# WASHINGTON

## Secretary of State
### Elections Division

**Report of the Secretary of State
on the examination of**

## Election Systems & Software
## EVS 6.4.0.0

**November 2023**

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# Overview

### Application

On August 30, 2023, Election Systems & Software, LLC (ES&S) submitted an application for Washington State Certification of EVS 6.4.0.0. ES&S applied to certify functionality several components of the EVS voting system, specifically DS200, DS300, DS950, DS850, DS450, and ExpressVote hardware; and EVS 6.4.0.0 software. On November 28, 2023, ES&S submitted an amended application to include ExpressVote XL hardware. Copies of technical specifications were provided as part of the EAC's Technical Data Package.

### New Voting System

This is a modification of a currently certified voting system (EVS 6.2.0.0) to the State of Washington. EVS 6.4.0.0 is a modification of EVS 6.3.0.0, which is a modification of EVS 6.2.0.0. ES&S did not apply for certification of EVS 6.3.0.0; however, because the last baseline system certified for use in Washington was EVS 6.2.0.0, staff reviewed test reports and the scope of certification related to the Election Assistance Commission (EAC) certification for both EVS 6.3.0.0 and EVS 6.4.0.0. This system is a paper-based digital scan voting system with proprietary scanners.

### National Certification

After the completion of testing by a certified Voting System Test Lab (VSTL) the Election Assistance Commission certified EVS 6.4.0.0 on August 18, 2023. The hardware and software of the system that was approved by the EAC can be found in the EAC's Certificate of Conformance and Scope.

**Software**

- Electionware v. 6.4.0.0
- Event Log Service v. 3.0.0.0
- Removable Media Service v. 3.0.0.0

**Hardware**

- DS200, Precinct Tabulator, Firmware v. 3.1.0.0, Hardware v. 1.2, 1.3, 1.3.13
- DS300, Precinct Tabulator, Firmware v. 3.1.0.0
- DS950, Central Scanner, Firmware v. 4.3.0.0, Hardware v. 1.0
- DS850, Central Scanner, Firmware v. 4.3.0.0, Hardware v. 1.0
- DS450, Central Scanner, Firmware v. 4.3.0.0, Hardware v. 1.0
- ExpressVote, Voting Device, Firmware v. 4.3.0.0, Hardware v. 1.0, 2.1
- ExpressVote XL, Full Face Universal Voting System, Firmware v. 4.3.0.0 – Marker Only Mode

**Ancillary Systems**
Ancillary systems are not part of the certified configuration, but can be used in testing and can be used with the certified components of the system.

- ExpressLink v. 3.0.0.0

- ExpressVote Previewer v. 4.3.0.0
- PaperBallot v. 6.4.0.0
- Toolbox v. 4.4.0.0

### Testing & Inspection

Testing and evaluation of EVS 6.4.0.0 was conducted by Secretary of State staff at the Elections Division in Tumwater, Washington, on November 15, 2023. Examining the system for the Office of the Secretary of State were Les Bowen, Voting Systems Lead, and Callin Silvernail, Election Integrity Lead.

Due to EVS 6.4.0.0 receiving National Certification from the EAC, a two-phase testing program was developed and approved by Secretary of State 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. This test also included cryptographic hash checksum verification.

> **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.

> Ballots were manually voted using the accessible voting unit, ExpressVote and ExpressVote XL, and incorporated into the results to ensure proper tabulation.

## Executive Summary of Findings of Secretary of State Staff

### Voting System Accuracy

EVS 6.4.0.0 successfully and accurately tabulated all ballots including additional hand-marked and manually voted ballots from the accessible voting units. Results were manually audited and reviewed by a team of two.

### Results Reporting

EVS 6.4.0.0 was able to produce the state required reports for election results by precinct and cumulative.

### Presidential Primary

EVS 6.4.0.0 can perform all the functions necessary to comply with current state requirements for the Presidential Primary.

## System Limits

This table, containing information from the testing lab certification test report, depicts the limits of the EVS 6.4.0.0 system.

| Characteristics | Limit | Component |
| --- | --- | --- |
| Maximum precincts allowed in an election | 9,999 | Electionware |
| Maximum candidates allowed per election | 10,000 | Electionware |
| Maximum contests allowed in an election | 10,000 | Electionware |
| Maximum contests allowed per ballot style | 500 or number of positions on ballot | N/A |
| Maximum candidates (ballot choices) allowed per contest | 230 | Electionware |
| Max. number of parties allowed | General election: 75 Primary election: 30 (including nonpartisan party) | Electionware |
| Max. 'vote for' per contest | 230 | Electionware |
| Ballot formats | All paper ballots used in an election must be the same length. Voteable paper ballots must contain the same number of rows. | Ballot scanning equipment |
| Maximum ballot styles | 15,000 | Electionware |
| Maximum ballots per batch | 1,500 | DS450/DS850/DS950 |
| Maximum precinct types/groups | 25 (arbitrary) | Electionware |
| Maximum precincts of a given type | 250 (arbitrary) | Electionware |
| Max. reporting groups | 14 | Electionware |
| Max. connections | 18 client connections | Electionware |

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

## System Security

A cryptographic hash checksum can be generated to demonstrate that device software has not changed since installation. ES&S provides users with instructions on how to create checksum values.

Windows logs are used to track the use of the PCs by individual users in addition to the EVS audit logs. These logs can be printed.

### Physical Security

Central count scanners (DS450, DS850, and DS950), polling place scanners (DS200 and DS300), and accessible voting units (ExpressVote and ExpressVote XL) are capable of being independently secured, with keyed locks and numbered seals. Use of numbered seals should be coupled with logs that document authorized access.

The ES&S Electionware EMS environment must be physically secured in a locked area with security access controls in place. No access to this area should be permitted to unauthorized personnel.

### Write-Ins

The EVS 6.4.0.0 software supports 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.

### Accessible Voting

The ExpressVote is a touchscreen accessible voting unit (AVU), which can be used with the provided accessible switches or the voter's assistive technology, such as a sip-and-puff device. At the end of the session, the voter's choices are printed on a machine-readable ballot. The vote is not captured electronically, meaning this device is not a direct recording electronic (DRE) voting unit. Accordingly, this device does not need to be audited separately. The votes on ExpressVote will be a part of post-election audits, as the ballots can be mixed in with all other ballots in the scanning process.

The Expressvote XL is a touchscreen AVU that combines the accessibility functions of the ExpressVote with the ballot scanning and secure ballot storage functions of the DS200 and DS300 polling place scanners. As designed, the ExpressVote XL allows a voter to use the touchscreen to make their choices, prints the ballot, displays it for the voter in a shielded display area, prompts the voter to immediately have their ballot scanned for tabulation, and stores the paper ballot securely. However, election statutes and rules in Washington do not permit this configuration due to the requirements surrounding verification of voter signatures. Tests demonstrated the ballot scanner and storage functionality can be disabled, resulting in the printed ballot being provided to the voter without scanning it for tabulation. With these functions disabled, the ExpressVote XL is compliant for use in a voting center.

### Risk Limiting Audits

EVS 6.4.0.0 can export a cast vote record (CVR) for every ballot tabulation to support the ability to conduct a risk-limiting audit (RLA). Imprinters can be attached to the DS450, DS850, and DS950 to print a ballot number to facilitate retrieval of specific ballots. Ballot numbers are not traceable 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, staff believes the system and its components meet current Washington State requirements for Presidential Primary, Special, Primary, and General Elections.