Elections Division
Office of the Secretary of State

Report of the Secretary of State on the Examination of ES&S EVS 6.2.0.0 Voting System

December 2021

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Overview

Application

On December 3, 2021 ES&S submitted an application for Washington State Certification of EVS 6.2.0.0 . ES&S applied to certify the optical scan voting system software and hardware (version numbers listed under the National Certification section below). Copies of operating and maintenance manuals, training materials, technical and operational specifications were provided.

Current Voting System

This system is considered an digital scan voting system and contains ElectionWare and Express Run Off software with the ExpressVote universal voting device, DS850 & DS450 central tabulators, and DS200 precinct tabulator.

EVS 6.2.0.0 is currently awaiting final EAC certification approval so has not been certified in any states yet; however, applications have been submitted and certification is currently pending or planned in the following states: AZ, ID, IN, KY, MD, MT, MS, NE, NC, NJ, NV, OH, OR, PA, SC, SD, TN, TX, UT, VA, WV

Modified Voting System

EVS 6.2.0.0 is a modification to the currently state certified EVS 6.1.1.0 voting system. EVS 6.2.0.0 voting system adds new hardware (DS950) as well as security and enhancements to DS450, DS850, and Electionware software.

National Certification

After the completion of testing by a certified Voting System Test Lab (VSTL) the Election Assistance Commission (EAC) certified EVS 6.2.0.0 on December 23, 2021. The following hardware and software of the system have been approved by the EAC:

Software including:
- Electionware v. 6.2.0.0
- Event Log Service v. 3.0.0.0
- ExpressVote XL, 1.0, 2.1 v. 4.2.0.0
- ExpressTouch v. 4.2.0.0
- PaperBallot v. 6.2.0.0
- Removable Media Service v. 3.0.0.0

- Toolbox v. 4.0.0.0

Hardware including:
- DS200, Precinct Tabulator, Firmware v. 2.40.0.0, Hardware v. 1.2, 1.3
- DS850, Central Scanner, Firmware v. 4.1.0.0, Hardware v. 1.0
- DS950, Central Scanner, Firmware v. 4.1.0.0, Hardware v. 1.0
- DS450, Central Scanner, Firmware v. 4.1.0.0, Hardware v. 1.0
- ExpressVote, Universal Voting Device, Firmware v. 4.2.0.0, Hardware v. 1.0, 2.1

Testing & Inspection

Testing and evaluation of EVS 6.2.0.0 was conducted at the Elections Division in Olympia, WA on December 9, 2021. Examining the system for the Office of the Secretary of State was Stuart Holmes, Acting Elections Director, Fina Ormond, C&T Manager, Paul Raines and Kelly Moselange, C&T/SOC Specialist, and Jeff Records, Security Operations Center.

Due to EVS 6.2.0.0 going through Voting System Test Laboratory (VSTL) testing and submitted to the EAC for National Certification, a two phase testing program was developed and approved by Secretary of State staff for state certification testing.

Delivery acceptance testing of the equipment and software to determine if the correct model and versions of the equipment and software are delivered and that the equipment, software and system operate as documented by the vendor.

Election Results Testing to ensure that the equipment, software and system perform each of the functions required by federal, state and local law in order to administer an election from the beginning to the end.

Executive Summary of Findings of Secretary of State Staff

System Limitations

System characteristic	Boundary or limitation	Limiting system component	Notes or conditions
Max. precincts allowed in an election	9,900	Electionware	
Max. candidates allowed per election	10,000	Electionware	
Max. contests allowed in an election	10,000	Electionware	
Max. contests allowed per ballot style	500 or number of positions on ballot	N/A	
Max. candidates (ballot choices) allowed per contest	230	Electionware	
Max. 'vote for' per contest	230	Electionware	
Max. number of parties allowed	General election: 75 Primary election: 30 (including nonpartisan party)	Electionware	
Ballot formats	All paper ballots used in an election must be the same length. Votable paper ballots must contain the same number of rows.	Ballot scanning equipment	
Max. ballot styles	15,00	Electionware	
Max. ballots per batch	1,500	DS450/DS850	
Max. district types/groups	25 (arbitrary)	Electionware	
Max. districts of a given type	250 (arbitrary)		Excludes the ElectionWide Group which contains all precincts.
Max. reporting groups	14	Electionware	Includes 13 configurable reporting groups, plus the default Election Day.
Supported languages	• English • Spanish • Chinese • Korean • Japanese • Hindi • Bengali • Vietnamese • Tagalog • Creole • Russian • French • Gujarati* • Punjabi*	System configuration	* Only supported in Test Configuration C.

Voting System Accuracy

A testing environment was setup at the Election Division with a
DS950 central count scanner, DS850 central count scanner, a DS200 precinct tabulator
and a DS450 central count scanner. Ballots were run through the scanners and results
were compared to the predetermined testing matrix that exceeded the WAC
requirements for precinct and ballot styles included.

At each stage of the testing the results were compared to the expected results in the
test matrix and no errors or discrepancies were found.

Results Reporting

As ballots are run through the central count scanners, results are not being tabulated.
The result reports are also password protected and locked down in EVS 6.2.0.0.

Ballot Scanning

Ballots created using the ballot design software, ES&S Ballot Image Manager, do not
include any serial number or identification on the ballot in any way. All ballots for a
ballot style are printed from a single PDF file exported from the design software.

The EVS 6.2.0.0 software has no way of distinguishing if a ballot has been previously
scanned by the tabulators. ES&S recommends teams of 3 to use the tabulators (1 staff
jogging ballots, 1 staff loading ballots into scanner, 1 staff unloading ballots). In addition
to accountability and ballot handling procedures, this 3 person team would prevent
ballots from being scanned twice because each staff member only does one activity that
takes place on each end of the machine. The staff member unloading ballots would
never contact ballots that are being loaded and vice versa.

Presidential Primary

EVS 6.2.0.0 can perform all the functions necessary to comply with current state requirements
for the Presidential Primary. It can detect cross-party voting in a Presidential Primary without
manual intervention.

System Security

A hash value can be created that will ensure that the device's software has not changed since its
last install. This process would most likely be done by an administrator as the creation requires
pulling a series of files. ES&S provides users with instructions on how to create that hash code.

Write-ins

The EVS 6.2.0.0 software now has a way of entering and managing individual write-in votes as they are scanned by the tabulators. County staff can enter the name of any declared write-ins and export those in the cast vote record export.

Risk Limiting Audits

EVS 6.2.0.0 has the ability to export a cast vote record (CVR) for every ballot tabulation to support the ability to conduct a risk-limiting audit (RLA). That CVR extract would need to be imported into a RLA application in order to randomly select the appropriate ballot to audit. Additionally, the DS950, DS450 and DS850 have the ability to attach imprinters to print a ballot number to make retrieval of those ballots much easier. Of course, that ballot number would not be traceable back to any individual voter because it is printed on the ballot after the voter's identity has been separated from the ballot.

Conclusion

After an evaluation of the system as upgraded, staff believes the system and its components continue to meet current Washington State requirements for Presidential Primary, Special, Primary, and General Elections.