]
Sent: Wednesday, October 22, 2003 9:43 AM
To: [redacted]
Subject: Letter from Wyle

Hello Irene,

Would you please submit this letter towards our certification in May of 2003. If you need additional information or have questions, please let me know. Thanks.

<<M100 M650_iVo Status Letter.doc>>

Sue L. McKay
Director of Certification
Election Systems & Software
(402) 537-1125
[redacted]

The State of Texas

Elections Division
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Gwyn Shea
Secretary of State

VOTING SYSTEM CERTIFICATION - FORM 100

Person Making Request	Sue McKay
Organization	Election Systems & Software
Street Address, City, State, Zip	11208 John Galt Blvd. Omaha, NE 68137
Phone Number	402.593.0101
Fax Number	402.970.1275
E-Mail Address	Slmckay@essvote.com

	Component Submitted for Certification	Exact Version	Previous Texas Certification Date*	NASED Certification Date for this Version	NASED Status Number for This Version
1	IVotronic DRE Voting System	8.0	9/11/02	In progress	N/A
2	Model 100 OMR Precinct Counter	5.0	9/11/02	In progress	N/A
3	Model 650	1.2.0.0	9/11/02	In progress	N/A
4	Unity Election System Software	2.4	9/11/02	In progress	N/A
5					
6					
7					

*For the most recent certification, or state "None"

Required Materials Checklist (Indicate materials submitted with an "X")	
X	Software (7 copies required)
X	Source Code (5 copies required)
X	User Manuals (7 copies required)
X	Forms 100 and 101
X	Certification Fee
X	Summary Report from a Nationally-Recognized Testing Laboratory (7 copies required)

If applicable, attach Schedule A, listing issues raised in past examinations.

Signature of Person Making Request	Title	Date
Sue McKay	Director of Certification	4/9/03

The State of Texas

Elections Division P.O.
Box 12060 Austin,
Texas 78711-2060
www.sos.state.tx.us

Gwyn Shea
Secretary of State

Phone: 512-463-5650
Fax: 512475-2811
TTY: 7-1-1
(800) 252-VOTE (8683)

VOTING SYSTEM CERTIFICATION - FORM 100 SCHEDULE A

	Component	Issue*	How Addressed
1	Election Reporting Manager	The printed audit log was difficult to interpret. It also had an inconsistent date/time stamp.	This issue was resolved in the version being submitted with this TDP. The ERM audit log has been enhanced and does comply with the Texas real time audit log requirements.
2	iVotronic	A request for more detailed instructions to test PEBs before opening polls to make sure there are not votes present.	The request for this was fullfilled with a letter sent referring the reader to specific instructions in the manual that explain how to qualify and test PEBs before each election.
3	iVotronic	Real Time Audit Log because the PEB tabulates ballots. (Dr. Sneeringer)	ES&S was informed not to proceed with this issue for the reason that this feature is being repealed.
4	Model 100	The Model 100 does not have a real time audit log.	Please see attached letter.
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January 6, 2003

Ms. Ann McGeehan
Elections Division Director
P.O. Box 12060
Austin, TX 78711-2060

Dear Ms. McGeehan:

I am, respectfully, requesting that the State of Texas reconsider the decision to deny certification for the Model 100 Firmware Version 4.8.0.0. This request is based on the following facts and information.

The Model 100 was developed in the mid nineties and was the first ES&S product to be designed from inception to comply with all relevant FEC requirements. In the original system requirements documents ES&S identified a risk with real time audit logs on precinct count devices. The risk was that a real time audit log printout could be, inadvertently, removed during the voting process. This would result in an unrecoverable loss of all audit data to that point in the process. For this reason and to provide a more robust audit capability the Model 100 was designed to record all necessary audit data to memory and to have the unit print this audit data automatically when the poll were closed. This approach has been approved by the both the ITA and in state level certifications.

In addition, I would like to comment on the five points that the Model 100 was judged to be out of compliance on in the certification document we received. The Model 100 has been certified and re-certified up to Version 4.7.6 over the past six years and was always found to be in compliance with these particular requirements. None of the changes between the certified Version 4.7.6 and 4.8.0.0 (release attached) had any impact on the processes or functionality that support those requirements. In view of this ES&S is at a loss to understand why we no longer comply with these requirements.

The Model 100 was first certified for use in Texas in December of 1996 and has been re-certified at improved firmware version levels periodically since that time. From the initial certification and all during the intervening six years the unit has always utilized a permanent, internally recorded audit log that was automatically printed when the polls were closed. This was found acceptable during all previous examinations with the only notation being that it could not be used as a central scanner absent a real time log.

With nearly 14,000 units in use worldwide the Model 100 has earned an enviable record in the election arena. In fact, the second largest jurisdiction in the State of Texas has used the Model 100 successfully for the last five years. The Model 100 is a current and go forward product and ES&S intends to maintain and improve it well in to the future.

With appreciation for the Divisions consideration of this matter, I am,

Respectfully:

Sue L. McKay
Certification Director

The State of Texas

Elections Division
P.O. Box 12060
Austin, Texas 78711-2060
www.sos.state.tx.us

Phone: 512-463-5650
Fax: 512-475-2811
TTY: 7-1-1
(800) 252-VOTE (8683)

Gwyn Shea
Secretary of State

VOTING SYSTEM CERTIFICATION – FORM 101

The following questions must be answered with regard to each voting system being certified. Answers should be set forth on a separate sheet of paper and attached to this form. Explain how the voting system:

1. **Preserves the secrecy of the ballot;**
2. **Is suitable for the purpose for which it is intended;**
3. **Operates safely, efficiently, and accurately;**
4. **Is safe from fraudulent or unauthorized manipulation;**
5. **Permits voting on all offices and measures to be voted on at an election;**
6. **Prevents counting votes on offices and measures on which the voter is not entitled to vote;**
7. **Prevents counting votes by the same voter for more than one candidate for the same office, and prevents counting votes for more than the number of candidates for which the voter is entitled to vote;**
8. **Prevents counting a vote on the same office or measure more than once;**
9. **Permits write-in voting;**
10. **Is capable of permitting straight-party voting;**
11. **Is capable of providing records from which the operation of the voting system may be audited; and**
12. **Is capable of producing a summary screen to allow voters to examine their choices before the ballot is finally cast.**

VOTING SYSTEM CERTIFICATION – FORM 101

1. PRESERVES THE SECRECY OF THE BALLOT:

iVotronic

The DRE Touch Screen Voting Systems provide voter secrecy throughout the voting process. First, each Voting Booth is equipped with privacy side panels and a top curtain. Second, the LCD ballot display screen design prevents on-lookers from viewing a voter's ballot while they are in the act of voting. And finally, the Voter Terminals randomly store each voter's vote-choice set (i.e., ballot image) with other ballot images when they cast their ballot so there is no way to determine/retrieve a specific voter's ballot. One exception to the ballot image randomization occurs when the coded ballot option is activated for a challenged voter.

Model 100/650

These ES&S systems function as any paper ballot system at the polling places. Voters mark their ballots in a privacy booth, return them to the ballot box in a secrecy sleeve and personally deposit them in a sealed box. These functions are under the direct control of the voter and provide no opportunity for anyone to discover how the voter has marked his or her ballot.

2. IS SUITABLE FOR THE PURPOSE FOR WHICH IT IS INTENDED.

All Voting Systems

The ES&S Voting Systems have been ITA certified by Wyle Laboratories. Their proprietary design and operating system are specifically for election use.

3. OPERATES SAFELY, EFFICIENTLY, AND ACCURATELY:

All Voting Systems

All ES&S systems are self-contained tabulators with no exposed moving parts. These systems comply with UL Standard 1950: Safety of Information Technology Equipment, Including Electrical Business Equipment. All systems meet or exceed the FEC Qualification and Acceptance Test Design Criteria. While at Wyle Laboratories, these systems recorded in excess of 297,589 votes without error.

4. IS SAFE FROM FRADULANT OR UNATHORIZED MANIPULATION:

All Voting Systems

All ES&S Systems prevent fraudulent and unauthorized use in several ways. One, electronic and physical seals prevent fraudulent manipulation of the election definition after completion of the Logic and Accuracy Test. Two, all units allow printing of an opening tape listing all of the candidates with zero totals. Certification signature lines are printed at the end of the report and must be attested to by the poll officials. Three, Public Counters are visible on every tabulator unit so that the number of ballots that have been cast on the unit can be accessed at all times.

5. PERMITS VOTING ON ALL OFFICES AND MEASURES TO BE VOTED ON AT AN ELECTION:

iVotronic

The PEB contains precinct specific programming that includes all ballot styles available for voting in that precinct. Poll officials select the appropriate ballot for the voter and the respective candidates and issues are displayed on the Voter Terminal. The iVotronic terminals allow for additional memory with a standard removable compact flash. The additional memory can range from 16 MB-192 MB which enables it to support an election of any size.

Model 100/650

The ballot format used by ES&S optical ballot scanning equipment allows for up to 153 voting positions on each side of the 8 1/2 X 14,17,and 19-inch documents. Multiple ballots may be type coded to allow voting response positions in excess of 1000. In addition to reading voter responses, the reader scans the identification "codes" of each ballot or ballot identification header. These codes identify to the System the ballot type (i.e., Republican, Democrat, Non-partisan, etc.) and precinct of origin. These codes enable the System to identify multiple ballot styles within a precinct, allowing for an almost infinite number of candidate responses per precinct.

6. PREVENTS COUNTING VOTES ON OFFICES AND MEASURES ON WHICH THE VOTER IS NOT ENTITLED TO VOTE:

All Voting Systems

If a precinct has multiple ballot styles created by split districts within that precinct, a ballot style is assigned to each split. Poll officials select the appropriate ballot style for the voter. Then, only those offices and questions associated with the ballot style that voter has the right to vote are available.

7. PREVENTS COUNTING VOTES BY THE SAME VOTER FOR MORE THAN ONE CANDIDATE FOR THE SAME OFFICE, AND PREVENTS COUNTING VOTES FOR MORE THAN THE NUMBER OF CANDIDATES FOR WHICH THE VOTER IS ENTITLED TO VOTE:

All Voting Systems

In the election definition, an individual candidate is assigned to a contest one time. Each candidate only appears on the ballot once for each office. Thus, the voter may only select a candidate once before casting their ballot. Once the voter has cast their ballot, the ballot is tabulated and can not be altered. In addition, the systems are specifically designed to prevent an over-vote from being counted.

8. PREVENTS COUNTING A VOTE ON THE SAME OFFICE OR MEASURE MORE THAN ONCE:

All Voting Systems

The election definition contains each race and measure one time. Each contest is then assigned to the ballot style(s) to which it belongs. Each ballot style includes its associated contests one time. Thus, the voter may only vote a contest once before casting their ballot. Again, once the voter cast their ballot, the ballot is tabulated and can not be altered.

9. PERMITS WRITE-IN VOTING:

iVotronic

The DRE systems provide a very simple method for accommodating write-in votes. An active write-in vote location is provided in each office where write-in voting is allowed. To vote a write-in, the voter simply selects the write-in location and an easy to-use write-in screen template appears allowing the voter to spell out the write-in name by touch-typing the letters of the name. When the voter has spelled out the name, he or she accepts the name and the terminal immediately returns to the ballot screen and displays the write-in name in the list of candidates where it belongs. The write-in name may be changed or deleted anytime prior to the voter casting their ballot. Finally, the write-in names are printed on the poll location results tape in the proper office location for which they belong.

Model 100/650

The ES&S paper ballot can be printed with a write-in line for each applicable race. The voter is instructed to write-in the name on the line provided. With the write-in response area provided for on the ballot, the integrity of the ballot is preserved.

10. IS CAPABLE OF PERMITTING STRAIGHT PARTY VOTING:

iVotronic

The iVotronic accommodates Straight Party Voting. The voter may select a Straight Party candidate by pressing the box next to the appropriate party. Once the voter selects a Straight Party choice, all candidates of that party are selected (i.e., highlighted). This choice does not affect any non-partisan candidates or questions. Voters must still vote the non-partisan offices independently.

Model 100/650

The ES&S paper ballot can be printed and programmed with a straight party section to accomplish this requirement. The voter chooses straight party by marking the response area next to the appropriate party.

11. IS CAPABLE OF PROVIDING RECORDS FROM WHICH THE OPERATION OF THE VOTING SYSTEM MAY BE AUDITED:

iVotronic

The DRE systems include a complete audit trail. Voter Terminals store entire ballot images as they were cast, including write-ins. These images are randomized according to a millisecond timer to preserve voter privacy. In addition to the actual ballot images, each Voter Terminals records a chronological event log. This event log includes every event or error message that occurred on the Voter Terminal including "clearing and testing" the unit memory for the current election, opening polls, ballots cast, closing polls, printing results, and collecting audit data. Each event record consists of the event code, the time the event took place, and the serial number of the PEB used to activate the Terminal for that event.

After each election, the binary audit data from each Voter Terminals is uploaded to a PC. The original binary format can then be converted to a text format for review. Once in the text format, each ballot image may be hand-counted if necessary. Retrieving challenged voter ballots is an example of a situation where the audit data may be used.

Model 100/650

The ES&S optical systems provide 3 separate audit trails.

(1) Hard copy reports of election results generated by the system itself.

(2) Printed log messages are generated by the system, which records all system operations.

(3) The election ballots themselves can be used to reconstruct the election either manually or by machine.

12. IS CAPABLE OF PRODUCING A SUMMARY SCREEN TO ALLOW VOTERS TO EXAMINE THEIR CHOICES BEFORE THE BALLOT IS FINALLY CAST.

iVotronic

The iVotronic Voting System includes a summary screen at the end of each ballot. This screen displays each contest and candidate on the ballot as well as whom the voter selected in each contest. The voter is able to go back to any contest and change their mind and vote in any contest they may have forgot to vote on initially. Since the summary screen is part of the ballot, the voter must at least view this screen before casting their ballot.

Model 100/650

The ES&S paper ballot allows the voter to review the ballot as many times as the voter would like before they deposit the ballot into the ballot box. To ensure that the voter does not forget a contest, there are instructions on the ballot to vote both sides of the ballot when applicable.

Financial Division
P.O.Box 12887
Austin, Texas 78711-3697

Geoffrey S. Connor
Secretary of State

Office of the Secretary of State

Packing Slip

November 25, 2003

Election Systems & Software Inc
11208 John Galt Blvd
Omaha NE 68137

Batch Number: 4826363 **Batch Date:** 11-25-2003

Client ID: 11269827
Return Method: Mail

Document Number	Document Detail	Fee
48263630003	Voting System Examination Fee	$9,000.00
	Total Document Fees	**$9,000.00**

Payment Type	Payment Status	Payment Reference	Amount
Check	Received	97752	$3,000.00
Check	Received	97976	$6,000.00
		Total Payments Received	**$9,000.00**

Total Amount Charged to Client Account $0.00

Total Amount Credited to Client Account $0.00

Note: This is not a bill. Please do not send any payments until the monthly statement is received.
Any amount credited to Client Account may be refunded upon request.
Refunds (if applicable) will be processed upon Request.
Acknowledgement of Filing Document(s) (if present) is attached.

User ID: CSIMPKINS

Irene Diaz

From: Conway, Lisa [redacted]
Sent: Tuesday, December 02, 2003 11:08 AM
To: 'Irene Diaz'
Subject: RE: Need hotel info.

I'm so sorry, I completely forgot to give that to you! We have reserved a space at the Radisson Hotel on Town Lake. The address is 111 E. Cesar Chavez Street. This is where we had it the last time. We have the Travis Room reserved all day for Jan. 8th. Please let me know if you have any other questions.

Also, I am sending a hard copy of the letter I faxed to you last week regarding provisional voting. You should receive it tomorrow.

Thanks,
Lisa

-----Original Message-----
From: Irene Diaz [mailto:[redacted]
Sent: Tuesday, December 02, 2003 10:59 AM
To: 'LIsa Lehan'
Subject: Need hotel info.

Hi Lisa,

Hope you had a wonderful Thanksgiving!

I'm working on the examiners letters regarding the January 2004 examinations, but I'm in lacking the hotel information for ES&S. Can you please supply me with that information?

Thanks Lisa!

Irene Diaz
Elections
Legal Section

April 8, 2004

To: The State Election Director

Re: ES&S NASED Qualification Number

ES&S is pleased to announce that an official NASED number has been issued for the corporation's current election system release. The number will be posted on the NASED web site within one week.

Number issued: **NASED # = N-1-02-12-11-001 (1990)**

Software Systems included:
Unity Election Management Software v2.4.2

Hardware Systems included:
- iVotronic DRE voting system v8.0.0.0
- Model 100 Document Based OMR precinct count system v5.0.0.0

The software and hardware have been tested by an accredited ITA, both at the component level and as an integrated system as required by the FVSS 2002. In addition, the hardware components were tested successfully to all new environmental tests required under the FVSS 2002. The Model 650 Document Based OMR central count system v1.2.0.0 will be forthcoming and will be included under this NASED number.

Respectfully:

Sue L McKay
Certification Director

ELECTION
SYSTEMS & SOFTWARE

January 20, 2004

Ms. Irene Diaz
Texas Secretary of State's Office
208 E. 10th Street, 3rd Floor
Austin, TX 78701

Dear Ms. Diaz:

Please accept the enclosed materials as a follow up to the ES&S certification event that took place on January 8th, 2004. I have enclosed the technical change releases for the firmware from the development stage to the final product that was presented on January 8th. I have also enclosed a copy of the approved marking devices for the OMR products as well as the ballot specifications and specifications for the Optech products marking devices.

I hope this satisfies the request of the examiners. If you need any additional information or have any questions, please contact me at 1-800-247-8683, ext. 1400.

Sincerely,

Lisa Conway

Lisa Conway
Certification Associate

The State of Texas

Elections Division P.O.
Box 12060 Austin,
Texas 78711-2060
www.sos.state.tx.us

Phone: 512-463-5650
Fax: 512475-2811
TTY: 7- I -1
(800) 252-VOTE (8683)

Gwyn Shea
Secretary of State

VOTING SYSTEM CERTIFICATION - FORM 100 SCHEDULE A

	Component	Issue*	How Addressed
1	Firmware versions	Confusing version numbering scheme.	Please see attached version description.
2	Data Acquisition Manager	Should be changed so that only pct. files for the current election appear in the list of results to be uploaded.	This suggestion has been entered into the ES&S Team Track software for the appropriate person to evaluate. It will be phased in to a future version of Unity. Please see attached Team Track item.
3	Unity real time audit log	Suggested an on line viewer that would include an even more detailed information.	Please see comment to number two above.
4	iVotronic	Messages for the early cast feature are confusing.	This suggestion has been entered into the ES&S Team Track software for the appropriate person to evaluate. It will be phased in to a future version of the iVotronic. Please see attached Team Track item.
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*From the last time this component was examined

Use additional sheets as necessary

ELECTION
SYSTEMS & SOFTWARE

November 25, 2003

Ms. Irene Diaz
Elections Division
P.O. Box 12060
Austin, TX 78711-2060

Dear Ms. Diaz,

This letter is in response to Ms. McGeehan's letter regarding provisional voting on direct record electronic voting systems. Election Systems & Software's iVotronic DRE does support provisional ballots. The current certified version of the iVotronic in Texas is 7.4.5.0 which does support provisional voting. In order to activate a provisional ballot, the poll worker selects the coded ballot option on the first page of the ballot. That ballot will be assigned a code that will allow the election staff to verify if the ballot is eligible after the polls have closed.

In January 2004, ES&S is scheduled for a certification exam. We plan to bring the iVotronic to upgrade the current version to 8.0. This version also supports the provisional ballot requirement. We will be able to demonstrate the provisional ballot during the certification event.

I have enclosed pages from the manuals that also explain how provisional voting functions on the ES&S iVotronic DRE. Please refer to the section headings Coding a Ballot and Managing Coded Ballots.

I hope this information meets all of the provisional ballot requirements for the State of Texas. If you need any further information or have any questions or comments, please call me at 1-800-247-8683, ext. 1400.

Sincerely,

Lisa Conway
Certification Associate

The State of Texas

Elections Division
P.O. Box 12060
Austin, Texas 78711-2060
www.sos.state.tx.us

Phone: 512-463-5650
Fax: 512-475-2811
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(800) 252-VOTE (8683)

Gwyn Shea
Secretary of State

January 11, 2002

Mr. Steve Bolton
Vice-President, Product Management
Election Systems and Software
11208 John Galt Blvd.
Omaha, Nebraska 68137

Dear Mr. Bolton:

Please find enclosed the results for the October 23, 2001 examinations of Election Systems and Software voting systems listed below:

Optical Ballot Tabulating System, Model 650, version 1.1.3.1
Modifications to iVotronic DRE system, version 6.1.4.3
Unity software, version 1.1 (re-examination)
Modifications to Optical Scan Voting Systems, Models 100, version 4.7.2 and 150/550, version 1.4.1.

If you have any questions or concerns, please feel free to contact Paul Miles, Elizabeth Hanshaw Winn, or Leticia Calvo toll-free at 1-800-252-VOTE(8683).

Sincerely,

Melinda Nickless

Melinda Nickless
Assistant Director of Elections

Enclosures

MN:LC

Leticia Calvo

From: Bolton, Steve [redacted]
Sent: Tuesday, March 19, 2002 10:24 AM
To: [redacted]
Cc: [redacted] Hughes, David; McKay, Sue; Prescott, Karen; Blakely, Don; Lehan, Lisa
Subject: Certification

Leticia,

I wish to discuss the systems for the upcoming RE-Certification. First, I want to apologize for not getting the correct message across on the upgrades to existing certified systems. I was out of town and asked David to communicate to you the reason for the upgrades to the Model 100, iVotronic, Model 650, and Models 150/550. These system's firmware were undergoing FEC re-qualification at the time of the last examination in Texas and were anticipated to complete review and functionals at the current submitted level of firmware revision. While in final code review, some extra commenting of the code or multiple return correction of the code was requested by the FEC examiners. While this is very common, and we strive to exceed the requirements, sometimes one gets by us. Due to these requests, the added code comments require us to increment the version number, creating a new firmware level.

My request to your office should have read from David, that due to the nature of the changes, and that the functionality is not changed and we received final FEC qualification on these version numbers, ES&S is asking that these revised FEC qualified version numbers be submitted, and approved for use without the need for a meeting of the examiners. Change difference reports can easily be looked at to determine what was changed in the code at the request of the FEC examiners. You will notice in the following list, that the version numbers incremented are in the 3rd and 4th digits, which mean code commenting, or FEC code house keeping. Any functional changes warrant either a 1st or 2nd digit revision, depending on how large the change was.

Model 100: TX cert = V. 4.7.2
Model 100: FEC cert V. 4.7.6

iVotronic: TX cert = V. 6.2.0.1
iVotronic: FEC cert = V. 6.2.0.3

Model 150/550: TX cert = V. 1.4.1
Model 150/550: FEC cert = V. 1.4.2

Mode 650: TX cert = V. 1.1..5.1
Model 650 FEC cert = V. 1.1.6.0

To examine these upgrades by functional testing in a Texas examination would be futile, as they have no functional differences to the operation of the system that can be demonstrated. I did not intend to even bring these systems with us, but rather to simply keep Texas on the currently functionally tested FEC qualified versions.

Given that my intentions were to not bring these systems to Austin, the examination would focus on the Optech and punch card systems into the Unity Software and this could be accomplished in a single day, not the two reflected from adding the other four systems.

Please realize that I am not trying to get out of examination fees paid to your state, but rather the changes to the

four above listed systems are not demonstratable and are functionally identical to the versions certified in the last examination. I also do not see a need have the examiners stay the extra day when not needed, nor do I see a cost to examine these simple changes being at $6000.

Please review this information with your office and let me know how we can proceed. Thank you for your consideration.

Respectfully yours,

Steve Bolton
Vice President, Product Management
Election Systems & Software, Inc.
Omaha NE, 68137
402-593-0101 ext. 1118
[redacted]

Dear Mr. Hughes:
Thank you for your response. Due to the increased number of systems you will be bringing, we will need a full two days to conduct the examinations. In order to compensate the voting system examiners for these two full days, you will need to submit a fee of $15,000, which represents $3,000 per full review and introduction of the Unity to the Optech IIIPe Eagle OMR Precinct Counter, Optech IV C Precinct Count System, PCBT OMR Precinct Counter and $1,500 per modification of the remaining systems.
If you have any questions or concerns regarding this matter, please contact Paul Miles (<mailto[redacted]> [redacted] or Leticia Calvo (<mailto[redacted].
-----Original Message-----
From: Hughes, David [mailto:[redacted]
Sent: Monday, March 11, 2002 11:08 AM
To: [redacted]
Cc: McKay, Sue; Shoemaker, Roberta
Subject: Intention to Submit

Ms. Leticia Calvo
Office of the Secretary of State
Elections Division
Austin, Texas
Dear Ms. Calvo:
Please accept this e/mail as confirmation that ES&S intends to file an application to re-certify products that have been previously certified for use in the State of Texas. In all cases the products submitted will be upgrades from current versions. The systems we intend to submit are listed

below and where applicable the revision levels are listed with the product.
1. Model 100 OMR Precinct Counter Ver. 4.7.6
2. Models 150/550 OMR Central Counters Ver. 1.4.2
3. iVotronic DRE Precinct Counter Ver. 6.2.0.3
4. Model 650 OMR Central Count System Ver. 1.1.6.0
5. Optech IIIPe Eagle OMR Precinct Counter
6. Optech IV C Precinct Count System
7. PCBT OMR Precinct Counter.

Application and fees will be forwarded to your offices by April 5, 2002
Respectfully:
-S-
David M. Hughes
ES&S Certification Department
David M. Hughes
ES&S
11208 John Galt Blvd.
Omaha, NE 68107
Tel: 1.402.593.0101
Fax: 1.402.593.8107
E/mail: [redacted]
Steve Bolton
Vice President, Product Management
Election Systems & Software, Inc.
Omaha NE, 68137
402-593-0101 ext. 1118
[redacted]

ELECTION
SYSTEMS & SOFTWARE

March 21, 2002

Ms. Leticia Calvo
Secretary of State's Office - Elections Division
208 East 10th Street
Thomas J. Rusk State Building, 3rd Floor
Austin, TX 78701

Dear Leticia:

Per Steve Bolton's e-mail to you on March 19th, please find the Change Releases, Source Code Reviews, and Wyle ITA letters for the products listed below.

iVotronic from v. 6.2.0.1 to 6.2.0.3
Model 100 from v. 4.7.2 to 4.7.6
Model 150/550 (115/315) from v. 1.4.1. to 1.4.2
Model 650 from 1.1.3.1 to 1.1.6.0

We look forward to hearing from the State regarding a firm date and time for the system examination. If there is any additional information I can provide, please do not hesitate to contact Steve Bolton or myself at our Omaha office, 800-247-8683. Thank you in advance for your consideration.

Sincerely,

Sue L. McKay
Director of Certification

Leticia Calvo

From: Bolton, Steve [redacted]
Sent: Monday, May 06, 2002 9:17 AM
To: 'Leticia Calvo'
Subject: RE: M-650 audit log upgrade

These are in addition to the changes previously sent. In proceeding with continued testing and certification for the state of Florida, requests for less technical and more easy to read audit log messages was requested.

Steve Bolton
Vice President, Product Management
Election Systems & Software, Inc.
Omaha NE, 68137
402-593-0101 ext. 1118
[redacted]

-----Original Message-----
From: Leticia Calvo [mailto:[redacted]
Sent: Monday, May 06, 2002 9:10 AM
To: 'Bolton, Steve'
Subject: RE: M-650 audit log upgrade

Steve, are these the same changes that you have already submitted to us for the upcoming examination, or are these in addition to what you have already sent us?

-----Original Message-----
From: Bolton, Steve [mailto[redacted]
Sent: Tuesday, April 30, 2002 5:47 PM
To: Leticia Calvo (E-mail)
Cc: McKay, Sue; Shoemaker, Roberta
Subject: M-650 audit log upgrade

Leticia, in reviewing and using the M-650, we found several real time audit log entries that needed to be explained or re-worded to make for improved readability. We went forward with upgrading the version of software on the M-650 to reflect those needs. It was sent to Wyle for review and Jim Dearman will be coming to Omaha to perform minor functionals on it to verify the changes. Since the changes just reflected audit log entries and corrected one anomaly with importing data via the zip drive, it will be a small test. I am submitting to you the change release and subsequent source code review for you to pass on for determination of your requirements to test it for upgrade. Attached are those two documents. Please let me know if this small change warrants a review or not. Thanks for your help with this.

Steve Bolton
Vice President, Product Management
Election Systems & Software, Inc.
Omaha NE, 68137
402-593-0101 ext. 1118
[redacted]

Elizabeth Hanshaw Winn

From: Bolton, Steve [redacted]

Sent: Friday, November 01, 2002 12:01 PM

To: Elizabeth Hanshaw Winn (E-mail); Paul Craft (E-mail)

Cc: Ann McGeehan (E-mail); Nick Osborn (E-mail); McKay, Sue

Two examiners recommended certification of Unity 2.2 & all systems, with conditions, and three recommended not to certify, using basically the same conditions as the other two recommending certification as there reason for not certifying. Below is a breakout of the examiners reports and concerns for your information.....Following, I explain why I see no reason not to certfy based on the comments from the examiners.

James Sneeringer, PHD, assigned by Attorney General office
Certification NO
Reason: 1. ERM real time audit log has a bug that printed incorrect time stamp.
2. NO real time audit log on iVotronics at collecting results to PEB.
Comments: regarding #2 "I do not perceive this a a great risk, but it does not comply with the SOS admin regulations" (real time audit log)

Barney Knight, Atty, appointed by SOS office
Certification YES
Concerns: 1.Real time audit log on iVotronic
2. ERM audit log confusing
Recommendations: Require M-550 ballot log to be active at all times, require zero tape printing on iVotronic at poll opening, & making sure to clear PEB vote totals prior to delivery to polling location

Tom Watson, Atty
Certification NO
all but M-650. M-650 YES
Reasons: 1. ERM audit log confusing & incorrect time stamp
2. M-550s audit log was not enabled
3. M-100 has not audit log
4. PEB had votes on it from earlier test

Glenn Glover, Analyst, appointed by Attorney General
Certification NO
M-150 & 650 YES
Reasons: 1. ERM audit log confusing & wrong time stamp
2. PEB had votes on it from earlier test
3. M-550 audit log was not enabled
4. M-100 has not audit log
5. No iVotronic audit log for PEB
Recommendations: Eliminated the M-550 audit log option and make it permanant so it can't be disabled
Comments: "encourage ES&S to return with iVotronic"

Nick Osborn, Systems Analyst, works for SOS IT division
Certification: YES on all systems

Recommendation: Check to be sure M-550 ballot log option is always turned on, work on making ERM audit log more user freindly.

EXPLANATIONS

1. IVotronic audit log requirement: Administrative rule presented to remove this requirement
2. The ERM "confusion" resulted from having five systems that will never be deployed at one time working on the same system for certification purposes. Typically, there would be only two groups not five going into ERM. This makes the audit log somewhat cluttered with all the changing of groups to load different systems.

3. The incorrect timestamp on the ERM audit log is caused by the fact that the real time print out is a copy of the electronic file printed in real time. The electronic copy has a page heading in it that is being passed to the real time printer. It picks up the time stamp in that header of when the last electronic report was created. We shut the time stamp off on the header and it went away and this was demonstrated at the cert event. However, the page heading remains and should be removed from the realtime log. NOTE. The actual event logs printed the correct time stamp on each event. Also, the audit log printer defaults to 10 CPI, and the audit report is printed to 17CPI. ES&S staff was not aware of this particular and could have set the printer to 17CPI eliminating any page wrapping of the report on this printer.

4. ERM audit log confusion.....continued...due to the page header being printed, and the fact that it is on a dot matrix printer, and the examiners kept rolling the paper up to read the log, this caused the page header to be printed out not at the top of the page, but anywhere on the page. If we just eliminate this header from printing, this all goes away.

5. M-550 ballot log was not present. We changed the setting and reburned the M-550 EPROM and demonstrated that the log was correctly printing as the ballots were being scanned.

6. PEB had votes stored on it from previous test. I demonstrated the automated logic and accuracy test, then cleared and tested the terminals and re-opened the polls on each terminal. The iVotronic system does notify the user if PEB votes are present, but I bypassed this during the exam. My mistake, but I went back and cleared the PEB votes out, re-voted and showed that the results were indeed correct.

7. PEB had votes stored on it.....I explained that we had to allow this due to the fact that during Early Voting, the jurisdictions were requiring us to close the polls everynight, effectively making us allow the opening of poll each day with votes stored on the PEB. It is documented in the user manuals.

Based on the fact that Unity 1.1 and all the tabulation devices are previously certified in the state of Texas, these upgrades provide much needed improvements, and all systems have an FEC qualification on them, I urge the state to see clear to recommend upgrading these particular system versions for certification. Enhancements will be made to improve upon the systems where comments were made by the examiners.

Steve Bolton
Vice President, Product Management
Election Systems & Software, Inc.
Omaha NE, 68137
402-593-0101 ext. 1118
[redacted]

Ann McGeehan

From: Bolton, Steve [redacted]
Sent: Tuesday, December 03, 2002 9:54 AM
To: Elizabeth Hanshaw Winn (E-mail)
Cc: Ann McGeehan (E-mail); Nick Osborn (E-mail); Paul Miles (E-mail); [redacted]
Subject: FW: ERM Log

This is the real audit log from Broward County using iVotronic and M-650. I wanted you to see that the audit in actual use is not confusing, but rather easy to read. The document files explain any terminology of the report if you need any explanation. The zip file contains the audit log. It can be read using wordpad or word even though it has a .lst file extension.

Reason for sending this is 2 examiners recommended certification and 3 did not. However, all examiners listed/reported that the reporting audit log was confusing. Mostly the reason for this is that we had programmed the system to accept data from 6 diferect tabulation systems. In a real environment, generally only two systems would be used, i.e. iVotronic and an absentee scanner like the M-650 or the M-550/M-150. The zip file contains the actual audit log file from the Broward County primary election using the iVotronics (5500 units, ~600 pcts) and M-650s (4 units) used for absentee ballots. The log file starts out with testing as you will see the dates on the events lists on the left. Election day was 9/10 which is reflected in the log starting around page 56. You will see that the log generally follows this precedure: Testing prior to election, resetting of precents to zero, election day accumulation of PEBs, later accumulation of M-650 (ETPin the log) absentee ballots, re processing of the PEB data (this is a standard prcedure to verify all pack are accumulated), precinct reporting and more reporting, then processing of the actual audit data from each terminal following the election, then more reporting.

I wanted you to see the audit data file from an actual election to show you that when used in a typical election environment, it is very auditable. This is from Unity 2.2 which was certified in the state of Florida earlier in the year and every account including Miami Dade in Florida used this version, which is the same version we took to Texas in Sept to show you.

If you have any questions regarding this, feel free to call me @ 800-247-8683, ext 1118. I am in and out of meetings all week so please leave a message and number and I can get back to you with any information needed.

Thank you.

Steve Bolton
Vice President, Product Management
Election Systems & Software, Inc.
Omaha NE, 68137
402-593-0101 ext. 1118
[redacted]

<<SystemErrCode.doc>> <<SystemLog.doc>> <<ermlog.zip>>

Ann McGeehan

From: Bolton, Steve [redacted]
Sent: Tuesday, December 03, 2002 4:52 PM
To: Ann McGeehan (E-mail)
Subject: Certs

Hello Ann,

Elizabeth got out of the office today without getting back in touch with me. I believe she said she will be out for a few days. I would like to get to a conclusion on the cert event from Sept yet. At issue yet to be resolved from my conversations with Elizabeth was for someone to view the M-550 audit log start up sheet to verify that the printer will print a configuration page and notify the user that the ballot log option is enabled. We can do this through any of our local customers. I will scan the configuration page and send it to you PDF so you know where it is and can verify for yourself.

The other issue is the audit log of ERM. As you might have seen, I forwarded this on to the examiners for their review and received comment back from Nick already, forwarded it on to you also. As you can read in Nicks email, confusion is not on the part of the audit log, but just the overall certification due to the number of systems we were trying to upgrade.

I am holding shipment of Bexar Counties iVotronic units and we need to ship the units on Thursday of this week in order to meet the contract delivery date. Cliff Borosfsky wants to be sure the latest certified version of firmware is on them. I need to have version 7.4.5.0 (wyle certified) installed on them as it corrects a defect in the last version that caused a lockup on the iVotronic. 7.4.5.0 corrects this.

I am willing to come back down to demonstrate the iVotronic and ERM in January so that it is only the one system and the examiners will not be confused by the other systems if need be, but I would like to at least have a certification on the system for now so that I can deliver the units to Bexar for installation inspection. Please let me know ASAP what I can do to resolve this issue. I really appreciate your response to my request.

Regards,

Steve.

Steve Bolton
Vice President, Product Management
Election Systems & Software, Inc.
Omaha NE, 68137
402-593-0101 ext. 1118
[redacted]

Ann McGeehan

From: Bolton, Steve [redacted]
Sent: Tuesday, December 03, 2002 9:54 AM
To: Elizabeth Hanshaw Winn (E-mail)
Cc: Ann McGeehan (E-mail); Nick Osborn (E-mail); Paul Miles (E-mail); [redacted]
Subject: FW: ERM Log

This is the real audit log from Broward County using iVotronic and M-650. I wanted you to see that the audit in actual use is not confusing, but rather easy to read. The document files explain any terminology of the report if you need any explanation. The zip file contains the audit log. It can be read using wordpad or word even though it has a .lst file extension.

Reason for sending this is 2 examiners recommended certification and 3 did not. However, all examiners listed/reported that the reporting audit log was confusing. Mostly the reason for this is that we had programmed the system to accept data from 6 diferect tabulation systems. In a real environment, generally only two systems would be used, i.e. iVotronic and an absentee scanner like the M-650 or the M-550/M-150. The zip file contains the actual audit log file from the Broward County primary election using the iVotronics (5500 units, ~600 pcts) and M-650s (4 units) used for absentee ballots. The log file starts out with testing as you will see the dates on the events lists on the left. Election day was 9/10 which is reflected in the log starting around page 56. You will see that the log generally follows this precedure: Testing prior to election, resetting of precents to zero, election day accumulation of PEBs, later accumulation of M-650 (ETPin the log) absentee ballots, re processing of the PEB data (this is a standard prcedure to verify all pack are accumulated), precinct reporting and more reporting, then processing of the actual audit data from each terminal following the election, then more reporting.

I wanted you to see the audit data file from an actual election to show you that when used in a typical election environment, it is very auditable. This is from Unity 2.2 which was certified in the state of Florida earlier in the year and every account including Miami Dade in Florida used this version, which is the same version we took to Texas in Sept to show you.

If you have any questions regarding this, feel free to call me @ 800-247-8683, ext 1118. I am in and out of meetings all week so please leave a message and number and I can get back to you with any information needed.

Thank you.

Steve Bolton
Vice President, Product Management
Election Systems & Software, Inc.
Omaha NE, 68137
402-593-0101 ext. 1118
[redacted]

<<SystemErrCode.doc>> <<SystemLog.doc>> <<ermlog.zip>>

Ann McGeehan

From: Bolton, Steve [redacted]

Sent: Wednesday, December 04, 2002 9:55 AM

To: Ann McGeehan (E-mail); Elizabeth Hanshaw Winn (E-mail)

Cc: Barney Knight (E-mail); Glenn Glover (E-mail); Jim Sneeringer (E-mail); Nick Osborn (E-mail); Paul Miles (E-mail); Pete Wassdorf (E-mail); Tom Watson (E-mail)

Subject: M-550 log

This pdf if from the configuration page that is generated each time a Model 550 scanner is powered up. I pass this along to show you how the user or coder can easily verify that the ballot audit log is always enabled.

Ann, if you need to have an examiner see this personally, please let me know. Since you have not issued certification on this version as yet, we have not coded any election using this version, so we would need to send a chip to you for the examiner to use.

<<TX 550 Log.pdf>>

Steve Bolton
Vice President, Product Management
Election Systems & Software, Inc.
Omaha NE, 68137
402-593-0101 ext. 1118
[redacted]

The State of Texas

Elections Division
P.O. Box 12060
Austin, Texas 78711-2060
www.sos.state.tx.us

Gwyn Shea
Secretary of State

Phone: 512-463-5650
Fax: 512-475-2811
TTY: 7-1-1
(800) 252-VOTE (8683)

VOTING SYSTEM CERTIFICATION – FORM 101

The following questions must be answered with regard to each voting system being certified. Answers should be set forth on a separate sheet of paper and attached to this form. Explain how the voting system:

1. **Preserves the secrecy of the ballot;**
2. **Is suitable for the purpose for which it is intended;**
3. **Operates safely, efficiently, and accurately;**
4. **Is safe from fraudulent or unauthorized manipulation;**
5. **Permits voting on all offices and measures to be voted on at an election;**
6. **Prevents counting votes on offices and measures on which the voter is not entitled to vote;**
7. **Prevents counting votes by the same voter for more than one candidate for the same office, and prevents counting votes for more than the number of candidates for which the voter is entitled to vote;**
8. **Prevents counting a vote on the same office or measure more than once;**
9. **Permits write-in voting;**
10. **Is capable of permitting straight-party voting;**
11. **Is capable of providing records from which the operation of the voting system may be audited; and**
12. **Is capable of producing a summary screen to allow voters to examine their choices before the ballot is finally cast.**

VOTING SYSTEM CERTIFICATION – FORM 101

1. PRESERVES THE SECRECY OF THE BALLOT:

iVotronic

The DRE Touch Screen Voting Systems provide voter secrecy throughout the voting process. First, each Voting Booth is equipped with privacy side panels and a top curtain. Second, the LCD ballot display screen design prevents on-lookers from viewing a voter's ballot while they are in the act of voting. And finally, the Voter Terminals randomly store each voter's vote-choice set (i.e., ballot image) with other ballot images when they cast their ballot so there is no way to determine/retrieve a specific voter's ballot. One exception to the ballot image randomization occurs when the coded ballot option is activated for a challenged voter.

Model 100/650

These ES&S systems function as any paper ballot system at the polling places. Voters mark their ballots in a privacy booth, return them to the ballot box in a secrecy sleeve and personally deposit them in a sealed box. These functions are under the direct control of the voter and provide no opportunity for anyone to discover how the voter has marked his or her ballot.

2. IS SUITABLE FOR THE PURPOSE FOR WHICH IT IS INTENDED.

All Voting Systems

The ES&S Voting Systems have been ITA certified by Wyle Laboratories. Their proprietary design and operating system are specifically for election use.

3. OPERATES SAFELY, EFFICIENTLY, AND ACCURATELY:

All Voting Systems

All ES&S systems are self-contained tabulators with no exposed moving parts. These systems comply with UL Standard 1950: Safety of Information Technology Equipment, Including Electrical Business Equipment. All systems meet or exceed the FEC Qualification and Acceptance Test Design Criteria. While at Wyle Laboratories, these systems recorded in excess of 297,589 votes without error.

4. IS SAFE FROM FRADULANT OR UNATHORIZED MANIPULATION:

All Voting Systems

All ES&S Systems prevent fraudulent and unauthorized use in several ways. One, electronic and physical seals prevent fraudulent manipulation of the election definition after completion of the Logic and Accuracy Test. Two, all units allow printing of an opening tape listing all of the candidates with zero totals. Certification signature lines are printed at the end of the report and must be attested to by the poll officials. Three, Public Counters are visible on every tabulator unit so that the number of ballots that have been cast on the unit can be accessed at all times.

5. PERMITS VOTING ON ALL OFFICES AND MEASURES TO BE VOTED ON AT AN ELECTION:

iVotronic

The PEB contains precinct specific programming that includes all ballot styles available for voting in that precinct. Poll officials select the appropriate ballot for the voter and the respective candidates and issues are displayed on the Voter Terminal. The iVotronic terminals allow for additional memory with a standard removable compact flash. The additional memory can range from 16 MB-192 MB which enables it to support an election of any size.

Model 100/650

The ballot format used by ES&S optical ballot scanning equipment allows for up to 153 voting positions on each side of the 8 1/2 X 14,17,and 19-inch documents. Multiple ballots may be type coded to allow voting response positions in excess of 1000. In addition to reading voter responses, the reader scans the identification "codes" of each ballot or ballot identification header. These codes identify to the System the ballot type (i.e., Republican, Democrat, Non-partisan, etc.) and precinct of origin. These codes enable the System to identify multiple ballot styles within a precinct, allowing for an almost infinite number of candidate responses per precinct.

6. PREVENTS COUNTING VOTES ON OFFICES AND MEASURES ON WHICH THE VOTER IS NOT ENTITLED TO VOTE:

All Voting Systems

If a precinct has multiple ballot styles created by split districts within that precinct, a ballot style is assigned to each split. Poll officials select the appropriate ballot style for the voter. Then, only those offices and questions associated with the ballot style that voter has the right to vote are available.

7. PREVENTS COUNTING VOTES BY THE SAME VOTER FOR MORE THAN ONE CANDIDATE FOR THE SAME OFFICE, AND PREVENTS COUNTING VOTES FOR MORE THAN THE NUMBER OF CANDIDATES FOR WHICH THE VOTER IS ENTITLED TO VOTE:

All Voting Systems

In the election definition, an individual candidate is assigned to a contest one time. Each candidate only appears on the ballot once for each office. Thus, the voter may only select a candidate once before casting their ballot. Once the voter has cast their ballot, the ballot is tabulated and can not be altered. In addition, the systems are specifically designed to prevent an over-vote from being counted.

8. PREVENTS COUNTING A VOTE ON THE SAME OFFICE OR MEASURE MORE THAN ONCE:

All Voting Systems

The election definition contains each race and measure one time. Each contest is then assigned to the ballot style(s) to which it belongs. Each ballot style includes its associated contests one time. Thus, the voter may only vote a contest once before casting their ballot. Again, once the voter cast their ballot, the ballot is tabulated and can not be altered.

9. PERMITS WRITE-IN VOTING:

iVotronic

The DRE systems provide a very simple method for accommodating write-in votes. An active write-in vote location is provided in each office where write-in voting is allowed. To vote a write-in, the voter simply selects the write-in location and an easy to-use write-in screen template appears allowing the voter to spell out the write-in name by touch-typing the letters of the name. When the voter has spelled out the name, he or she accepts the name and the terminal immediately returns to the ballot screen and displays the write-in name in the list of candidates where it belongs. The write-in name may be changed or deleted anytime prior to the voter casting their ballot. Finally, the write-in names are printed on the poll location results tape in the proper office location for which they belong.

Model 100/650

The ES&S paper ballot can be printed with a write-in line for each applicable race. The voter is instructed to write-in the name on the line provided. With the write-in response area provided for on the ballot, the integrity of the ballot is preserved.

10. IS CAPABLE OF PERMITTING STRAIGHT PARTY VOTING:

iVotronic

The iVotronic accommodates Straight Party Voting. The voter may select a Straight Party candidate by pressing the box next to the appropriate party. Once the voter selects a Straight Party choice, all candidates of that party are selected (i.e., highlighted). This choice does not affect any non-partisan candidates or questions. Voters must still vote the non-partisan offices independently.

Model 100/650

The ES&S paper ballot can be printed and programmed with a straight party section to accomplish this requirement. The voter chooses straight party by marking the response area next to the appropriate party.

11. IS CAPABLE OF PROVIDING RECORDS FROM WHICH THE OPERATION OF THE VOTING SYSTEM MAY BE AUDITED:

iVotronic

The DRE systems include a complete audit trail. Voter Terminals store entire ballot images as they were cast, including write-ins. These images are randomized according to a millisecond timer to preserve voter privacy. In addition to the actual ballot images, each Voter Terminals records a chronological event log. This event log includes every event or error message that occurred on the Voter Terminal including "clearing and testing" the unit memory for the current election, opening polls, ballots cast, closing polls, printing results, and collecting audit data. Each event record consists of the event code, the time the event took place, and the serial number of the PEB used to activate the Terminal for that event.

After each election, the binary audit data from each Voter Terminals is uploaded to a PC. The original binary format can then be converted to a text format for review. Once in the text format, each ballot image may be hand-counted if necessary. Retrieving challenged voter ballots is an example of a situation where the audit data may be used.

Model 100/650

The ES&S optical systems provide 3 separate audit trails.

(1) Hard copy reports of election results generated by the system itself.

(2) Printed log messages are generated by the system, which records all system operations.

(3) The election ballots themselves can be used to reconstruct the election either manually or by machine.

12. IS CAPABLE OF PRODUCING A SUMMARY SCREEN TO ALLOW VOTERS TO EXAMINE THEIR CHOICES BEFORE THE BALLOT IS FINALLY CAST.

iVotronic

The iVotronic Voting System includes a summary screen at the end of each ballot. This screen displays each contest and candidate on the ballot as well as whom the voter selected in each contest. The voter is able to go back to any contest and change their mind and vote in any contest they may have forgot to vote on initially. Since the summary screen is part of the ballot, the voter must at least view this screen before casting their ballot.

Model 100/650

The ES&S paper ballot allows the voter to review the ballot as many times as the voter would like before they deposit the ballot into the ballot box. To ensure that the voter does not forget a contest, there are instructions on the ballot to vote both sides of the ballot when applicable.

Financial Division
P.O.Box 12887
Austin, Texas 78711-3697

Geoffrey S. Connor
Secretary of State

Office of the Secretary of State

Packing Slip

November 25, 2003

Election Systems & Software Inc
11208 John Galt Blvd
Omaha NE 68137

Batch Number: 4826363
Batch Date: 11-25-2003
Client ID: 11269827
Return Method: Mail

Document Number	Document Detail	Fee
48263630003	Voting System Examination Fee	$9,000.00
	Total Document Fees	**$9,000.00**

Payment Type	Payment Status	Payment Reference	Amount
Check	Received	97752	$3,000.00
Check	Received	97976	$6,000.00
		Total Payments Received	**$9,000.00**

Total Amount Charged to Client Account $0.00

Total Amount Credited to Client Account $0.00

Note: This is not a bill. Please do not send any payments until the monthly statement is received.
Any amount credited to Client Account may be refunded upon request.
Refunds (if applicable) will be processed upon Request.
Acknowledgement of Filing Document(s) (if present) is attached.

User ID: CSIMPKINS

RE: Need hotel info.

Irene Diaz

From: Conway, Lisa [redacted]
Sent: Tuesday, December 02, 2003 11:08 AM
To: 'Irene Diaz'
Subject: RE: Need hotel info.

I'm so sorry, I completely forgot to give that to you! We have reserved a space at the Radisson Hotel on Town Lake. The address is 111 E. Cesar Chavez Street. This is where we had it the last time. We have the Travis Room reserved all day for Jan. 8th. Please let me know if you have any other questions.

Also, I am sending a hard copy of the letter I faxed to you last week regarding provisional voting. You should receive it tomorrow.

Thanks,
Lisa

-----Original Message-----
From: Irene Diaz [mailto:[redacted]
Sent: Tuesday, December 02, 2003 10:59 AM
To: 'LIsa Lehan'
Subject: Need hotel info.

Hi Lisa,

Hope you had a wonderful Thanksgiving!

I'm working on the examiners letters regarding the January 2004 examinations, but I'm in lacking the hotel information for ES&S. Can you please supply me with that information?

Thanks Lisa!

Irene Diaz
Elections
Legal Section

April 8, 2004

To: The State Election Director

Re: ES&S NASED Qualification Number

ES&S is pleased to announce that an official NASED number has been issued for the corporation's current election system release. The number will be posted on the NASED web site within one week.

Number issued: **NASED # = N-1-02-12-11-001 (1990)**

Software Systems included:
Unity Election Management Software v2.4.2

Hardware Systems included:
- iVotronic DRE voting system v8.0.0.0
- Model 100 Document Based OMR precinct count system v5.0.0.0

The software and hardware have been tested by an accredited ITA, both at the component level and as an integrated system as required by the FVSS 2002. In addition, the hardware components were tested successfully to all new environmental tests required under the FVSS 2002. The Model 650 Document Based OMR central count system v1.2.0.0 will be forthcoming and will be included under this NASED number.

Respectfully:

Sue L McKay
Certification Director

ELECTION
SYSTEMS & SOFTWARE

January 20, 2004

Ms. Irene Diaz
Texas Secretary of State's Office
208 E. 10th Street, 3rd Floor
Austin, TX 78701

Dear Ms. Diaz:

Please accept the enclosed materials as a follow up to the ES&S certification event that took place on January 8th, 2004. I have enclosed the technical change releases for the firmware from the development stage to the final product that was presented on January 8th. I have also enclosed a copy of the approved marking devices for the OMR products as well as the ballot specifications and specifications for the Optech products marking devices.

I hope this satisfies the request of the examiners. If you need any additional information or have any questions, please contact me at 1-800-247-8683, ext. 1400.

Sincerely,

Lisa Conway

Lisa Conway
Certification Associate

The State of Texas

Elections Division P.O.
Box 12060 Austin,
Texas 78711-2060
www.sos.state.tx.us

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Fax: 512475-2811
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(800) 252-VOTE (8683)

Gwyn Shea
Secretary of State

VOTING SYSTEM CERTIFICATION - FORM 100 SCHEDULE A

	Component	Issue*	How Addressed
1	Firmware versions	Confusing version numbering scheme.	Please see attached version description.
2	Data Acquisition Manager	Should be changed so that only pct. files for the current election appear in the list of results to be uploaded.	This suggestion has been entered into the ES&S Team Track software for the appropriate person to evaluate. It will be phased in to a future version of Unity. Please see attached Team Track item.
3	Unity real time audit log	Suggested an on line viewer that would include an even more detailed information.	Please see comment to number two above.
4	iVotronic	Messages for the early cast feature are confusing.	This suggestion has been entered into the ES&S Team Track software for the appropriate person to evaluate. It will be phased in to a future version of the iVotronic. Please see attached Team Track item.
5			
6			
7			
8			
9			
10			

*From the last time this component was examined

Use additional sheets as necessary

ELECTION
SYSTEMS & SOFTWARE

November 25, 2003

Ms. Irene Diaz
Elections Division
P.O. Box 12060
Austin, TX 78711-2060

Dear Ms. Diaz,

This letter is in response to Ms. McGeehan's letter regarding provisional voting on direct record electronic voting systems. Election Systems & Software's iVotronic DRE does support provisional ballots. The current certified version of the iVotronic in Texas is 7.4.5.0 which does support provisional voting. In order to activate a provisional ballot, the poll worker selects the coded ballot option on the first page of the ballot. That ballot will be assigned a code that will allow the election staff to verify if the ballot is eligible after the polls have closed.

In January 2004, ES&S is scheduled for a certification exam. We plan to bring the iVotronic to upgrade the current version to 8.0. This version also supports the provisional ballot requirement. We will be able to demonstrate the provisional ballot during the certification event.

I have enclosed pages from the manuals that also explain how provisional voting functions on the ES&S iVotronic DRE. Please refer to the section headings Coding a Ballot and Managing Coded Ballots.

I hope this information meets all of the provisional ballot requirements for the State of Texas. If you need any further information or have any questions or comments, please call me at 1-800-247-8683, ext. 1400.

Sincerely,

Lisa Conway
Certification Associate

January 6, 2003

Ms. Ann McGeehan
Elections Division Director
P.O. Box 12060
Austin, TX 78711-2060

Dear Ms. McGeehan:

I am, respectfully, requesting that the State of Texas reconsider the decision to deny certification for the Model 100 Firmware Version 4.8.0.0. This request is based on the following facts and information.

The Model 100 was developed in the mid nineties and was the first ES&S product to be designed from inception to comply with all relevant FEC requirements. In the original system requirements documents ES&S identified a risk with real time audit logs on precinct count devices. The risk was that a real time audit log printout could be, inadvertently, removed during the voting process. This would result in an unrecoverable loss of all audit data to that point in the process. For this reason and to provide a more robust audit capability the Model 100 was designed to record all necessary audit data to memory and to have the unit print this audit data automatically when the poll were closed. This approach has been approved by the both the ITA and in state level certifications.

In addition, I would like to comment on the five points that the Model 100 was judged to be out of compliance on in the certification document we received. The Model 100 has been certified and re-certified up to Version 4.7.6 over the past six years and was always found to be in compliance with these particular requirements. None of the changes between the certified Version 4.7.6 and 4.8.0.0 (release attached) had any impact on the processes or functionality that support those requirements. In view of this ES&S is at a loss to understand why we no longer comply with these requirements.

The Model 100 was first certified for use in Texas in December of 1996 and has been re-certified at improved firmware version levels periodically since that time. From the initial certification and all during the intervening six years the unit has always utilized a permanent, internally recorded audit log that was automatically printed when the polls were closed. This was found acceptable during all previous examinations with the only notation being that it could not be used as a central scanner absent a real time log.

With nearly 14,000 units in use worldwide the Model 100 has earned an enviable record in the election arena. In fact, the second largest jurisdiction in the State of Texas has used the Model 100 successfully for the last five years. The Model 100 is a current and go forward product and ES&S intends to maintain and improve it well in to the future.

With appreciation for the Divisions consideration of this matter, I am,

Respectfully:

Sue L. McKay
Certification Director

Irene Diaz

From: McKay, Sue [redacted]
Sent: Wednesday, October 22, 2003 9:43 AM
To: [redacted]
Subject: Letter from Wyle

Hello Irene,

Would you please submit this letter towards our certification in May of 2003. If you need additional information or have questions, please let me know. Thanks.

<<M100 M650_iVo Status Letter.doc>>

Sue L. McKay
Director of Certification
Election Systems & Software
(402) 537-1125
[redacted]

The State of Texas

Elections Division
P.O. Box 12060
Austin, Texas 78711-2060
www.sos.state.tx.us

Phone: 512-463-5650
Fax: 512-475-2811
TTY: 7-1-1
(800) 252-VOTE (8683)

Gwyn Shea
Secretary of State

May 7, 2003

Ms. Sue McKay
Election Systems and Software
11208 John Galt Blvd.
Omaha, Nebraska 68137

Dear Ms. McKay:

This letter is to confirm receipt of your application and fee for the May 2003 voting system examinations. We have scheduled your examination for Wednesday, May 28, 2003 from 9:30 a.m. – 4:30 p.m. Due to the number of voting systems you will be submitting for certification, we have agreed to hold your exam off-site at the Radisson Town Lake at 111 E. Cesar Chavez St., Austin, Texas.

If you have any questions, please contact Irene Diaz toll-free at 1-800-252-VOTE(8683).

Sincerely,

A McGeehan

Ann McGeehan
Director of Elections

Enclosure: Certification Fee Receipt

AM:ID

Financial Division
P.O.Box 12887
Austin, Texas 78711-3697

Gwyn Shea
Secretary of State

Office of the Secretary of State

Packing Slip

April 3, 2003

Election Systems & Software Inc
11208 John Galt Blvd
Omaha NE 68137

Batch Number: 3120084 **Batch Date:** 04-03-2003

Client ID: 11269827
Return Method: Mail

Document Number	Document Detail	Fee
31200840002	Voting System Examination Fee	12000.00
	Total Document Fees	**2,000.00**

Payment Type	Payment Status	Payment Reference	Amount
Check	Received	90792	$12,000.00
		Total Payments Received	**$12,000.00**
		Total Amount Charged to Client Account	$0.00
		Total Amount Credited to Client Account	$0.00

Note: This is not a bill. Please do not send any payments until the monthly statement is received.
Any amount credited to Client Account may be refunded upon request.
Refunds (if applicable) will be processed upon Request.
Acknowledgement of Filing Document(s) (if present) is attached.

User ID: KCULVER

ELECTION
SYSTEMS & SOFTWARE

May 27, 2003

Ms. Ann McGeehan
Director of Elections
Office of Secretary of State
208 E. 10th Street, 3rd Floor
Austin, TX 78701

Re: Texas Administrative Code; Use of Audit Logs in Automatic Tabulation Equipment

Dear Ms. McGeehan:

I am writing to you after examination of the latest change to the Texas Administrative code; specifically, Title 1, Part 4, Chapter 81, Subchapter D, rule § 81.62 (d). While I agree that the March 25th, 2003 amendment to the rule is a definite improvement and a welcome change, I believe the rule contains requirements that cannot be applied consistently to each subsystem of a voting system. Also, over the past several years, there has been confusion by the vendors and the certification committee over the terminology of the rule and exactly how to apply the intent of the rule. This is due to the fact that the rule was written to deal with earlier election technologies. Technologies in use today warrant a change in the rule to adequately meet the original intent of the rule.

As a result, I would like to recommend changes that accomplish the following objectives: 1) to better define the Rule's content so that a more precise declaration of the intent of the rule is followed by the vendors, 2) identify ways to enable the certification examination committee to better apply the intent of the rule to the election systems being examined, and 3) parse the rule into subsections that will apply to the subsystems of any voting system.

For clarification, I have defined the following two basic parts of the election system. This seems to be the point that offers the most confusion with the intent of the rule.

Automatic Tabulation Equipment: Refers to Ballot Tabulators either DRE or Optical Scan, either central or in precinct devices. These devices simply allow the

voter to input directly or mark a ballot for scanning in the precinct. They store vote counts, as in a ballot tabulator, or ballot images, as in a DRE system.
Accumulation systems: Refers to a program designed to accumulate results from automatic tabulation equipment. These are commonly referred to as central election results software programs or reporting systems.

To shorten my explanation, I will not go into each item by detail and explain, but rather, point out some obvious issues, then provide my recommendation. Through the recommendation, it will become clear why there has been and still can be confusion with the rule.

First, subsection(b) item (4) refers to identifying input ports used for modem *from* precincts, which suggests that this is referring to the central accumulation system. This *does not apply* to either precinct or central Opscan systems, nor precinct DRE systems (automatic tabulation equipment), yet the title of the rule (ref. RULE §81.62) states, use of audit logs in Automatic Tabulation Equipment.

Second, item (5) refers to users logging in and out from an election system. This does not apply to central or precinct optical scan, but could apply to some vendors DRE controller terminals. Again, no reference is made to declare which part of the election subsystem it should be applied to. Again, the examiners are left trying to determine how to legally interpret the rule and the vendors are left trying to guess how they ultimately will.

The following recommendation preserves the intent of the original rule and allows application of a new set of rules that apply directly to the specific election subsystem it is intended. First, the current rule, and then the recommendations.

Current Rule from TAC

TITLE 1	ADMINISTRATION
PART 4	OFFICE OF THE SECRETARY OF STATE
CHAPTER 81	ELECTIONS
SUBCHAPTER D	VOTING SYSTEM CERTIFICATION
RULE §81.62	Use of Audit Logs in Automatic Tabulation Equipment

(a) For any voting tabulation device, or any modification to a voting tabulation device, to be certified for use in Texas elections, the device shall include a continuous feed printer dedicated to a real-time audit log. All significant election events and their date and time stamps shall be printed to the audit log.

(b) The definition of "significant election events" in subsection (a) of this rule includes but is not limited to:

(1) error messages and operator response to those messages;
(2) number of ballots read for a given precinct;
(3) completion of reading ballots for a given precinct;

(4) identity of the input ports used for modem transfers from precincts;
(5) users logging in and out from election system;
(6) precincts being zeroed;
(7) reports being generated; and
(8) diagnostics of any type being run.

(c) The audit log for an election shall be retained by the custodian of election records for the appropriate preservation period.

(d) An alternative to the real-time printed audit log requirement may be approved by the Secretary of State for use on a precinct level voting system if the Secretary determines that the alternative produces at a minimum a sufficient record of items (b)(1)-(8) listed above and any administrative functions performed prior to opening the polls, the opening and closing of the polls, all ballot images, and any administrative functions performed after the closing of the polls. The alternative audit must be capable of being printed and a printed copy must be made available upon request.

Proposed Changes (Changes in bold)

TITLE 1 ADMINISTRATION
PART 4 OFFICE OF THE SECRETARY OF STATE
CHAPTER 81 ELECTIONS
SUBCHAPTER D VOTING SYSTEM CERTIFICATION
RULE §81.62 Use of Audit Logs in **Election Systems**

(a) For any voting tabulation device, or any modification to a voting tabulation device, **OR any accumulation software systems (reporting programs used to consolidate and distribute election results from tabulation devices)** to be certified for use in Texas elections, the device **or system** shall include a continuous feed printer dedicated to a real-time audit log. All significant election events and their date and time stamps shall be printed to the audit log.

(b) The definition of "significant election events" in subsection (a) of this rule includes ***but is not limited to***:

(1) For Central Optical Scan tabulation devices...
(a) error messages and operator response to those messages;
(b) number of ballots read for a given precinct;
(c) precincts being zeroed **or saved to storage medium;**
(d) reports being generated; and
(e) diagnostics of any type being run.

(2) For Precinct based Optical Scan tabulation devices...
(a) error messages and operator response to those messages;
(b) **Poll opening event**;

(c) **First ballot processed;**
(d) **Poll closing event;**
(e) **number of ballots read for a given precinct, (if the system does not produce precinct reports with this information);**
(f) **number of blank ballots accepted;**
(g) **number of over voted ballots accepted;**
(h) **number of write in ballots accepted;**
(i) precincts being zeroed;
(j) reports being generated;
(k) **administrative or** diagnostic **events** of any type being run **prior to poll opening, while polls are open, and after polls are closed; and**
(l) **success or failure to modem results to a central site.**

(3) For Precinct based DRE tabulation devices...
(a) error messages and operator response to those messages;
(b) number of ballots **recorded** for a given **terminal;**
(c) a record of each recorded ballot image for a given terminal;
(d) **poll opening event;**
(e) **poll closing event;**
(f) precincts **or terminals** being zeroed;
(g) reports being generated;
(h) **administrative or** diagnostic **events** of any type being run**, prior to poll opening, while polls are open, and after polls are closed; and**
(i) **success or failure to modem results to a central site.**

(4) For Central election results software programs...(Reporting software systems)
(a) error messages and operator response to those messages;
(b) number of ballots **received or uploaded** for a given precinct;
(c) **identity of tabulation device type the system is receiving results from;**
(d) **identity of precincts the system is receiving from the tabulation devices;**
(e) **identity of the means by which the system accepted results, i.e. modem, direct read from disk, serial upload, etc.;**
(f) users logging in and out from election system;
(g) precincts being zeroed;
(h) reports being generated; and
(i) diagnostics of any type being run.

(c) The audit log for an election shall be retained by the custodian of election records for the appropriate preservation period.

(d) An alternative to the real-time printed audit log requirement may be approved by the Secretary of State for use on a precinct level voting system if the Secretary determines that the alternative produces at a minimum a sufficient record of items **(2) (a-l) and (3) (a-i)** listed above. ~~and any administrative functions performed prior to opening the polls, the opening~~

~~and closing of the polls, all ballot images, and any administrative functions performed after the closing of the polls.~~ The alternative audit must be capable of being printed and a printed copy must be made available upon request.

The strikeout in item subsection (d) above, is due to optical scan system differences from DRE systems. Optical scan systems typically do not store ballot images, but rather store aggregated vote totals by precinct from each ballot scanned. Those items struck out were added to each individual device subsection within the rule for clarity.

I would like to hear your feedback on the proposed changes and start the process of change for the recommendations. I would like to discuss any issues you might have on the content or context of the changes before formally presenting these changes. Feel free to call me directly to discuss.

Sincerely,

Steve Bolton
VP Product Management
ESS

Cc: Don Blakely
Mike Devereaux
Roy Orr

ELECTION
SYSTEMS & SOFTWARE

July 3, 2003

Ms. Irene Diaz
Office of the Secretary of State
208 E. 10th Street, 3rd Floor
Austin, TX 78701

Dear Irene:

Enclosed you will find the application along with the required documents for the August examination. We are only applying for one item, the iVotronic Image Manager software. The iVotronic Image Manager creates the images that are required for bitmap ballots on the iVotronic DRE. This software is under the umbrella of the Unity Software Suite version 2.4, that was examined this past May. I did not attach Form 100 Schedule A since this is the first time we are submitting this software and there have not been any comments made. Also, I have not submitted Form 101 due to the fact that this software is for DRE ballot layout and does not apply to tabulation.

A check in the amount of $3,000.00 will be following this package shortly. Please let me know if you have any questions regarding this application. I look forward to talking with you in the near future regarding the examination date for ES&S.

Sincerely,

Lisa Conway

Lisa Conway
Certification Associate

The State of Texas

Elections Division
P.O. Box 12060
Austin, Texas 78711-2060
www.sos.state.tx.us

Phone: 512-463-5650
Fax: 512-475-2811
TTY: 7-1-1
(800) 252-VOTE (8683)

Gwyn Shea
Secretary of State

VOTING SYSTEM CERTIFICATION - FORM 100

Person Making Request	Lisa Conway
Organization	Election Systems & Software
Street Address, City, State, Zip	11208 John Galt Blvd. Omaha, NE 68137
Phone Number	402.593.0101
Fax Number	402.970.1275
E-Mail Address	Lslehan@essvote.com

	Component Submitted for Certification	Exact Version	Previous Texas Certification Date*	NASED Certification Date for this Version	NASED Status Number for This Version
1	iVotronic Image Manager (under Unity 2.4)	1.2.0.1	N/A	June 30, 2003	N/A
2					
3					
4					
5					
6					
7					

*For the most recent certification, or state "None"

Required Materials Checklist (Indicate materials submitted with an "X")	
X	Software (7 copies required)
X	Source Code (5 copies required)
X	User Manuals (7 copies required)
X	Forms 100 and 101 (Form 101 does not apply)
	Certification Fee
X	Summary Report from a Nationally-Recognized Testing Laboratory (7 copies required)

If applicable, attach Schedule A, listing issues raised in past examinations.

Signature of Person Making Request	Title	Date
Lisa Conway	Certification Associate	7/3/03

Date: May 13, 2004
To: Irene Diaz & Ann McGeehan, Texas Division of Elections
Cc: Allen Benek, Ken Carbullido
From: Steve Bolton

Re: iVotronic Audit Data Collection

Irene,

Regarding your inquiry into the issues reported on the collection of Audit Data from the iVotronic using the compact flash card to collect the data, I issue you this response after investigating the issue with the iVotronic development team members.

The iVotronic uses three EEPROMs (electrically erasable programmable read only memory) to simultaneously store events and ballot image records. Each EEPROM stores a configuration block of data that is completely separate from the ballot and event data blocks, which contains the iVotronic serial number and other retained data such as protective count and screen calibration values. Each subsequent EEPROM stores the iVotronic serial number within the configuration block, offset from the previous EEPROM, so that the system never has a chance to over-write the serial number data during the clearing and testing mode.

The *Unity Election Reporting* system utilizes an executable file (viodialog.exe) that will read each compact flash and collect the serial numbers from the configuration block. This executable in versions prior to Unity 2.4.x.x, was not looking for the configuration block of data to shift location from one EEPROM to the next and consequently, the serial numbers of any audit data collected from a compact flash that came from either EEPROM #2 or #3 of an iVotronic would not report the correct serial number. This is due to viodialog.exe set to look for the location of the serial number for EEPROM #1 at all times.

This issue only relates to the offset of the iVotronic serial number within the configuration block of data. This block of data is NOT the audit data, however it is used in conjunction with the audit data to report the serial number of the terminal in which the audit data came from. At no time, has the ballot data or event data of the iVotronic ever been corrupted or lost within the EEPROMS of the iVotronic. The ballot data has always remained in tact and identical for all three EEPROMS and further more, the audit data on the compact flash card was and always has been correct. (NOTE: if the *compact flash* data is corrupted while copying from the iVotronic, the iVotronic terminal itself will alert the user that the file is corrupted during the copy process.)

As a result of the Unity ERM executable not dynamically looking for the configuration block of the EEPROM, the report from Unity would reflect an erroneous number in the place of the serial number on the event or audit data reports from Unity ERM. The ballot data however, always has remained correct and intact.

In versions prior to iVotronic V. 8.x, certain unused memory areas outside of where the events and images are stored were also included in the process of validating that all three EEPROMS were an exact match prior to copying to the compact flash. It was found that at certain times depending on what functions were executed on a terminal, some memory bytes in the unused memory area were different from those on the other two EEPROMS (that memory area was not part of the redundancy update), thus causing the terminal to write the audit data from one of the other redundant EEPROMS to the compact flash. Only the first EEPROM was properly processed for the serial number in the Unity Election Reporting system. All audit data, however, was an exact match on all three EEPROMS or the iVotronic would produce an error message while writing the data.

This issue of reading the configuration block of memory that contains the serial number of the iVotronic terminal has been corrected within the Unity 2.4.x.x ERM program and now will look and verify the correct memory location for the configuration file in order to read the serial number correctly if the terminal uses *any* of the three EEPROMs data for writing to the compact flash.

I hope this helps you and your staff to understand the defect and it's related affects that have been misunderstood as an iVotronic firmware issue.

Respectfully Your,

Steve Bolton