



Memorandum

To: Honorable Gavin Newsom, Mayor
Honorable Members, Board of Supervisors

From: John Arntz, Director of Elections

Date: May 16, 2007

Re: Voting System Update #1: San Francisco's Voting System Does Not Meet Secretary of State's Certification Review Standards

San Francisco extended its contract with Election Systems & Software (ES&S) to provide support services for the November 6, 2007 election, and also required ES&S to have its system recertified by the Secretary of State to conduct ranked-choice voting elections. However, the ES&S optical scan voting system does not meet minimum certification requirements recently set by the Secretary of State's office (SOS). Since certification would require an exception to the SOS' new certification criteria, the City cannot assume it will use the ES&S system for the upcoming November 6, 2007 election and must consider alternative methods of conducting the election, including a hand-count of all ballots cast.

Secretary of State Denies Administrative Extension of Certification

Secretary of State Debra Bowen denied administrative recertification of ES&S' optical scan voting system that is used in San Francisco to conduct ranked-choice voting elections (RCV). In a letter to ES&S issued on May 9, 2007, Secretary Bowen denied ES&S' request for administrative approval, but indicated ES&S may resubmit its request if ES&S' system successfully completes an upcoming "top-to-bottom review" of voting systems, organized by the Secretary's office.

ES&S Removes Systems from Top-to-Bottom Review, Seeks Certification of "New" System

Soon after issuing the letter to ES&S, the Secretary of State's office (SOS) released information explaining the criteria and methodologies for a top-to-bottom review of all voting systems certified for use in California. The review will be an intensive examination of these voting systems and is meant to determine whether California's voting systems are "secure, accurate, reliable, and accessible."

After the Secretary issued her letter to ES&S and after the release of information on the top-to-bottom review, ES&S asked the SOS to withdraw ES&S' systems from inclusion in the top-to-bottom review process, as they instead intend to submit a "new" system for certification review. This "new" system consists of upgrades to ES&S systems that San Francisco does not use, except for the AutoMARK. The AutoMARK is a ballot-marking device placed in each polling place to provide people with disabilities the

opportunity to vote independently and privately as required under the federal Help America Vote Act of 2002.

California requires vendors that make any changes to their voting systems to submit those systems for testing and review for new certification, even if the voting systems were certified for use before the changes took place. Therefore, ES&S' approach in seeking certification review for its upgraded systems follows established requirements of the SOS. However, ES&S' request differs from the usual approach in that it includes a system that has *not* undergone any upgrades or modifications: specifically, the optical scan system that San Francisco currently uses, and which is programmed to conduct ranked-choice voting elections (RCV).

To provide some background, since the June 2006 election, San Francisco has used two separate voting systems: the optical scan system, and the AutoMARK. The two systems are not compatible and require separate preparation, testing, ballots, and procedures. ES&S intended synchronized use of the AutoMARK with ES&S' newer voting system and did not prepare the AutoMARK to be compatible with the older system used in San Francisco.

Top-to-Bottom Review

The top-to-bottom review of each voting system currently certified for use in California will last approximately three weeks per system. The review will include a thorough analysis of all system documentation and system source code. All vendors must participate in the top-to-bottom review if they wish to maintain their California certification. Although ES&S' systems now will not be included in this review, the process requires Sequoia Voting Systems to submit its systems for review.

The teams formed to conduct the reviews will scrutinize voting systems' software source code to ensure the code contains no programming that is adverse to properly conducting elections and counting votes. A media release from the Secretary's office indicates, however, that the software code will not be freely available to the public because of "the proprietary nature of the systems being reviewed and laws that preclude the Secretary of State from releasing anything that may be considered proprietary in nature or contain trade secret information." Yet, highly respected experts will review the voting systems' software code to ensure that the programming works as expected.

A threshold requirement for all systems included in the top-to-bottom review is that they meet federal voting system standards set in 2002. ES&S' optical scan system does not meet, and I understand the system cannot be modified to meet, these 2002 standards. By comparison, the ES&S optical scan system used in San Francisco was developed to meet operating standards set in 1990.

Certification Process to Incorporate Criteria Developed for Top-to-Bottom Review

The SOS expects ES&S to submit its application for certification in the very near future. While the top-to-bottom review will take approximately three weeks per system to complete, the testing and review process to certify systems will last approximately eight weeks. The level of scrutiny the SOS will apply to voting systems during the top-to-bottom review will also apply for systems under testing and review for new certification.

Thus, the SOS will expect any ES&S system submitted for certification to meet the 2002 standards. Any system that does not meet these standards might be rejected outright and not tested and reviewed for certification. Even if a system cannot meet the 2002 standards, the SOS may allow a county to use that system by requiring the county to implement substantial operational safeguards. Such safeguards might include bringing all ballot cards that were cast at the polling places to City Hall for counting.

Potential Outcomes from Review for Certification

Below is a list of potential outcomes the City may face while preparing for the November 6, 2007 election:

Optical Scan System

- The SOS waives the requirement that all voting systems meet 2002 federal operating standards before being eligible for certification testing and review, determines ES&S' optical scan system sufficiently passes testing and review, and grants certification
- The SOS waives the requirement of the 2002 standards and determines ES&S' optical scan system deserves limited certification on the condition that significant procedural safeguards are implemented
- The SOS rejects the optical scan system for certification review because it cannot pass the 2002 standards and decertifies the system for use in November 2007

AutoMARK

- The AutoMARK passes testing and review and the SOS grants certification
- The AutoMARK partially passes the review except for conducting RCV elections
- The AutoMARK does not pass the review, but is allowed to be used with the implementation of significant procedural safeguards
- AutoMARK system does not pass testing and review and the system is decertified and not available for use in November 2007

Conclusion

Until ES&S submits an application seeking certification of its voting system used in San Francisco, the SOS will not make any determination regarding that system. The Secretary of State is clearly intent on establishing uniform standards for all voting systems certified for use in California. The criteria the SOS developed to conduct the top-to-bottom review will also apply to systems that require new certification. Thus, the original concern of seeking certification of the RCV component of the ES&S optical scan system is now overshadowed by a greater concern: whether the City will be forbidden from using the ES&S system this November. The City must consider alternative methods for conducting the November 6, 2007 election, including being prepared to hand-count all ballots cast in the election.

This memorandum's focus is the November 6, 2007 election. It does not address issues related to the February, June, and November 2008 elections. Finally, I have attached Secretary Bowen's letter to ES&S, and news releases from her office regarding the top-to-bottom review.

Encl; May 9, 2007 Letter from Secretary of State Debra Bowen to Election Systems & Software
May 9, 2007 News Release from Secretary of State: Summary of Top-To-Bottom Review
May 9, 2007 News Release from Secretary of State: Frequently Asked Questions on Review
May 10, 2007 News Release from Secretary of State: Random Drawing of Systems for Review

cc: Dennis Herrera, City Attorney
Ed Harrington, Controller
Edwin Lee, City Administrator
Phil Ginsburg, Mayor's Chief of Staff
Nani Coloretti, Director, Mayor's Budget Office
Greg Wagner, Analyst, Mayor's Budget Office
Jon Givner, Deputy City Attorney
Elections Commission

DEBRA BOWEN

CALIFORNIA SECRETARY OF STATE NEWS RELEASE

FOR IMMEDIATE RELEASE

May 10, 2007

Contact: Eyan Goldberg
(916) 653-6575

Secretary of State's Office Announces Results of Random Drawing for Top-to-Bottom Review of Voting Systems

SACRAMENTO – Secretary of State Debra Bowen's office today held a randomized drawing to determine the order that voting systems will be reviewed during the upcoming Top-to-Bottom Review. The results of the drawing are as follows:

1. **Los Angeles County InkaVote Optical Scan**
 - Microcomputer Tally System (MTS) version 1.3.1
 - LRC 1000 CPM Card Reader
 - InkaVote Vote Recorder Device

2. **Sequoia WinEDS version 3.1.012/Edge/Insight/400-C**
 - WinEDS, version 3.1.012
 - AVC Edge Model I, firmware version 5.0.24
 - AVC Edge Model II, firmware version 5.0.24
 - VeriVote Printer
 - Optech 400-C/WinETP firmware version 1.12.4
 - Optech Insight, APX K2.10, HPX K1.42
 - Optech Insight Plus, APX K2.10, HPX K1.42
 - Card Activator, version 5.0.21
 - HAAT Model 50, version 1.0.69L
 - Memory Pack Reader (MPR), firmware version 2.15

3. **Diebold GEMS 1.18.24/AccuVote**
 - GEMS software, version 1.18.24
 - AccuVote-TSX with AccuView Printer Module and Ballot Station firmware version 4.6.4
 - AccuVote-OS (Model D) with firmware version 1.96.6
 - AccuVote-OS Central Count with firmware version 2.0.12
 - AccuFeed
 - Vote Card Encoder, version 1.3.2
 - Key Card Tool software, version 4.6.1
 - VC Programmer software, version 4.6.1

--MORE--

4. **ES&S City and County of San Francisco Voting System**
 - Optech III-P Eagle version HPS 1.30/APS 1.52
 - Optech IV-C, Model 400 version 1.07(a) *(or version 1.08(c))*
 - Unity version 2.4.3

5. **Hart Intercivic System 6.2.1**
 - Ballot Now software, version 3.3.11
 - BOSS software, version 4.3.13
 - Rally software, version 2.3.7
 - Tally software, version 4.3.10
 - SERVO, version 4.2.10
 - JBC, version 4.3.1
 - eSlate/DAU, version 4.2.13
 - eScan, version 1.3.14
 - VBO, version 1.8.3
 - eCM Manager, version 1.1.7

6. **ES&S InkaVote Plus Precinct Ballot Counter Voting System, version 2.1**
 - InkaVote Plus Precinct Ballot Counter with ADA unit, firmware version 1.10
 - Unisyn Election Management System, version 1.1
 - Ballot Generation, version 1.1
 - Election Converter, version 1.1
 - Election Loader, version 1.1
 - Vote Converter, version 1.1
 - Vote Tabulation, version 1.1

7. **ES&S Unity 2.4.3.1/AutoMARK**
 - Unity 2.4.3.1
 - Audit Manager v. 7.0.2.0
 - EDM v. 7.2.1.0
 - ESSIM v. 7.2.0.0
 - HPM v. 5.0.3.0
 - ERM v. 6.4.3.3
 - Model 100 Precinct Scanner, version 5.0.0.0
 - Model 550 Central Scanner, version 2.1.1.0
 - Model 650 Central Scanner, version 1.2.0.0
 - AutoMARK Information Management System (AIMS), version 1.0
 - AutoMARK Voter Assist Terminal, version 1.0

8. Hart Intercivic System 6.1

- Ballot Now software, version 3.2.4
- BOSS software, version 4.2.13
- Rally software, version 2.2.4
- Tally software, version 4.2.8
- SERVO, version 4.1.6
- JBC, version 4.1.3
- eSlate/DAU, version 4.1.3
- eScan, version 1.2.0
- VBO, version 1.7.5
- eCM Manager, version 1.1.7

If the system that has been randomly selected first has not been provided to the Secretary of State, the Secretary of State will move to the system that has been randomly selected second. That process will continue until there are three systems for the reviewers to begin testing the week of May 14.

Each top-to-bottom review team will evaluate at least two voting systems. If more than one version of a vendor's voting system is subject to review, the different versions will be assigned to the same team.

Each team will devote a minimum of three weeks per system to examine, test and prepare a draft report of findings for the Secretary of State to review and evaluate.

The top-to-bottom review will consist of a thorough examination of all voting system documentation and the equipment, software and source code used to record and tally votes.

Today's random drawing was held in the Secretary of State's multi-purpose room. Staff members drew the systems in a lottery-style drawing, with witnesses from the media and public present.

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DEBRA BOWEN

CALIFORNIA SECRETARY OF STATE NEWS RELEASE

Top-To-Bottom Review Summary

May 9, 2007

The test of any democracy is whether you can trust the results at the ballot box. Across the country, authoritative studies and nationally recognized experts are asking the question: Are our voting systems secure, accurate, reliable and accessible?

Here's good reason for asking the question. In December 2005, California discovered voting system programming code that escaped the review of federal testers. On May 2, 2007, a congressional task force voted to investigate anomalies in 2006 election results in Florida's 13th Congressional District. These are just two examples that have fueled the debate about whether the systems voters are asked to cast their ballots on are trustworthy and whether the testing processes used to certify voting systems are adequate.

California is facing three statewide elections in 2008, making it even more essential that its voting equipment is secure, accurate, reliable and accessible. That's why Secretary of State Debra Bowen is entering into a contract with the University of California (UC) to conduct a top-to-bottom review of the voting systems certified for use in California beginning the week of May 14.

This first-of-its-kind review will include the following components:

- UC will provide specialists from its campuses, as well as experts from public and private universities and private sector companies throughout the United States to create three teams of experts to conduct the reviews.
- Each system will undergo a thorough document and source code review, red team penetration testing, and a review to determine whether it's accessible to all voters.
- The review teams will provide an independent technical evaluation of the voting systems that the Secretary of State will use to carry out her statutory duty with respect to voting systems in determining whether the systems comply with current state and federal law.

The review is expected to conclude in late July, giving the Secretary of State time to examine the results of the review and determine whether each voting system should retain its current certification, have additional conditions attached to its certification, or be decertified entirely.

Approximately \$450 million has been spent or allocated to buy new voting equipment in California over the past few years. The top-to-bottom review will cost approximately \$1.8 million and will be paid for by the voting system vendors and federal Help America Vote Act (HAVA) money allocated by the Legislature and the Governor in the 2006-07 budget to help answer the fundamental question: Are our voting systems secure, accurate, reliable and accessible?

More information on the review can be found by going to www.sos.ca.gov.



DEBRA BOWEN

CALIFORNIA SECRETARY OF STATE NEWS RELEASE

Frequently Asked Questions About Secretary of State Debra Bowen's Top-To-Bottom Review of California's Voting Systems

May 9, 2007

Why is it necessary to conduct a top-to-bottom review of California's voting systems?
The top-to-bottom review is designed to give California's voters an answer to one simple question: Are all of California's voting systems secure, accurate, reliable and accessible?

What is a top-to-bottom review of California's voting systems?

The top-to-bottom review will consist of a thorough examination of all voting system documentation, procedures, and the equipment used to record and tally votes. The review will have four components:

- ❑ A document review will examine manufacturer documentation, testing reports from federal Independent Testing Authorities (ITAs), reports from prior state certification testing, and reports of independent examinations and testing of voting systems.
- ❑ A source code review will examine the human-readable instructions that are converted into machine-readable code to run the voting systems. The primary focus will be to identify any security vulnerabilities that could be exploited to alter vote recording, vote results, critical election data such as audit logs, or to conduct a "denial of service" attack that prevents people from voting.
- ❑ Red team penetration testing will involve open-ended, hands-on efforts to identify and document any potential for tampering or error in any part of the voting system's hardware, storage devices or software. The red team testers and source code review teams will coordinate their efforts, so potential vulnerabilities identified in red team testing can be further explored in the source code review, and vice versa.
- ❑ The accessibility of the voting systems will be assessed and will include test voting on each of the voting systems by volunteer voters representing a broad range of disabilities.

The document review teams, source code review teams and red teams will interact regularly to learn from one another and to ensure the review of all systems is even-handed.

How will the voting systems be evaluated and does that differ from the draft criteria published on March 22?

The draft criteria relied in part on a set of standards that voting system vendors were not explicitly required by state or federal law to meet. Based on the comments received from interested parties, the final project plan being used to evaluate the voting systems doesn't include those draft standards. Instead, the top-to-bottom review teams will provide an independent

technical evaluation of the voting systems that the Secretary of State will use to carry out her statutory duty with respect to voting systems, as required by Division 19 of the State Elections Code.

The standards and definitions for security, accuracy, reliability and protection of ballot secrecy governing the top-to-bottom review are set forth in the 2002 Voluntary Voting System Standards, which may be found at http://www.eac.gov/election_resources/vss.html. California Elections Code Section 19250 requires voting systems to comply with these standards as a condition of being certified for use in the state.

With respect to accessibility for voters with disabilities and with alternative language requirements, the standards and definitions governing the top-to-bottom review are set forth in the 2005 federal Voluntary Voting System Guidelines, which may be found at http://www.eac.gov/VVSG%20Volume_I.pdf and in California Elections Code Sections 19227, 19250 and 19251.

The red team penetration testing will be conducted in accordance with Resolution # 17-05 of the Technical Guidelines Development Committee (hereafter "TGDC") of the U.S. Election Assistance Commission, adopted at the TGDC plenary meeting on January 18-19, 2005, which calls for:

"... testing of voting systems that includes a significant amount of open-ended research for vulnerabilities by an analysis team supplied with complete source code and system documentation and operational voting system hardware. The vulnerabilities sought should not exclude those involving collusion between multiple parties (including vendor insiders) and should not exclude those involving adversaries with significant financial and technical resources."

Who will conduct the review?

The Secretary of State is contracting with the University of California (UC) to assemble three top-to-bottom review teams that rely on specialists from UC, as well as from public and private universities and private sector companies throughout the United States. To ensure a fresh look at the voting systems, scientists with specific experience in voting system technology and security experts from other fields who may have no experience with voting system technology will be asked to participate. Each review team will consist of seven members and will include three components – document review, source code review, and red team penetration testing.

While all of the team members have not yet been identified, the two Principal Investigators for the project are Matthew Bishop, Professor in the Department of Computer Science and Co-Director of the Computer Security Laboratory at UC Davis, and David Wagner, Associate Professor in the Computer Science Division at UC Berkeley, with extensive experience in computer security, cryptography and electronic voting. He is a founding member of the ACCURATE center, which is funded by the National Science Foundation to research ways that technology can be used to improve voting.

The three source code review teams will include:

- Matt Blaze, Associate Professor of Computer Science, University of Pennsylvania, an internationally recognized expert in computer security, cryptography and the interplay of technology and public policy.
- Ed Felten, Professor of Computer Science and Public Affairs, Princeton University; Director of Center for Information Technology Policy, Princeton University; an internationally recognized expert in computer security and in information technology policy.
- Eric Rescorla, Chief Scientist of Network Resonance, Inc., a network security research and development company located in Palo Alto, California. His research interests focus on communications security and evidence-based analysis of security strategies. He is active in the standards community, serving as Internet Engineering Task Force ("IETF") Transport Layer Security ("TLS") working group chair, the editor of the TLS and HTTP over TLS specifications as well as numerous other IETF documents. He has served on the Internet Architecture Board since 2002.

The three red team penetration teams will include:

- Mark McLarnon, RABA Technologies, Columbia, Maryland, Co-author of *Trusted Agent Report, Diebold AccuVote TS Voting System for the Department of Legislative Services, Maryland General Assembly (2004)*.
- Harri Hursti, Independent Computer Security Consultant; Member, Task Force of The Brennan Center For Justice Voting Technology Assessment Project; Former CEO, F Secure PLC, Finland.
- Giovanni Vigna, Associate Professor, Computer Security Group, Department of Computer Science, UC Santa Barbara.

The three document review teams will include:

- Deirdre K. Mulligan, Director of the Samuelson Law, Technology & Public Policy Clinic, a Clinical Professor of Law at the UC Berkeley School of Law (Boalt Hall) and a member of the ACCURATE center. Before coming to Boalt, she was staff counsel at the Center for Democracy & Technology in Washington, D.C.
- Candice Hoke, Associate Professor of Law and Director, Center for Election Integrity, Cleveland State University.
- Joseph Lorenzo Hall, MA, MIMS, Ph.D. candidate in the Department of Information Management and Systems, UC Berkeley.

In addition to the teams described above, the accessibility of the voting systems will be assessed by a single team of two accessibility experts, headed by Noel Runyan of Campbell, California. Mr. Runyan is an electrical engineer and computer scientist with over 33 years experience in design and manufacturing of access technology systems for people with disabilities. For the last four years, he has concentrated on the accessibility of voting systems. The accessibility assessment will include test voting on each of the voting systems by volunteer voters representing a broad range of disabilities.

How will the review be conducted, how long will it take, and what will happen when the review is completed?

The Secretary of State will determine the order in which the voting systems are reviewed by a random selection that will be conducted in public using the same system that's used to randomly select the order candidates appear on the ballot.

Once the order of testing has been determined, if the system that has been randomly selected first has not been provided to the Secretary of State, the Secretary of State will move to the system that has been randomly selected second. That process will continue until there are three systems for the reviewers to begin testing the week of May 14. The Secretary of State reserves the right to begin decertification proceedings for any system that hasn't been provided to the Secretary of State's office.

Each top-to-bottom review team will evaluate at least two voting systems. If more than one version of a vendor's voting system is subject to review, the different versions will be assigned to the same team.

Each team will devote a minimum of three weeks to examine, test and prepare a draft report of findings for the Secretary of State to review and evaluate.

The entire top-to-bottom review process is designed to be completed by the end of July. The Secretary of State will hold a public hearing and invite public comments on the results of the review before making any final decisions on whether currently certified systems will continue to be certified for use in California and if so, what, if any, new conditions will be attached to their use.

What happens if a voting system vendor chooses not to participate in the review?

If a vendor chooses not to have its voting system reviewed, the Secretary of State has the option of initiating a decertification process immediately.

What will happen with new voting systems that receive federal approval?

If a system receives federal approval and is submitted to the Secretary of State by July 1, 2007, for certification in California, the Secretary of State will fully review that system using the same standards that will be applied in the top-to-bottom review.

What if a vendor chooses to opt out of having its existing system tested in anticipation of federal approval later this year for a replacement system?

Any system that isn't federally certified and submitted to the Secretary of State by July 1, 2007, will not be able to make it through the state certification process in time to be used in the 2008 elections. Therefore, if a vendor opts out of the top-to-bottom review but does *not* submit a replacement system for certification by July 1, 2007, the Secretary of State may either decertify or conditionally recertify the existing system for 2008 elections with additional restrictions, which may include the following:

For direct recording electronic (DRE) machines:

- A requirement that these machines shall only be used to provide accessibility for disabled voters.
- A mandatory 100% manual audit of the voter-verified paper audit trail to verify DRE voting results.
- Additional chain of custody controls and other security measures.

For paper-based systems:

- A requirement that all paper ballots must be centrally counted.
- A mandatory 10% manual audit of machine tallies.
- Additional chain of custody controls and other security measures.

Is the top-to-bottom review going to test entire voting systems or only the voting machines used in polling places?

The only way to make sure a voting system is properly recording and counting votes is to review a voting system from top to bottom. That's why the review will include all of the various machines used to *cast* ballots, as well as the systems used to *count* ballots, including vote tabulating devices, election management and tabulation programs, and associated firmware, software and peripheral devices.

What are the systems being tested?

The following certified voting systems are subject to examination and testing under the top-to-bottom review:

Diebold GEMS 1.18.24/AccuVote

- GEMS software, version 1.18.24
- AccuVote-TSX with AccuView Printer Module and Ballot Station firmware version 4.6.4
- AccuVote-OS (Model D) with firmware version 1.96.6
- AccuVote-OS Central Count with firmware version 2.0.12
- AccuFeed
- Vote Card Encoder, version 1.3.2
- Key Card Tool software, version 4.6.1
- VC Programmer software, version 4.6.1

ES&S Unity 2.4.3.1/AutoMARK

- Unity 2.4.3.1
 - Audit Manager v. 7.0.2.0
 - EDM v. 7.2.1.0
 - ESSIM v. 7.2.0.0
 - HPM v. 5.0.3.0
 - ERM v. 6.4.3.3
- Model 100 Precinct Scanner, version 5.0.0.0
- Model 550 Central Scanner, version 2.1.1.0
- Model 650 Central Scanner, version 1.2.0.0
- AutoMARK Information Management System (AIMS), version 1.0

- AutoMARK Voter Assist Terminal, version 1.0

ES&S City and County of San Francisco Voting System

- Optech III-P Eagle version HPS 1.30/APS 1.52
- Optech IV-C, Model 400 version 1.07(a) *(or version 1.08(c))*
- Unity version 2.4.3

ES&S InkaVote Plus Precinct Ballot Counter Voting System, version 2.1

- InkaVote Plus Precinct Ballot Counter with ADA unit, firmware version 1.10
- Unisyn Election Management System, version 1.1
 - Ballot Generation, version 1.1
 - Election Converter, version 1.1
 - Election Loader, version 1.1
 - Vote Converter, version 1.1
 - Vote Tabulation, version 1.1

Hart Intercivic System 6.1

- Ballot Now software, version 3.2.4
- BOSS software, version 4.2.13
- Rally software, version 2.2.4
- Tally software, version 4.2.8
- SERVO, version 4.1.6
- JBC, version 4.1.3
- eSlate/DAU, version 4.1.3
- eScan, version 1.2.0
- VBO, version 1.7.5
- eCM Manager, version 1.1.7

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- Tally software, version 4.3.10
- SERVO, version 4.2.10
- JBC, version 4.3.1
- eSlate/DAU, version 4.2.13
- eScan, version 1.3.14
- VBO, version 1.8.3
- eCM Manager, version 1.1.7

Sequoia WinEDS version 3.1.012/Edge/Insight/400-C

- WinEDS, version 3.1.012
- AVC Edge Model I, firmware version 5.0.24
- AVC Edge Model II, firmware version 5.0.24
- VeriVote Printer
- Optech 400-C/WinETP firmware version 1.12.4
- Optech Insight, APX K2.10, HPX K1.42
- Optech Insight Plus, APX K2.10, HPX K1.42

- Card Activator, version 5.0.21
- HAAT Model 50, version 1.0.69L
- Memory Pack Reader (MPR), firmware version 2.15

County of Los Angeles InkaVote Optical Scan Voting System

- Microcomputer Tally System (MTS) version 1.3.1
- LRC 1000 CPM Card Reader
- InkaVote Vote Recorder Device

Are any systems not scheduled to be reviewed at this point?

The DFM Mark-A-Vote system used by Lake, Madera, and Sonoma counties will not be reviewed in this round of testing, but the Secretary of State reserves the right to conduct a review of this system at a later date. The reason to exclude the DFM system at this point is based on the fact that there is a limited amount of time and money to conduct the voting system reviews, and the Mark-A-Vote is a paper-based system that is fully auditable.

Where will the top-to-bottom review be conducted?

Testing, examination and review activities, and analysis will be conducted onsite at the Secretary of State's facilities in Sacramento under secure conditions, with one exception. The review of documentation and source code may, upon express written authorization of the Secretary of State, be conducted at secure facilities of UC or other secure locations designated by UC.

Will this review be open to the public?

Given the proprietary nature of the systems being reviewed and laws that preclude the Secretary of State from releasing anything that may be considered proprietary in nature or contain trade secret information, it's unlikely that much of the actual physical red team testing and source code examination will be conducted in front of the public. A select number of county representatives who agree to sign the same non-disclosure agreements that each of the reviewers will be required to sign may be permitted to observe portions of the review process. Furthermore, as necessary and appropriate, the Secretary of State may, during the review process, ask top-to-bottom team members to publicly replicate any findings or discoveries they make on a voting system. In addition, the Secretary of State intends to maintain a website with up-to-date information on the status and progress of the review.

How much will the review cost and where will the funding come from to pay for it?

Approximately \$450 million has been spent or set aside to upgrade California's voting equipment over the past several years.

The total cost of the top-to-bottom review is estimated to be \$1.8 million, though that number could drop depending on the number of systems that are ultimately reviewed and the length of each review. Of the total amount, \$760,000 will come from the federal Help America Vote Act (HAVA) funding that was provided by the Legislature for voting machine source code review as part of the 2006-07 state budget. The remaining funding for the review will come from the voting system vendors that have voting systems certified for use in California and potentially from HAVA funding that may be apportioned as a part of the 2007-08 state budget. It's estimated the review of each system will cost approximately \$262,000, with the costs being split equally between the vendor and California's HAVA funding allocation. California law, as well as the certification agreements many of the voting system vendors signed with the former

Secretary of State as a condition of certification, allow the Secretary of State to review voting systems at any time and allow the Secretary of State to require vendors to pay for the cost of conducting the review. If a vendor chooses not to have its system reviewed as part of the top-to-bottom review, the overall project cost would drop, though the per system cost will rise slightly, since certain baseline costs (such as hiring a project manager and accessibility consultants) won't be reduced solely because the number of systems being reviewed is reduced.

What if a vendor wants a new system to be tested instead of or in addition to having its currently certified system tested?

All future testing and examination of voting systems submitted to the Secretary of State's office for certification will incorporate the security and accessibility testing used in the top-to-bottom review.

The costs for complete state examination of a voting system are estimated to be approximately \$350,000 to \$375,000. Should problems be discovered in testing that require system modification and retesting, these costs can increase. Vendors will be required to submit adequate funds to the Secretary of State to be held in an escrow account for the payment of the state's examination costs before any testing begins.

Vendors must complete all applicable federal testing and receive federal certification from the Election Assistance Commission (EAC) before they can submit an application for California certification of a voting system.

This examination plan and the testing protocols will be updated and further refined to incorporate lessons learned from the top-to-bottom review.

It is worth noting that other states have also begun a thorough state-level testing program, partially in response to the major flaws in the federal testing regime. For example, New York has also instituted comprehensive state testing, and voting system vendors will be expected to pay a comparable or greater amount of money to have their systems certified for use there.



DEBRA BOWEN | SECRETARY OF STATE | STATE OF CALIFORNIA
1500 11th Street, 6th Floor | Sacramento, CA 95814 | Tel (916) 653-7244 | Fax (916) 653-4620 | www.sos.ca.gov

May 9, 2007

Mr. Steve Pearson
Vice President, Certification
Election Systems & Software
11208 John Galt Boulevard
Omaha, NE 68137

Dear Mr. Pearson:

Thank you for your April 20, 2007, letter asking me to recertify the Elections Systems & Software (ES&S) voting system used to conduct Ranked Choice Voting (RCV) elections in San Francisco and to extend that approval through December 31, 2008. This system is comprised of the following components:

- Optech Eagle, APS version 1.52, HPS version 1.30
- Optech IV-C version 1.08(c)
- Unity: EDM, version 7.2.1.3; HPM, version 5.0.3.2; ERM, version 6.4.3.2b; Audit Manager, version 7.0.2.0; Optech Image Manager, version 3.2.0.0; DAM, version 5.0.3.0
- AutoMARK VAT, version 1.0
- AIMS, version 1.09

According to our records, the system that you are once again asking to have certified has already received three certifications on either a "one-time" or "one final time" basis to permit it to be used in California, despite the fact that it has never even been federally qualified to the federal voting system standards.

More specifically:

- This voting system was first certified on April 30, 2004, for use only in San Francisco's November 2004 election. As a condition of that certification, ES&S was required to submit the system for limited federal review by May 10, 2004.

Independent Testing Authorities (ITAs) Wyle and Ciber conducted that limited federal testing, and state certification testing was conducted simultaneously. The testing included a limited source-code review and functional testing to verify the correct application of the RCV algorithm.

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Mr. Steve Pearson
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Based on that testing, the system was recertified on July 12, 2004, to acknowledge the completion of the testing requirement. The restriction to use the system on a one-time only basis in San Francisco's November 2004 Election remained in place.

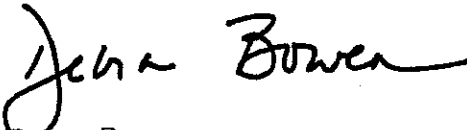
- After a public hearing on February 17, 2005, the Secretary of State's Elections Division Chief re-certified the system on March 7, 2005, to permit the RCV system to be used only through December 31, 2005.
- On August 3, 2006, the prior Secretary of State received an application from ES&S for recertification of the RCV system, requesting approval for "one-time, final use" of the system in the November 2006 Election.

In consideration of this application, OVSTA staff and the state consultants conducted testing of the system in Omaha in August 2006, and again in September 2006. Several anomalies were observed during that testing that were detailed in the Secretary of State's staff report from the examination of the system. Finally, because ES&S had requested only one-time approval, a volume test was not conducted on this system.

- On October 25, 2006, then-Secretary of State McPherson granted one-time approval to this RCV for use only in the November 2006 General Election, with the clear understanding that there would be no more extensions of certification for this system.

The documented problems with the ES&S system and the understanding you had with this office through several administrations that there would be no further extensions lead me to deny your request to administratively recertify this RCV system. You are certainly entitled to resubmit your request should the base Unity/Optech Eagle/Optech V-C system successfully complete the top-to-bottom review.

Sincerely,



Debra Bowen
Secretary of State

DB:elg:bm:lf

Cc: John Arntz, Director of Elections
Board of Supervisors, City and County of San Francisco