

Elizabeth Hanshaw Winn

From: Nick Osborn [REDACTED]
Sent: Tuesday, July 16, 2002 10:52 AM
To: [REDACTED]
Subject: Re: FW: Harris election night tabulation

Elizabeth,

According to their reading of the law, and bearing in mind that I'm no lawyer, it seems that this system does not need certification. It might be that the definitions in the elections code needs to be changed, however. Every piece of software that can connect with the polling devices or transmit data from them inherently increase the risk of security breach. Thus a "system" might need to be redefined as all software that touches the actual ballots whether in read-only or read-write mode, or that transmits data or reports from the ballots to any other system or reporting location.

It appears that Hart has aggressively addressed most of the security concerns in the Rally product. Further, since this kind of electronic election reporting is still in its infancy, it would appear to be unlikely that hackers or terrorists will have the necessary experience to compromise such systems. But even if we were to examine the systems, we don't have the in-house expertise to determine how effective the security measures are. Such technical questions should probably be referred to one of the testing services.

Thus at this time I do not see any objections to the use of Rally. I would hesitate to call this a "certification," though.

According to their document (p3) SERVO is "certified." I may be mistaken, but I don't think we certified it because there was no requirement to certify such software.

(Thinking out loud: I don't see how a carefully designed electronic system could be less secure than paper ballots. Nearly anyone could commit vote fraud with paper.

Someone who breaches security of an electronic system could alter far more votes than could be done with paper. However, the more manipulation that occurs, the more people will be aware of it and the more likely it will attract public attention--e.g. WorldCom.

Electronic manipulation may have the advantage of greater secrecy. All it requires is a dishonest election official or candidate and/or a talented hacker. It may require a Very talented hacker. The hacking may go undetected because the avenue to hacking--access to the election computers--is available to few people whereas paper ballot fraud can be audited by just about anyone.

It still seems that electronic security is probably the least of our worries at this time. There are other, simpler, tried-and-true ways to commit election fraud.)

Nick Osborn
[REDACTED]

*(Servo)
works
Something
in
writing*

>>> Elizabeth Hanshaw Winn [redacted] 07/16/02 10:06AM

>>>

Can you guys take a look at Neil's request. If this is something that needs an exam, their deadline for Sept. will be July 29th.

-----Original Message-----

From: [redacted] [mailto:[redacted]]
Sent: Tuesday, July 16, 2002 9:04 AM
To: Elizabeth Hanshaw (E-mail)
Subject: Harris election night tabulation

Elisabeth,

Attached is the letter I discussed with you awhile ago regarding the use of certain functionality by Harris County for the upcoming November election.

I will be in Austin the afternoon of 7/23 and all day on 7/24 and I can meet with you if necessary. Let me know if you have any questions. Thanks

Neil



July 16, 2002

Elizabeth Hanshaw-Winn
Elections Division
Secretary of State
1019 Brazos Street
Austin, TX 78701

Dear Ms. Hanshaw-Winn;

This letter is a follow-on to a discussion I had with you recently related to the use of certain uncertified functionality involving electronic transmission of election results for unofficial reporting in Harris County, Texas for the November 2002 Election. It is Hart's and Harris County's desire to inform the State of the proposed use of this functionality as part of Hart's eSlate Electronic Voting System and to seek acknowledgement that the configuration falls within State requirements for voting system operation.

As you are aware, Harris County, Texas has purchased the Hart InterCivic eSlate Electronic Voting System (the System) and is preparing to implement the third phase of the installation plan for countywide deployment on Election Day. Phases one and two involved the use of the early and by-mail components of the System in previous elections.

Installation of the necessary software to support the November Election will occur by the end of the summer with implementation of Hart's distributed data collection function that will allow expedited reporting of unofficial election returns. Given the timing of the fixed September date for the Texas Voting System Certification Board meeting and the amount of time required to complete the review cycle, the functionality would not be approved in time for installation, testing and implementation for the November Election.

According to Texas State requirements, for any election results that are transmitted utilizing electronic means, those results are defined as unofficial. Hart's distributed data collection function utilizes electronic transmission of election results and therefore is unofficial. Texas State requirements further provide for the use of uncertified functionality for reporting of unofficial results. These facts describe Hart's intended implementation for reporting unofficial results for the third phase of the Harris County installation and would indicate that the configuration for the November 2002 election fall within the State's requirements.

Official results will be produced the following day by a certified component of the System, Tally Version 2.9 that was certified in March of 2002. Tally will obtain cast vote data to complete the tabulation of official reports by using the MBBs from the polling places.

The following is a description of the unofficial reporting using Hart's distributed data collection functionality.

Distributed Data Collection

To solve the reporting requirements of a large geographic county such as Harris County, Hart has developed a distributed data collection functionality that establishes geographically distributed satellite collection stations for the System's Mobile Ballot Box (MBB). As you recall, the MBB is the primary memory device used to transfer the Cast Vote Records (CVRs) generated at the polling place to a central tabulation function. Once the polls are closed, the MBB is delivered to a tabulation function where the CVRs are accumulated and results produced. In a county the size of Harris, with over 750 polling places, using a single central collection point creates physical limitations. As soon as the polls close, over 750 polling place officials would converge on a single location restricting the ability to produce timely reports due to driving distances, facilities capacity, traffic and human congestion. The satellite collection stations geographically distribute this massive gathering to provide a more orderly and safer collection process.

The satellite collection station consists of the use of certified hardware, a standard PC and the M2B3, which reads the MBB. The core of the station is a new software application called Rally, which manages the MBBs. The Rally application includes functionality for MBB verification, reading, election data storage and communication with a central tabulation function. The same process used by Tally to read MBBs is employed by Rally, where the MBB is inserted in the M2B3, authenticated, and an exact copy created of the contents. The data on the MBB remains intact and, in fact, the M2B3 is configured for "Read-Only" access to prevent inadvertent alteration of the MBB data. Using functions developed for Tally, the collected data is decoded, stored, and a by-precinct summary of results created and saved. Rally continues to read MBBs and update the summary as new information is available. All the logic used by Tally to manage, authenticate, prevent double reads and error handling for the MBBs is incorporated into Rally. The same level of certified auditing that exists in Tally is also employed in this new application.

Rally is connected to a dedicated communications channel that can be a telephone line or any available variety of a private, closed network connection, such as Ethernet or private DSL. Under no circumstances is Rally connected to a public network, i.e. the Internet or wireless communication channel. The Rally communication port is configured such that it will accept only incoming connections and is periodically connected with the central tabulation function to upload an updated summary.

The central tabulation function is a revised version of Tally. The revised release will be Version 3.0 and is a next generation product that incorporates the experience and feedback gained through the use of Tally in many election cycles. A new feature of Tally version 3.0 is the support of Rally stations to incorporate the distributed data collection functionality.

The new Tally functionality is intentionally configured for out-going connections only, which minimizes the possibility of unauthorized access to the central accumulation and storage component. As part of the pre-election initialization, Tally is provided an inventory of Rally stations, which includes unique identifiers, communication parameters and other security data. In operation, Tally will poll identified Rally stations periodically for updated summary results

Page 3 of 3
Elizabeth Hanshaw-Winn
July 16, 2002

and will aggregate the data centrally. All incoming data is authenticated in a manner consistent with previously certified functionality. Tally is able to provide up-to-the-minute unofficial reports of election returns as required by election officials.

Official Election Results

Official results will be compiled the day after the Election. The MBBs collected at the Rally stations will be secured upon receipt and physically transported to a central location where the contents will be read into an official, certified version of Tally (2.9). This process follows the same steps as the certified process where the Rally stations are used only as an MBB collection site. The integrity of the election will be further assured by exercising SERVO, a certified product and will provide duplicate originals of all Cast Vote Records stored on the precinct equipment.

Rally Certification

The satellite collection station was built on the principles of Hart's Tally software application and was developed to become an ITA certified component of the System. Hart's familiarity and experience with ITA and State requirements virtually guarantees that the satellite collection stations will receive approval from the entities governing Hart's market space. It is Hart's intention to submit Rally for the January meeting of the Texas Voting System Certification Board.

Conclusion

We believe the approach outlined above will provide a very effective process for collecting, reporting and certifying the November 2002 Election in Harris County while adhering to State voting system requirements. I would like to request that you review the information and provide to Hart InterCivic and the County your affirmative response to this proposed process.

Sincerely,

<via e-mail>

Neil McClure
Vice President
Hart InterCivic, Inc.

cc. John German, Harris County Administrator of Elections

The State of Texas



Elections Division
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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

September 20, 2002

Mr. Neil McClure
Hart Intercivic, Inc.
1650 Coal Creek Drive, Suite E
Lafayette, Colorado 80026

Dear Mr. McClure:

You recently requested a statement in writing from our office regarding the proper transfer and retention of precinct election records. The Texas Election Code (the "Code") requires that the original precinct election records be retained after an election for the statutorily-required period of 60 days as a general rule and 22 months for elections in which a federal office is on the ballot. Tex. Elec. Code Ann. §§ 66.058(a), 66.058(g) (Vernon Supp. 2002). Regardless of whether records are kept in a file cabinet or in digital form, the records must be available to interested parties throughout the applicable retention period. Currently, we are in the process of reviewing the federal guidelines to determine whether the storage of election records may be kept exclusively in an electronic format. Volume 1, Section 2, Subsection 2.2.11 of the FEC Standards provides, in part, as follows: "...it is recommended that the state or local jurisdiction also retain electronic records of the aggregate data for each device so that reconstruction of an election is possible without data re-entry." Based on our initial review, it appears that the records are required to be kept in its original format, but the federal government is recommending a printed record.

Hart Intercivic submitted its Servo system for examination in May 2002. The Servo system is, in part, a records management tool. As per your request, we are confirming in writing that in the course of the May examination, the determination was made that Servo is not a voting system and subsequently not subject to this office's review under Section 122.031 of the Code.

We hope that this answers your question. If you need additional information, please contact the Elections Division toll-free at 1-800-252-VOTE(8683).

Sincerely,

A handwritten signature in black ink that reads "Ann McGeehan". The signature is written in a cursive style with a large initial "A" and "M".

Ann McGeehan
Director of Elections

AM:PM:id

Elizabeth Hanshaw Winn

From: Neil McClure [REDACTED]
Sent: Thursday, September 19, 2002 7:39 PM
To: 'Elizabeth Hanshaw Winn'
Subject: RE: Election Records process

Elisabeth,

I know you're real busy but I still haven't received anything on this yet. If it turns out that the State does not require SERVO to be certified, I can address that with the counties, but I need a statement. I've told them that information was forthcoming based on what you told me so now I'm getting pressured pretty hard to respond to them. Please help, I'm suppose to respond by Friday.

Neil

-----Original Message-----

From: Elizabeth Hanshaw Winn [mailto:[REDACTED]]
Sent: Monday, August 26, 2002 9:37 AM
To: [REDACTED]
Subject: RE: Election Records process

will do

-----Original Message-----

From: Neil McClure [mailto:[REDACTED]]
Sent: Monday, August 26, 2002 8:10 AM
To: 'Elizabeth Hanshaw Winn'
Subject: RE: Election Records process

Elizabeth,

We have not received a response yet. Could you check on it please?

Neil

-----Original Message-----

From: Elizabeth Hanshaw Winn [mailto:[REDACTED]]
Sent: Monday, August 05, 2002 2:35 PM
To: [REDACTED]
Subject: RE: Election Records process

Received. Will get back with you soon.

-----Original Message-----

From: [REDACTED] [mailto:[REDACTED]]
Sent: Monday, August 05, 2002 3:35 PM
To: Elizabeth Hanshaw (E-mail)
Subject: Election Records process

Elizabeth,

I spoke with Harris County and they would like something in writing concerning the matter of election records, the process used for transferring the information and retention of information. I informed they that the

State has requirements for the storage of records but not the process that is used.

I quoted a passage from the white paper I wrote in an attempt to communicate the essential elements of transferring and retention of election records.

"In order to effect the transfer of these original records and preserve their authenticity and validity as evidence, the treatment of the data must be able to withstand challenge in a court of law. Research establishes that transfer or copies of electronic files or memory are an acceptable form of records and will satisfy the federal requirement of twenty-two months, provided the process used to transfer or copy the data is validated and auditable. These archived records would likewise be readily admitted in any court of law."

Hart follows the principals outlined above. However, Harris would still like something in writing. Let me know if you have any questions.

Neil
(303) 385-6442

ix - (303) 385-6477

Irene Diaz

Subject:

FW:

-----Original Message-----

From: Elizabeth Hanshaw Winn
Sent: Tuesday, October 22, 2002 3:57 PM
To: [REDACTED]
Subject: RE:

Thanks for the follow-up.

-----Original Message-----

From: [REDACTED] [mailto:[REDACTED]]
Sent: Tuesday, October 22, 2002 3:58 PM
To: 'Elizabeth Hanshaw Winn'
Subject: RE:

Elizabeth,

We are proceeding with the approach last discussed with you where we use multiple, certified Tally stations at a central site. The MBBs are going to be physically collected at five remote sites, physically transported to the central location where they will be read by the Tally stations. Reports will be periodically produced from each station along with an electronic export.

I believe this fits within the scope of functionality we discussed surrounding this topic. If you have other questions or would like more detail, please let me know.

Neil

-----Original Message-----

From: Elizabeth Hanshaw Winn [mailto:[REDACTED]]
Sent: Tuesday, October 22, 2002 11:06 AM
To: [REDACTED]
Subject:

Hello Neil, I guess you finally received the letter relating to the Servo since I haven't received any more emails from you. I've realized that we've never closed the gap regarding Harris County's plan to modem their results into central count for the November 5, 2002 general and special proposition elections. My understanding that using the normal set up with the Eslate and the Tally system would not work because Harris County has too many precincts-the system would get clogged. We denied your original request to use the uncertified Rally system to collect the data at regional sites and to modem the results from the regional sites on an uncertified ethernet-type setup. Our compromise using the Tally system at the regional sites was apparently not well received by the County, but to date, no other solution has been agreed upon. Please advise.

Elizabeth Hanshaw Winn

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]

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-----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.

5/22/2002

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

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5/22/2002

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 their reason for not certifying. Below is a breakout of the examiners reports and concerns for your informationFollowing, I explain why I see no reason not to certify 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



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]

12/4/02

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 is 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]