



**EMERGENCY/PROVISIONAL CERTIFICATION OF AN UPGRADE TO AN OPTICAL  
SCAN AND DIRECT RECORDING ELECTRONIC VOTE TALLYING SYSTEM**

On April 3, 2008 Pierce County Auditor Pat McCarthy requested the Office of the Secretary of State approve Sequoia Voting Systems version 4.0 and associated software and firmware, for use in Pierce County on an emergency/provisional basis. This upgrade to Pierce County's existing software is necessary to conduct and tabulate Rank Choice Voting elections in the General Election in 2008, as required by Pierce County charter law.

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 consists of:

- *Hardware* comprised of:
  - Optech 400-C 3.00P
  - AVC Edge II 5.1.23 with VVPAT 1.02 and Edge Audio Unit 8.6, Accessible Voting Unit (DRE)
  - AVC Edge Card Activator device 5.1.22
  - Memory Pack Reader (MPR) 3.01 080422.0552
  
- *Software* comprised of:
  - WinEDS; software version 4.0.108
  - WinEDS Extended Services; software version 1.0.41
  - WinEDS Reporting; software version 4.0.41
  - WinETP; software version 1.16.6

On this date, under the provisions of WAC 434-335-200 and 210, the Office of the Secretary of State hereby provisionally certifies the "*WinEDS Election System 4.0*", submitted by Sequoia, without the Insight poll site tabulator, and approves it for use as a direct recording electronic vote tabulation system and optical scan system by Pierce County of the State of Washington when used in compliance with the procedures contained in this certification, accompanying Reports and Findings, and Washington State law. This provisional certification expires July 31, 2009.



Certified on this June 2, 2008

  
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SAM REED  
Secretary of State

## **NOTE: Accessible version of certificate.**

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SAM REED  
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## **VOTING SYSTEMS REVIEW BOARD FINDINGS AND RECOMMENDATION**

By consensus, the Voting Systems Review Board adopts the recommendation of Secretary of State staff that the Sequoia WinEDS v4 Election Data System with the Edge AVU and 400C Central Count tabulator be provisionally certified for use in Pierce County in Washington State, with an expiration of July 31, 2009. Regarding the Insight poll site tabulators, the Voting Systems Review Board prohibits the use of the Insight poll site tabulators for this provisional certification. WAC 434-335-212 addresses the concern about the legality of the Review Board adopting a recommendation concerning an emergency certification -

### **WAC 434-335-212 Temporary approval of emergency modification.**

Washington State Register filings since 2003

If, after reviewing the application, the secretary of state determines that an emergency exists, the examination and testing of the proposed modification is expedited to meet the needs of the upcoming election. The secretary of state develops a test plan and audit procedures to ensure the modified system does not adversely affect the lawful conduct, efficiency, accuracy, or security of the upcoming elections. **The secretary of state may consult with the voting systems review board.** The requirement that the modification be certified by an independent testing authority is waived for an emergency approval. An emergency approval of a modification must state the time period it is effective.

There was public testimony concerning the error found with the Insight poll site tabulators during the testing.

## **REPORT OF THE SECRETARY OF STATE ON THE EXAMINATION AND EVALUATION FOR A PROVISIONAL CERTIFICATION OF AN UPGRADE TO THE SOFTWARE OF SEQUOIA VOTING SYSTEM WINEDS**

The Pierce County Auditor applied for an Emergency/Provisional certification of Sequoia Voting System WinEDS v4 in accordance with WAC 434-335-200 in order to conduct a Rank Choice Voting (RCV) election for county offices as prescribed by county charter law effective for the 2008 General Election. Failure to obtain the updated software would materially affect the lawful conduct on the upcoming election in November, 2008.

Rank Choice Voting was approved by voters of Pierce County in November of 2006. It provides that the election of all county officials in Pierce County, except judges and the prosecuting attorney be conducted using rank choice voting by the election in 2008. All candidates appear directly on the general election ballot. Rank Choice Voting allows Pierce County voters to rank a first, second, and third choice candidate for a single office. Each RCV race will be listed three times across the ballot. The RCV contests are on a separate ballot card from the traditional races in the general.

The hardware remains the same from previously certified hardware; however, some of the firmware (computer coding that is embedded in the hardware device) has been upgraded to provide for RCV.

The WinEDS software is menu driven and allows the user to describe all aspects of an election. To provide for Rank Choice Voting features, including choice advancement and the RCV algorithm, a new module has been added into v4 – WinEDS Extended Services. Version 4 also has a new reporting module – WinEDS Reporting.

Testing and evaluation of Sequoia WinEDS v4 Election Data System with the Edge II DRE, Insight poll site tabulator and 400C Central Count tabulator was conducted by Secretary of State staff on May 13, 2008 through May 15, 2008 in the Pierce County Elections Center in Tacoma, WA. Examining the system for the Office of the Secretary of State was Patty Murphy, Voting Systems Support. Also participating in the examination were members of the Pierce County Elections staff, and representatives from Sequoia.

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. The following tests were performed:

### 400c Central Count Scanners

- A functional test of a primary election demonstrating the equipment's ability to properly handle a blank ballot, over-voted ballot, write-in ballot, defective ballot and properly marked ballots including handling of split precincts.
- A volume test of a primary election demonstrating the equipment's ability to count and tabulate a large quantity of ballots.
- A functional test of a general election with traditional contests and RCV contests (2<sup>nd</sup> ballot card) demonstrating the equipment's ability to properly handle a blank traditional

ballot, blank RCV ballot, over-voted traditional ballot, over-voted RCV ballot, write-in on a traditional ballot, write-in on an RCV ballot, defective traditional ballot, defective RCV ballot and properly marked traditional and RCV ballots including handling of split precincts.

- A volume test of a general election demonstrating the equipment's ability to count and tabulate a large quantity of absentee ballots, both traditional and RCV.
- Since Insights will not be used in the general election, a volume test of a general election demonstrating the equipment's ability to count and tabulate a large quantity of poll ballots, both traditional and RCV. Poll ballots need to be separated by precinct and run by indicating the precinct that is being scanned, either by a computer selection or by header cards.

#### Insight Poll Site Tabulators

- A functional test of a primary election demonstrating the equipment's ability to properly handle a blank ballot, over-voted ballot, write-in ballot, absentee ballot, defaced ballot, power outage and properly marked ballots including handling of split precincts.
- A volume test of a primary election demonstrating the equipment's ability to count and tabulate a large quantity of ballots, to print results by precinct on the Insight printer, and to merge the results with the central count and Edge results.

#### Edge Accessible Voting Units

- A functional test of a primary election demonstrating the equipment's ability to properly handle a blank ballot, under-voted ballot, over-voted ballot (not possible), write-in vote, cancelled vote (before and after printing the ballot on the VVPAT), power outage (battery backup), audio ballot, and properly marked ballots.
- A volume test of a primary election demonstrating the equipment's ability to count and tabulate a large quantity of ballots, and the ability to merge the results with the central count and Edge results.
- A functional test of an early vote Edge in a primary election to demonstrate the equipment's ability to count and tabulate ballots from all ballot styles in Pierce County.
- A functional test of a general election demonstrating the equipment's ability to properly handle a blank ballot, under-voted ballot, RCV un-voted rank, over-voted ballot (not possible), write-in vote, cancelled vote (before and after printing the ballot on the VVPAT), power outage (battery backup), audio ballot, and properly marked ballots for a traditional contest and RCV contest.
- A volume test of a general election demonstrating the equipment's ability to count and tabulate a large quantity of ballots, including RCV contests, and the ability to merge the results with the central count and Edge results.
- A functional test of an early vote Edge in a general election to demonstrate the equipment's ability to count and tabulate ballots from all ballot styles in Pierce County.
- A functional test verifying a simulation script cannot be run on an Edge that is in Election mode, and verifying results from a simulation cannot be read into WinEDS in Election mode.

#### WinEDS Merge and Reporting Services

- A test to merge and verify results from the volume tests in the Primary of the 650, Insight and Edge.
- A test to merge and verify results from the volume tests in the General of the 650 (poll and absentee results), and Edge.

#### WinEDS Extended Services to Support RCV

- A functional test of WinEDS Extended Services to demonstrate the ability to properly tabulate the Rank Choice Voted ballots as choices are advanced, losing candidates are eliminated, and ballots are exhausted until a winner is chosen.
- A volume test of WinEDS Extended Services to demonstrate the ability to tabulate RCV ballots from multiple tally types, merge the results, apply the advancement and algorithm process, and verify expected results as the winners are tabulated.

## **FINDINGS OF THE SECRETARY OF STATE**

During the volume test of the Insight poll site tabulators, a discrepancy in results led to the discovery of problem with resetting memory packs.

The problem occurred when one Insight machine was unplugged prematurely, that is, prior to completion of the zeroing process of the memory pack. No battery backup within the machine allowed the process to complete. The printed report, available on the tape, ended with REQUEST TO INITIALIZE VOTE TOTALS (All totals set to zero!)

Press 0 key if this is O.K., 9 if NOT

O.K.

Setting vote & statistical totals to zero

Then the machine was unplugged. The operator should have waited for the following text to appear:

```
h:mm:ss ALL TOTALS SET TO ZERO
TUE., MAY 13, 2008  h:mm:ss PM
Polling place #5973 with 10 precincts:
1063-1064 1629 1658-1660 1662-1664 1666
Current ballots cast = 000
Polls open, OK to read ballots in mixed mode
```

The result was a memory pack that wasn't completely zeroed out. The tabulated summary section, or Counter section on the pack was zeroed, so that when a new zero report was run the Insight showed all zeroes on the pack. However, there were cast vote records remaining on the pack that would later show up when merging results in WinEDS. [These cast votes records were added with the RCV addition to the programming. This reset problem was not a problem with past versions of the Insight firmware.]

A textual step by step process needs to be used by the operator performing the reset task on the memory pack to include a graphic that shows clearly that the task has been completed, with the operator signing off on this step.

The graphic showing completion of the reset step needs to remain on all tabulators that go to poll sites. The poll worker can verify the step has been completed before running the zero report.

The reset completion graphic should remain attached to the printout at the poll site.

The vendor plans to program a fix for a future release.

When the problem was discovered and reproduced, a procedure was detailed to prevent the problem in the future. In addition, a change was made to WinEDS when the memory packs are read into WinEDS. The program now immediately alerts the county staff if a memory pack was not reset properly. An additional procedure needs to be set up when the county staff encounters this alert so that the ballots associated with the faulty memory pack can be re-read into a tabulator.

The Insight volume test was re-run with properly reset memory packs, and the results were merged with 400c and Edge results, and the accumulated results were verified.

After an evaluation of the system as upgraded, staff believes the system and its components continue to meet current Washington State requirements.

## **SECRETARY OF STATE STAFF RECOMMENDATION**

Staff recommends the Sequoia WinEDS v4 Election Data System with the Edge AVU, Insight poll site tabulator and 400C Central Count tabulator be provisionally certified for use in Pierce County in Washington State, with an expiration of July 31, 2009, provided the following condition is met:

1) A procedure is used when resetting memory packs for the Insight:

When resetting Insight memory packs, a textual step by step process needs to be used by the operator performing the reset task on the memory pack to include a graphic that shows clearly that the task has been completed, with the operator signing off on this step.

The graphic showing completion of the reset step needs to remain on all tabulators that go to poll sites. The poll worker can verify the step has been completed before running the zero report.

The reset completion graphic should remain attached to the printout at the poll site.

A procedure needs to be set up to determine the steps to follow if the operator is alerted at central count that a memory pack was not properly reset before receiving new results.

OR

2) Insights are not used with this provisional certification.