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CERTIFICATION OF AN OPTICAL SCAN AND DIRECT RECORDING ELECTRONIC VOTE TALLYING SYSTEM

In February 2006 Sequoia Voting Equipment of Oakland, CA requested the review and examination of enhancements to a Washington State certified optical scan and direct recording electronic vote tallying system.

Upon examination of the system, the Secretary of State finds the WinEDS system satisfies the requirements of Washington State law. This version of the system, NASED N-1-07-22-22-001 (2002), consists of:

- *Hardware*. comprised of:
  - Optech 400-C 3.00P;
  - AVC Edge 1 5.0.24 with VVPAT 4.3, Precinct Voting Machine (DRE);
  - AVC Edge 2 5.0.24 with VVPAT 4.3 and Edge Audio Unit 5.0, Precinct Voting Machine (DRE);
  - AVC Edge Card Activator device 5.0.21;
  - HAAT Model 50/100 1.0.69L;
  - Optech Insight & Insight Plus HPX K1.42, APX K2.10.

- *Software*. comprised of:
  - WinEDS; software version 3.1.012,
  - WinETP; software version 1.12.4,

On this date, under the provisions of RCW 29A.12.020, the Office of the Secretary of State hereby certifies the *"WinEDS Election System"*, submitted by Sequoia, and approves it for use as a direct recording electronic vote tabulation system and optical scan system by County Governments of the State of Washington when used in compliance with the procedures contained in this certification, accompanying Reports and Findings, and Washington State law.

Certified on this April 10, 2006

Deputy

SAM REED
Secretary of State

VOTING SYSTEMS REVIEW PANEL FINDINGS AND RECOMMENDATION

RECOMMENDATIONS
By consensus, the Voting Systems Review Panel adopts the recommendation of Secretary of State staff that the Sequoia System, federally tested and qualified by NASED under N-1-07-22-22-001 (2002), be certified for use in Washington state.

In addition to the recommendations in the staff report, the Voting Systems Review Panel adds the following procedures and restrictions to the use of this system:

> The user county must provide disposable ear muffs to voters using the audio headphone feature of the Sequoia Edge 1/2. This is also required by the FEC 2002 Voting Systems Standards.
>
> The Sequoia Edge 1/2 will be provided as an optional method of voting at the polling place and anyone who wants to use a paper ballot will be allowed to do so

There was no public testimony.

REPORT OF THE SECRETARY OF STATE
ON THE EXAMINATION AND EVALUATION OF AN
ELECTRONIC VOTE TALLYING SYSTEM

In February 2006 Sequoia Voting Equipment of Oakland, CA requested the review and examination of an electronic system under RCW 29A.12.020 and 29A.12.030. The hardware and software for this system are marketed under the name Sequoia WinEDS Election Data System (NASED # N-1-07-22-22-001 (2002)). The Software that administrates the election definition and election results components of the system is the WinEDS Version 3.1.012 System (2002), an upgrade of the previously certified version 3.0.134. The hardware components include the AVC Edge I/ 2 DRE Voting Machine Hardware, Firmware Release 5.0.24 with VeriVote (previously 4.3.320), the Card Activator, Firmware Release 5.0.21 (previously 4.3.320), HAAT Model 100 1.0.69L, Optech Insight & Insight Plus HPX K 1.42, APX K2.10 (previously HPX 1.40/APX 2.06), and the 400C Central Counter with WinETP 1.12.4 (previously 1.10.5).

The AVC Edge is a poll-site based, direct recording electronic (DRE) voting device with a touch screen interface which interprets touch in specified locations to interact with the voter. The AVC Edge also provides a voter verified paper audit trail (VVPAT) and an audio ballot with headphones for voters with visual disabilities The AVC Edge also comes with a stand that allows wheel chair access to the device.

The Insight is a poll-site based, hand fed, optical scan/mark sense ballot card reader mounted on a ballot box. The ballot box has internal moving parts that include a ballot path diverter that directs ballots into two different bins. One bin contains ballots that have been scanned and counted that are considered complete. The other bin is intended for ballots that have write-in votes on them. All offices on ballots deposited in the write-in bin are tallied with the exception of the office with the write-in vote.

At a poll site a card activator device is used by the poll workers to program a smart card with the precinct code for each voter. The smart card will activate the correct ballot type for the voter when inserted into an AVC Edge device. As part of the vote processing and ballot saving, the flash card is deactivated when the voter casts his or her ballot. The card is then returned to the poll worker for the next voter.

The results cartridge, a Flash ROM memory cartridge based upon the PCMCIA interface, is used to store the poll site specific election definition, ballot types and the primary copy of the election results for that device. In addition to the removable results cartridge, the AVC stores all vote data and audit log data redundantly to an internal audit trail device, also based upon Flash ROM technology.

The 400-C is a centralized, automatic feed, high volume optical ballot scan reader. The reader interprets the ballot and records precinct batch vote totals onto a personal computer. The personal computer is an IBM-compatible which is part of the Optech 400-C and interacts with a central computer that runs WinEDS. The vote totals are accumulated and reported from the central computer.

The WinEDS software is menu driven and allows the user to describe all aspects of an election. In preparation for ballot counting, the user enters office descriptions, positions, precinct combinations, ballot types, and any statistical information such as registered voter totals. The WinEDS software is used to produce and download the precinct specific programming onto the AVC Edge Results Cartridge. A personal computer running the WinEDS Election System serves as the central accumulator for countywide results. WinEDS can accumulate results by reading the AVC Edge Results Cartridge. There is no telephonic communication feature at this time.

An electronic vote tallying system must meet the following requirements (as set forth in WAC 434-335-040) in order to be approved for use in Washington State:

1. Secures to the voter secrecy in the act of voting;
2. Permits the voter to vote for any person for any office and upon any measure that he or she has the right to vote for;
3. Permits the voter to vote for all the candidates of one party or in part for the candidates of one or more other parties;
4. Correctly registers all votes cast for any and all persons and for or against any and all measures;
5. Except for functions or capabilities unique to this state, has been tested and approved by the appropriate independent testing authority approved by the United States election assistance commission.
6. Correctly counts votes on ballots on which the proper number of votes have been marked for any office or issue;
7. Ignores votes marked for any office or issue where more than the allowable number of votes have been marked, but correctly counts the properly voted portions of the ballot;
8. Accumulates a count of the specific number of ballots tallied for each precinct, total votes by candidate for each office, and total votes for and against each ballot measure on the ballot in that precinct; and
9. Produces precinct and cumulative totals in printed form.
10. Be capable of being secured with lock and seal when not in use;
11. Be secured physically and electronically against unauthorized access;
12. Not be connected to, or operated on, any electronic network including, but not limited to, internal office networks, the internet, or the world wide web. A network may be used as an internal, integral part of the vote tabulating system but that network must not be connected to any other network, the internet, or the world wide web; and
13. Not use wireless communications in any way.
14. A remote tabulating system must be able to create a disk, paper tape, or other physical record of ballot results prior to a telephonic transmission of results.

Testing and evaluation Sequoia WinEDS Election Data System with the AVC Edge 1/2 DRE and 400C Central Counter was conducted by Secretary of State staff, March 12th, 2005 in the Secretary of State's office at 520 Union in Olympia, WA. Examining the system for the Office of the Secretary of State was Paul Miller, Elections Information Manager. Also participating in the examination were members of the Snohomish County and Pierce County Elections staff, and

representatives from Sequoia. The vendor made a presentation of the WinEDS Election Data System and test elections were conducted using groups of test decks prepared at the direction of the Office of the Secretary of State and other ballots prepared by the examiners.

FINDINGS OF THE SECRETARY OF STATE

The request for certification is for an upgrade to systems certified by the Secretary of State July 2005. The primary significance for this state is bringing the AVC Edge to 2002 disability access standards and integrating the Insight into the WINEDS system.

The Sequoia WinEDS Election Data System with the AVC Edge 1 DRE and 400C Central Counter has been successfully used in Snohomish County for several years, as well as widely throughout the nation. In addition, The AVC Edge 2 DRE with VeriVote and 400C Central Counter was used successfully in the February 2006 elections by the five Sequoia counties. Pierce County has used the Insight in their polling places since September 2005.

Some concerns have been raised about the ability of a person with visual disabilities to use the VVPAT features of the Edge 1/2 DRE. The system does not provide a mechanism that allows the VVPAT to be verified by a person with visual disabilities. It does however produce the paper record simultaneously with the audio review of the ballot and allows the voter to verify his/her choices prior to recording the ballot. It is the understanding of staff that this meets the criteria of the Help America Vote Act as interpreted by the Department of Justice.

A voter who uses an incorrect marking tool to mark the ballot can create a problem. The equipment will not read a range of red ink. Inspection should be performed on each ballot to insure that black ink, or an ink or pencil that provides high contrast with the ballot color, was used by the voter in marking the ballot.

Additionally, the vote tallying equipment only scans the response areas next to the candidate name looking for votes. If a voter marks the ballot in a manner inconsistent with the function of the machine (for example, they mark the ballot by circling candidate names), the machine will fail to record an otherwise valid vote. A visual inspection of each ballot looking for odd marks will solve this issue.

The Edge provides a feature of convenience that allows a special ballot to be cast and optionally included in the election results after review by the elections staff. Special ballots are part of a “fail safe” process that allows an individual to cast a ballot in situations where poll workers are unable to establish the individual’s eligibility. The ballot is counted only after election staff is able to determine if the individual is eligible to vote on the ballot contests. The review of the feature determined that it can be used in a manner consistent with Washington State law and practice.

After an evaluation of the system as upgraded and a review of the accompanying documentation, staff believes the system and its components continue to meet current Washington State requirements as outlined in WAC 434-335-040. The documentation accompanying the application for certification shows the system with upgrades was fully reviewed by federally approved independent testing authorities prior to receiving NASED certification. The Sequoia WinEDS Election Data System with the AVC Edge 2 DRE and 400C Central Counter is certified for use in Illinois and California.

SECRETARY OF STATE STAFF RECOMMENDATION

Staff recommends the Sequoia WinEDS Election Data System with the AVC Edge 1/2 DRE and 400C Central Counter be certified for use in Washington State, provided the following procedures are used in conjunction with the system to assure proper tallying and results:

The system may be used as a central counting system if each ballot is manually inspected before tabulation. The inspection should look for improperly marked ballots, and ballots marked with non-standard marking colors.

It is the understanding of OSOS staff that the use of the Edge I is intended for use only as a means of duplicating mismarked or damaged ballots. It was tested and would be certified under that understanding.

Counties using this system must maintain a regular program of maintenance of the device as well as a consistent review of precinct election results to detect anomalies. This is required of all optical scan systems used in the state.

Counties intending to use the provisional ballot feature of the Edge system will seek review and approval of their proposed procedures with the Secretary of State prior to use.

Counties intending to use the Edge I/2 to duplicate damaged or mismarked ballots will seek review and approval of their proposed procedures with the Secretary of State prior to use.

The Flash ROM memory cartridge must be treated with the same accountability and security practices that are employed with unvoted and voted paper ballots.

Prior to every election the user county will test the touch screen device for calibration. This will be done to insure the touch screen responds correctly to the user's touch.

Prior to every election the user county must listen to the entire audio ballot and correct any mispronunciations.

It is recommended that the canvassing board of any county using this system adopt written procedures governing these processes. This equipment should be used with a device or devices capable of suppressing current surges, voltage fluctuations, and any other line disturbances.