



United States Election Assistance Commission



Certificate of Conformance

ES&S EVS 6.2.0.0

The voting system identified on this certificate has been evaluated at an accredited voting system testing laboratory for conformance to the *Voluntary Voting System Guidelines Version 1.0 (VVSG 1.0)*. Components evaluated for this certification are detailed in the attached Scope of Certification document. This certificate applies only to the specific version and release of the product in its evaluated configuration. The evaluation has been verified by the EAC in accordance with the provisions of the *EAC Voting System Testing and Certification Program Manual* and the conclusions of the testing laboratory in the test report are consistent with the evidence adduced. This certificate is not an endorsement of the product by any agency of the U.S. Government and no warranty of the product is either expressed or implied.

Product Name: EVS

Model or Version: 6.2.0.0

Name of VSTL: Pro V&V

EAC Certification Number: ESSEVS6200

Date Issued: December 23, 2021

Mona Harrington

Executive Director

Scope of Certification Attached

Manufacturer: *Election Systems & Software*
System Name: *EVS 6.2.0.0*
Certificate: *ESSEVS6200*

Laboratory: *Pro V&V*
Standard: *2005 VVSG*
Date: *12/23/2021*



Scope of Certification

This document describes the scope of the validation and certification of the system defined above. Any use, configuration changes, revision changes, additions or subtractions from the described system are not included in this evaluation.

Significance of EAC Certification

An EAC certification is an official recognition that a voting system (in a specific configuration or configurations) has been tested to and has met an identified set of Federal voting system standards. An EAC certification is **not**:

- An endorsement of a Manufacturer, voting system, or any of the system's components.
- A Federal warranty of the voting system or any of its components.
- A determination that a voting system, when fielded, will be operated in a manner that meets all HAVA requirements.
- A substitute for State or local certification and testing.
- A determination that the system is ready for use in an election.
- A determination that any particular component of a certified system is itself certified for use outside the certified configuration.

Representation of EAC Certification

Manufacturers may not represent or imply that a voting system is certified unless it has received a Certificate of Conformance for that system. Statements regarding EAC certification in brochures, on Web sites, on displays, and in advertising/sales literature must be made solely in reference to specific systems. Any action by a Manufacturer to suggest EAC endorsement of its product or organization is strictly prohibited and may result in a Manufacturer's suspension or other action pursuant to Federal civil and criminal law.

System Overview:

The ES&S EVS 6.2.0.0 voting system is a modification of the EVS 6.1.0.0 voting system, certified on September 24, 2019. The EVS 6.2.0.0 voting system contains modifications to Electionware, ExpressVote versions 1.0 and 2.1, ExpressVote XL, ExpressTouch, DS200, DS450, DS850, Event Log Service (ELS), Removable Media Service (RMS), and introduces the DS950, a high-speed central count scanner and tabulator. EVS 6.2.0.0 is composed of software applications, central count location devices and polling place devices with accompanying firmware, and COTS hardware and software:

Electionware® election management software is an end-to-end election management software application that provides election definition creation, ballot formation, equipment

configuration, result consolidation, adjudication, and report creation. Electionware is composed of five software groups: Define, Design, Deliver, Results, and Manage.

ExpressVote® XL is a hybrid paper-based polling place voting device that provides a full-faced touch screen vote capture interface that incorporates the printing of the voter's selections as a cast vote record and tabulation scanning in a single unit.

ExpressTouch® is a DRE voting system which supports electronic vote capture for all individuals at the polling place.

ExpressVote® Hardware 1.0 is a hybrid paper-based polling place voting device that provides touch screen vote capture that incorporates the printing of the voter's selections as a cast vote record to be scanned for tabulation in any one of the ES&S precinct or central scanners.

ExpressVote® Hardware 2.1 is a hybrid paper-based polling place voting device that provides touch screen vote capture that incorporates the printing of the voter's selections as a cast vote record to be scanned for tabulation in any one of the ES&S precinct or central scanners. There are two separate versions of ExpressVote HW2.1: version 2.1.0.0 and version 2.1.2.0 (6.4 & 6.8).

DS200® is a polling place paper-based voting system, specifically a digital scanner and tabulator that simultaneously scans the front and back of a paper ballot and/or vote summary card in any of four orientations for conversion of voter selection marks to electronic cast vote records (CVR).

DS450® is a central scanner and tabulator that simultaneously scans the front and back of a paper ballot and/or vote summary card in any of four orientations for conversion of voter selection marks to electronic CVRs.

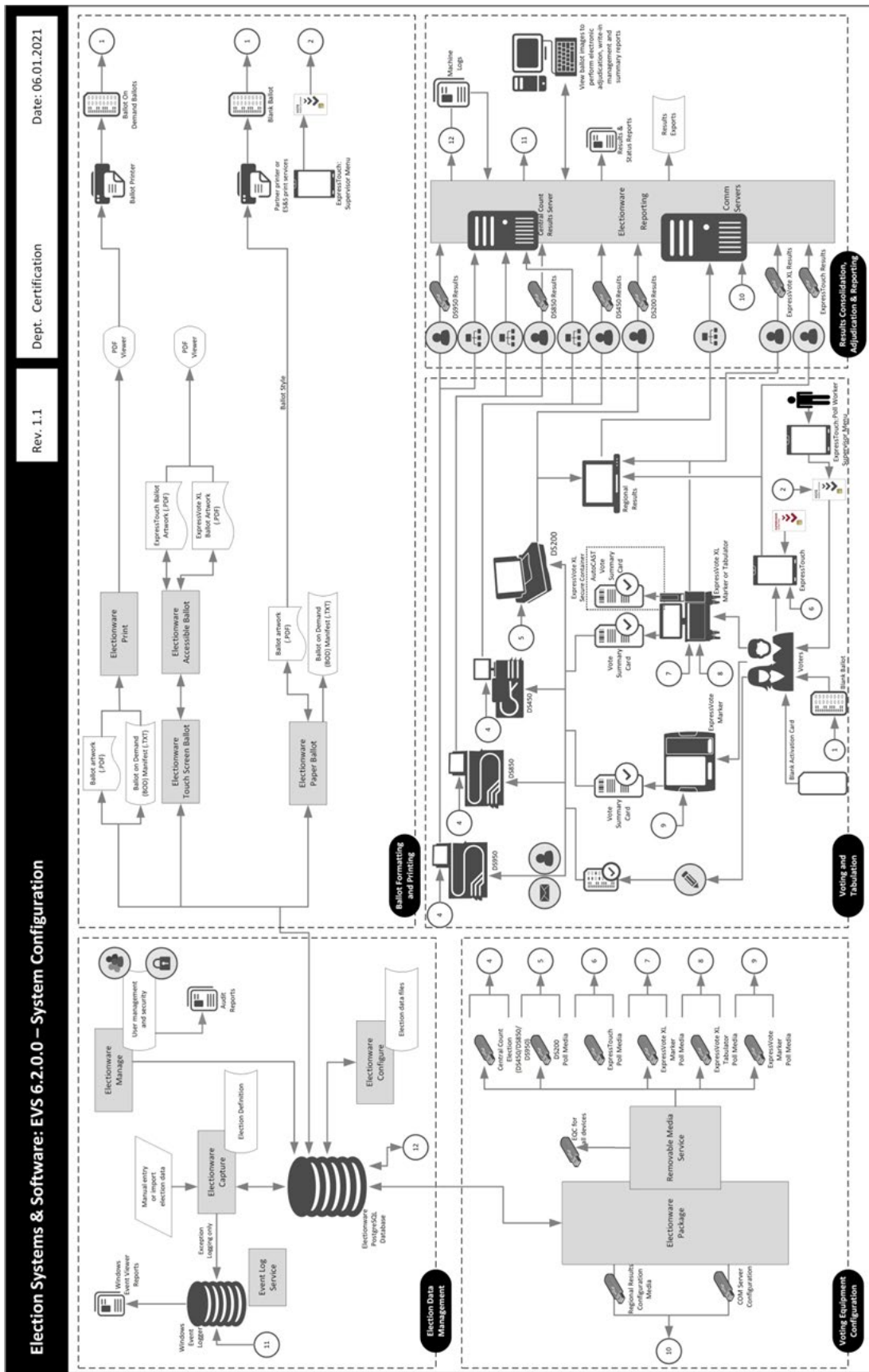
DS850® is a central scanner and tabulator that simultaneously scans the front and back of a paper ballot and/or vote summary card in any of four orientations for conversion of voter selection marks to electronic CVRs.

DS950® is a central scanner and tabulator that simultaneously scans the front and back of a paper ballot and/or vote summary card in any of four orientations for conversion of voter selection marks to electronic CVRs.

Event Log Service (ELS) monitors and logs users' interactions with the election management system. Events that happen when a connection to the database is not available are logged to the Windows operating system log through the ELS.

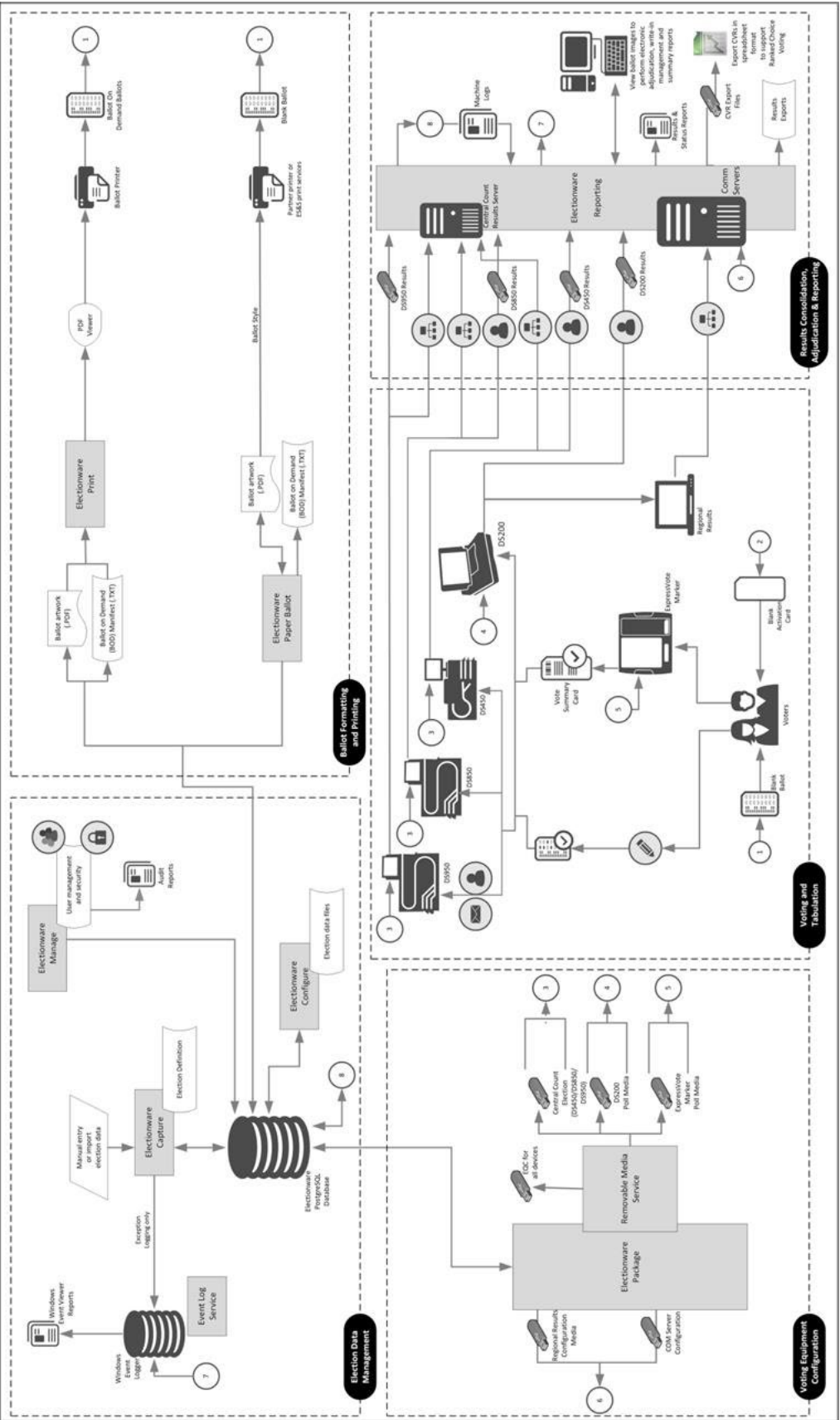
Removable Media Service (RMS) is a utility that runs in the background of the Windows operating system. RMS reads specific information from any attached USB devices so that an ES&S application such as Electionware can use that information for media validation purposes.

System Diagram



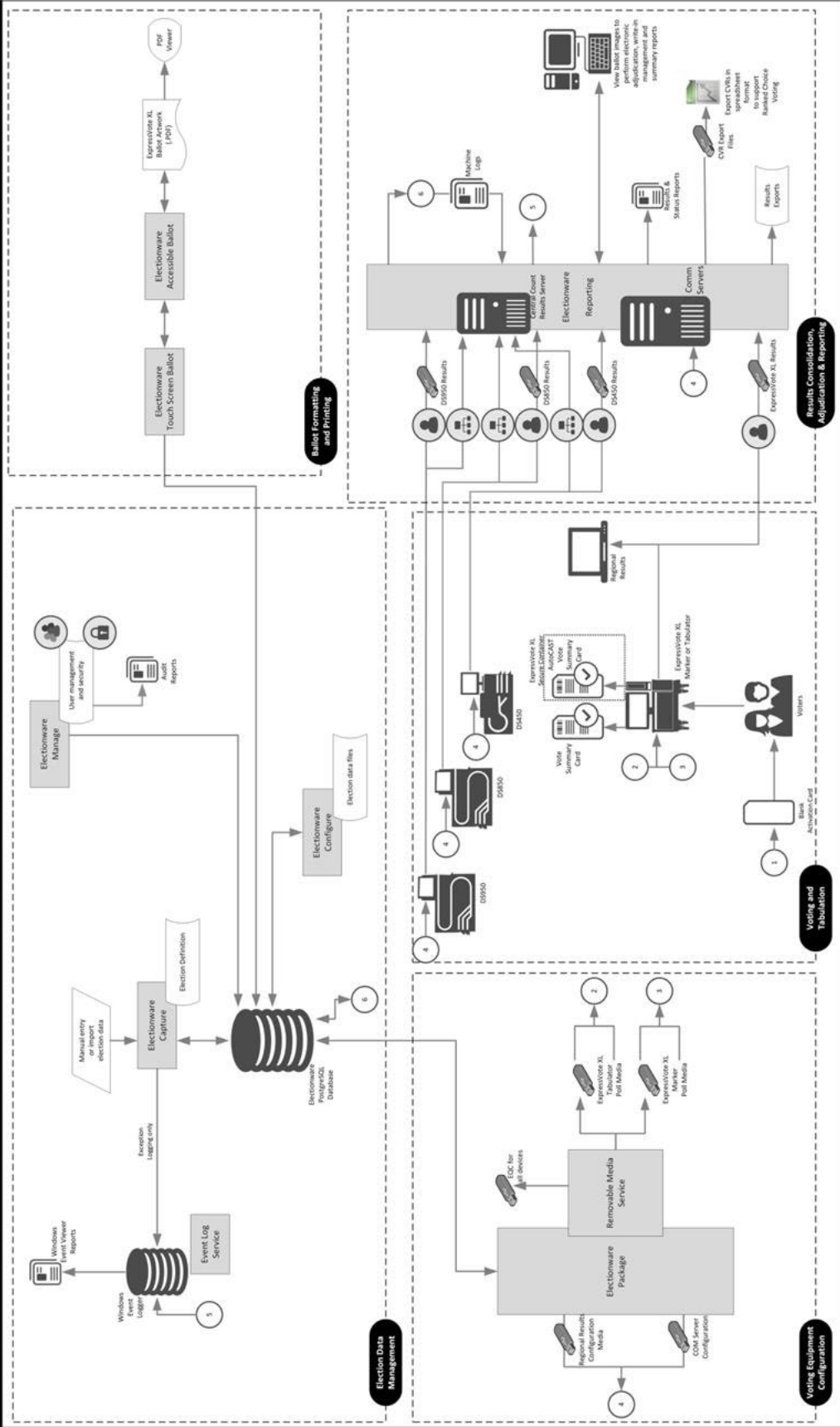
EVS 6.2.0.0 System End-to-End Functionality Overview

Election Systems & Software: EVS 6.2.0.0 – System Configuration – Configuration B



EVS 6.2.0.0 System Configuration B Overview

Election Systems & Software: EVS 6.1.0.0 – System Configuration – Configuration C



EVS 6.2.0.0 System Configuration C Overview

Certified System before Modification (If applicable):

EVS 6.1.0.0

Changes addressed by modification

Hardware

New Hardware

- DS950: introduced the new high-speed central count scanner and tabulator.
- USB Flash Drives (USB 3.0): introduced modernized USB capabilities (4GB, 8GB, 16GB, 32GB) and a flash drive with high capacity for central count results export capability (256GB).

Hardware Modifications

- ExpressVote HW1.0: updated inrush current limiting harness.
- ExpressVote HW2.1: updated the following components to replace end-of-life parts: main battery pack, inrush current limiting harness, CMOS battery.
- ExpressVote XL: updated and added vote session light cord length, vote session light extension cable, and 15' Power Cord.
- ExpressTouch: updated the following components to replace end-of-life parts: new power supply, new battery firmware.

New Configuration Options

- ExpressVote Dual Express Cart: The Dual Express Cart is a rolling cart with four locking caster wheels. It is capable of holding up to two ExpressVote units securely in place. One unit is positioned for standing voters while the other is ADA-compliant to accommodate a seated voter. Each of the stations on this cart includes deployable privacy screens.
- ExpressVote Ben Franklin Voting Booth: The ExpressVote Ben Franklin Booth is an ADA-compliant way to deploy the ExpressVote for use as marker. The voting booth can be positioned to accommodate both standing and seated voters.
- DS200 Ballot Trolley: The DS200 ballot trolley is a secure way to transport scanned ballots after the close of voting. The ballot trolley is designed to be used with the collapsible ballot box configuration.
- DS200 Ballot Tote Bag: The DS200 ballot tote bag allows secure transportation of scanned ballots after the close of voting. The ballot tote bag is designed to be used with the plastic ballot box configuration.

Software/Firmware

New Software

- Regional Results: a standalone application that is deployed at Regional Sending Sites. This application establishes a secure connection to the central results transfer server at the jurisdiction headquarters and reads the election media with results from the different poll places. For more efficient results reporting, the Regional Results software

then securely transmits the encrypted unofficial results collection files over a customer dedicated network.

- Impacted products: Election Management System

Cross-Product Changes

- Dual Factor Authentication: implemented YubiKey USB keys for dual factor authentication (optional).
 - Impacted products: Election Management System
- Windows 10 Formatted USB Flash Drives: added support for use of blank USB flash drives formatted by Windows 10 that contain the hidden System Volume Information folder.
 - Impacted products: ExpressVote HW1.0, ExpressVote HW2.1, ExpressVote XL, DS200, DS450, DS850
- Operating System Synchronization: upgraded and synchronized the firmware operating system across all hardware products
 - Impacted products: ExpressVote HW1.0, ExpressVote HW2.1, ExpressVote XL, DS200, DS450, DS850
- Copyright Dates: updated splash screens on hardware and software products to remove copyright information
 - Impacted products: Electionware, ExpressVote HW1.0, ExpressVote HW2.1, ExpressVote XL, DS200, DS450, DS850
- Risk-limiting Audit (RLA): system option to print a unique audit ID in text and human readable form on each vote summary card or ballot. Tabulators capture the audit ID for Risk Limiting Audits.
 - Impacted products: Electionware, ExpressVote HW1.0, ExpressVote HW2.1, ExpressVote XL, DS200, DS450, DS850
- High-Capacity Barcode: Updated Electionware to support an alternative high-capacity barcode, in which a single barcode can contain selection data for up to 105 candidate selections. Tabulators can scan cards using either the existing or high-capacity barcode option.
 - Impacted products: Electionware, ExpressVote HW1.0, ExpressVote HW2.1, ExpressVote XL, DS200, DS450, DS850
- Results Integrity Validation: Updated the DS200 to generate a hash value on the results collection file. This code can be compared with the hash value Electionware creates when the DS200 results are loaded to verify the results loaded into Electionware are the same results collected from the DS200.
 - Impacted products: DS200, Electionware
- Central Count Batch Level Results: Modified the batch management screen on the Central Count tabulators to add the ability to print the results for any selected batch for auditing purposes.
 - Impacted products: DS450, DS850

- Hide Checkboxes: Expanded an option to hide on-screen selection target boxes to the ExpressTouch and ExpressVote platforms.
 - Impacted products: ExpressVote HW1.0, ExpressVote HW2.1, Electionware, ExpressTouch
- Multi-card Vote Session: Implemented a multi-card vote session for the ExpressVote as a Marker and the ExpressVote XL as a Marker.
 - Impacted products: ExpressVote HW1.0, ExpressVote HW2.1, Electionware, ExpressVote XL
- Editable Text on Printed Vote Summary Cards: Add the ability to customize the "No Selection" text field used when a voter chooses to undervote a contest on the ExpressVote HW1.0, ExpressVote HW2.1, or ExpressVote XL.
 - Impacted products: ExpressVote HW1.0, ExpressVote HW2.1, Electionware, ExpressVote XL
- Verification Process Improvements: Redesigned and simplified Verification Procedures for all Equipment and Software. Added procedures for Data Communication server and COTS equipment. Added an option to export files to a USB flash drive for validation.
 - Impacted products: ExpressVote HW1.0, ExpressVote HW2.1, Electionware, ExpressVote XL, ExpressTouch, DS200, DS450, DS850
- Review Box: Implemented the use of the Review Box feature on the ExpressVote XL that allows provisional voters to mark their card but blocks it from being cast on a tabulator.
 - Impacted products: Electionware, ExpressVote XL
- Barcode Position Cross-out: Implemented the printing of a cross-out graphic in any possible barcode position not filled by a standard selection barcode.
 - Impacted products: ExpressVote HW1.0, ExpressVote2.1, ExpressVote XL
- Synchronization: Synchronized firmware with common code stack changes.
 - Impacted products: ExpressVote HW1.0, ExpressVote2.1, ExpressTouch, ExpressVote XL

DS200

- Process Improvements: Systemic changes/improvements were made to handle data more efficiently thus decreasing the time needed to complete time required to open poll and close poll.

DS850

- Ballot Management: Updated firmware to include the Advanced Ballot Tracking feature to sync with DS450 capabilities.

Electionware

- Configuration: Card Print Properties are now configured in the Touch Screen Ballot module.

- Card Stub Support: Implemented the ability to support an activation card with a stub inserted into the ExpressVote and scanned without the stub on the tabulators with a single coding event.
- Performance Improvement: Introduced overall performance improvements, including improved report generation times to keep up with industry results reporting expectations, for reporting in the Results module.
- Database: Updated the Postgres Authentication from MD5 to SCRAM-SHA-256.
- Compatibility: Updated the Java Advanced Imaging API to ensure compatibility with future Java releases.
- Security: Updated PostgreSQL to v11.9 to take advantage of security and performance updates. Updated ActiveMQ Classic v5 to v5.16.0 to take advantage of security and performance updates.
- Initial and Review Boxes: Added enhancement to prevent users from placing content in panels reserved for Judges' Initial and Review boxes.

Event Log Service

- Synchronization: Updated software package tools to sync between proprietary software products.

ExpressVote XL

- Ballot Activation: This enhancement enables customers to use ExpressVote XL activation cards pre-printed with a designated party barcode.

Removable Media Service

- Synchronization: Updated software package tools to sync between proprietary software products.

Mark definition:

ES&S' declared mark recognition for the DS200, DS450, DS850 and DS950 is a mark across the oval that is 0.02" long x 0.03" wide at any direction.

Tested Marking Devices:

Bic Grip Roller Pen

Language capability:

System supports English, Spanish, Chinese, Korean, Japanese, Hindi, Bengali, Vietnamese, Tagalog, Creole, Russian, French, Gujarati (one configuration only), Punjabi (one configuration only)

Proprietary Components Included:

This section provides information describing the components and revision level of the primary components included in this Certification.

System Component	Software or Firmware Version	Hardware Version	Model	Comments
Electionware	6.2.0.0			Election management software that provides end-to-end election management activities
ES&S Event Log Service (ELS)	3.0.0.0			Logs users' interactions with EMS
Regional Results	1.4.0.0			Standalone application that is deployed at Regional Sending Sites.
Removable Media Service	3.0.0.0			Utility that runs in the background of the Windows operating system
DS200	2.40.0.0	1.2, 1.3		Precinct count tabulator that scans voter selections from both sides of the ballot simultaneously
DS200 Ballot Box		1.0, 1.1	98-00009	Collapsible ballot box
DS200 Ballot Box		1.2, 1.3, 1.4, 1.5	57521	Plastic ballot box
DS200 Tote Bin		1.0	00074	Tote bin ballot box
DS200 Ballot Trolley			212516	Ballot Trolley Ballot Box
DS200 Metal Ballot Box		1.0, 1.1, 1.2	76245	Metal Tote Bag
DS200 Ballot Tote Bag			60	Ballot Tote Bag
DS450	4.1.0.0	1.0		Central count scanner and tabulator
DS450 Cart			3002	
DS850	4.1.0.0	1.0		Central count scanner and tabulator
DS850 Cart			6823	
DS950	4.1.0.0	1.0		Central count scanner and tabulator
DS950 Cart			7898	
ExpressVote XL	4.2.0.0	1.0		Hybrid full-faced paper-based vote capture and selection device and precinct count tabulator
ExpressTouch	4.2.0.0	1.0		DRE
ExpressVote HW1.0	4.2.0.0	1.0		Hybrid paper-based vote capture and selection device
ExpressVote HW2.1	4.2.0.0	1.0		Hybrid paper-based vote capture and selection device
ExpressVote Rolling Kiosk		1.0	98-00049	Portable Voting Booth
Voting Booth			98-00051	Stationary Voting Booth
ExpressVote Ben Franklin Booth			00380	Sitting and Standing Voting Booth
ExpressVote Dual Express Cart			41402	Portable Voting Booth
Voting Booth Workstation			87035	Stationary Voting Booth

System Component	Software or Firmware Version	Hardware Version	Model	Comments
Quad Express Cart			41404	Portable Voting Booth
MXB ExpressVote Voting Booth			95000	Sitting and Standing Voting Booth
ExpressVote Single Table			87033	Voting Table for One Unit
ExpressVote Double Table			87032	Voting Table for Two Units
ADA Table			87031	Voting Table for One Unit
Universal Voting Console (UVC)		2.0	98-00077	Detachable ADA support peripheral
Tabletop Easel			14040	Portable Voting Booth
ExpressTouch Voting Booth			98-00081	Stationary Voting Booth
SecureSetup	3.0.0.6			Proprietary Hardening Script

COTS Software

Manufacturer	Application	Version
Microsoft Corporation	Windows Server 2016	WIN2016_6200.iso
Microsoft Corporation	Windows 10 Enterprise LTSC	WIN10_6200.iso
Microsoft Corporation	Windows Server 2016 DataComm (ISO)	WIN2016DC_6200.iso
Microsoft Corporation	Windows Updates (Software updates included in the OS image)	Package date: WIN10_6200.iso-04/06/2021 WIN2016_6200.iso-04/06/2021 WIN2016DC_6200.iso-04/06/2021
Microsoft Corporation	Windows Defender Antivirus (Configured within the OS image)	N/A
Dell	TPM Utility	DellTpm2.0_Fw1.3.2.8_V1_64.exe
Cisco	Rommon	asa5500-firmware-1118.SPA
Cisco	RV340 VPN router firmware	1.0.03.22
Cisco	5506-X Security appliance firmware	9.16.1
Cisco	5508-X Security appliance firmware	9.16.1
Cisco	FPR-1010 Security appliance firmware	9.16.1
Kiwi Syslog Server	Remove Event Log Monitoring	9.6.7
Amyuni	PDF Converter Printer Driver	5.5
Cerberus	FTP Server – Enterprise	11.3.4 (64-bit)
Sumatra	PDF	3.1.2 (64-bit)
RSA Security	BSAFE Crypto-C ME for Windows 32-bit	4.1
Yubico Login for Windows	Dual Factor Authentication YubiKey USB keys for dual factor authentication (optional)	2.0.3
WS FTP	Secure file transfer	12.7.0

COTS Hardware

Manufacturer	Hardware	Model/Version
Dell	EMS Server	PowerEdge T430, T630
Dell	Data Comm Server	PowerEdge T430
Dell	EMS Client or Standalone Workstation	Latitude 5580, OptiPlex 5040, 5050, 7020
Dell	Trusted Platform Module (TPM) Chip 1.2 and 2.0 (optional)	M48YR
Toshiba	Regional Results Client	Tecra A50-C
Innodisk	USB EDC H2SE (16GB) for ExpressVote 2.1	DEEUH1-16GI72AC1SB
Delkin	USB Embedded 2.0 Module Flash Drive	MY08TQJ7A-RA000-D / 8GB
Delkin	USB Embedded 2.0 Module Flash Drive	MY16TNK7A-RA042-D/ 16 GB
Delkin	2.0 USB Flash Drive (512MB, 1GB, 2GB, 4GB, 8GB)	N/A
Delkin	3.0 USB Flash Drive (4GB, 8GB, 16GB, 32GB, 256GB)	N/A
Delkin	Compact Flash Memory Card (1GB)	CE0GTFHHK-FD038-D
Delkin	Secure Compact Flash Card (2GB)	CE02TLQCK-FD000-D
Delkin	Compact Flash Memory Card Reader/Writer	6381
Delkin	CFAST Card (2GB, 4GB)	N/A
Delkin	CFAST Card Reader/Writer	DDREADER48
Delkin	USB Flash Drive BitLocker 32.2 MB Storage for Security Key (optional)	N/A
Cisco Firewall	Regional Results Security Firewall	ASA 5506-X, ASA 5508-X, ASA FPR-1010
Cisco Router	Regional Results VPN Router	RV340
Lexar	CFAST Card Reader/Writer	LRWCR1TBNA
YubiKey USB drive	Dual Factor Authentication	5A Series
CardLogix	Smart Card	CLXSU128kC7/ AED C7
SCM Microsystems	Smart Card Writer	SCR3310
Avid	Headphones	86002
Zebra Technologies	QR Code Scanner (integrated)	DS457-SR20009, DS457-SR20004ZZWW
Symbol	QR Code Scanner (external)	DS9208
Dell	DS450 Report Printer	S2810dn
OKI	DS450, DS850 and DS950 Report Printer	B431dn, B431d, B432DN
OKI	DS450 and DS850 Audit Printer	Microline 420
APC	DS450 UPS	Back-UPS Pro 1500, Smart-UPS 1500
APC	DS850 UPS	Back-UPS RS 1500, Pro 1500
CyberPower	DS950 UPS	OR1500PFCLCD
Tripp Lite	DS450 Surge Protector	Spike Cube
Seiko Instruments	Thermal Printer	LTPD-347B
NCR/Nashua	Paper Roll	2320
Fujitsu	Thermal Printer	FTP-62GDSL001, FTP-63GMCL153

Manufacturer	Hardware	Model/Version
HP Inkjet	Ink Cartridge for DS450/DS850 Ballot Number Imprinting	87002
TDS	Ink Cartridge for DS200 Ballot Stamping	2278

System Limitations

This table depicts the limits the system has been tested and certified to meet.

System Characteristic	Boundary or Limitation	Limiting Component
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 # of positions on ballot	N/A
Max. 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
Max. ballot styles	15,000	Electionware
Max. ballots per batch	1,500	DS450/DS850/DS950
Max. precinct types/groups	25 (arbitrary)	Electionware
Max. precincts of a given type	250 (arbitrary)	Electionware
Max. reporting groups	14	Electionware

Component Limitations:

ExpressVote

1. Capacities exceed all documented limitations for the ES&S election management, vote tabulation and reporting system. For this reason, election management system and ballot tabulator limitations define the boundaries and capabilities of the ExpressVote system as the maximum capacities of the ExpressVote are never approached during testing.
2. Does not offer primary support based on the ES&S definition of Open Primary, which is the ability to select a party and vote based on that party.
3. ExpressVote vote summary cards using the high-capacity barcode are limited to 630 or fewer oval positions.
4. Does not support Massachusetts Group Vote.
5. Does not support Universal Primary Contest.

6. Does not support Multiple Target Cross Endorsement.
7. Does not support Reviewer or Judges Initials boxes.
8. Does not support Team Write-in.
9. ExpressVote does not support 19-inch cards with ballot stubs.

ExpressVote XL

1. Capacities exceed all documented limitations for the ES&S election management, vote tabulation and reporting system. For this reason, election management system and ballot tabulator limitations define the boundaries and capabilities of the ExpressVote XL system as the maximum capacities of the ExpressVote XL are never approached during testing.
2. Does not offer primary support based on the ES&S definition of Open Primary, which is the ability to select a party and vote based on that party.
3. ExpressVote XL vote summary cards using the high-capacity barcode are limited to 630 or fewer oval positions.
4. Does not support Massachusetts Group Vote.
5. Does not support Universal Primary Contest.
6. Does not support Judges Initials boxes.
7. In a general election, ExpressVote XL screen can hold 32 party columns if set up as columns or 16 party rows if set up as rows.
8. Does not support Team Write-in.
9. ExpressVote XL does not support 19-inch cards with ballot stubs.
10. ExpressVote XL does not support 17-inch cards with ballot stubs.

ExpressTouch

1. Capacities exceed all documented limitations for the ES&S election management, vote tabulation and reporting system. For this reason, election management system limitations define the boundaries and capabilities of the ExpressTouch system as the maximum capacities of the ES&S ExpressTouch are never approached during testing.
2. Does not offer open primary support based on the ES&S definition of Open Primary, which is the ability to select a party and vote based on that party.
3. Does not support Massachusetts Group Vote.
4. Does not support Universal Primary Contest.
5. Does not support Multiple Target Cross Endorsement.
6. Does not support Team Write-in.

Electionware

1. Electionware software field limits were calculated based on an average character width for ballot and report elements. Some uses and conditions, such as magnified ballot views or combining elements on printed media or ballot displays, may result in field

limits (and associated warnings) lower than those listed. Check printed media and displays before finalizing the election.

2. Ballot Images function is limited to 250 districts per export.
3. Support the language and special characters listed above in Supported Languages section. Language special characters other than those on this list may not appear properly when viewed on equipment displays or reports.

Electionware Paper Ballot

1. The paper ballot code channel, which is the series of black boxes that appear between the timing track and ballot contests, limits the number of available ballot variations depending on how a jurisdiction uses this code to differentiate ballots. The code can be used to differentiate ballots using three different fields defined as: Sequence (available codes 1-16,300), Type (available codes 1-30), or Split (available codes 1-18).
2. For paper ballots, if Sequence is used as a ballot style ID, it must be unique election-wise and Split code will always be 1. In this case, the practical style limit would be 16,300.
3. The ExpressVote activation card has a ballot ID consisting of three different fields defined as: Sequence (available codes 1-16,300), Type (available codes 1-30), or Split (available codes 1-18).
4. Grid Portrait and Grid Landscape ballot types are New York specific and not for general use.

DS200

1. Configured for an early vote station does not support precinct level results reporting. An election summary report of tabulated vote totals is supported.
2. Storage limitation for write-in ballot images is 3,600 images. Each ballot image includes a single ballot face, or one side of one page.
3. Write-in image review requires a minimum 1GB of onboard RAM.
4. To successfully use the write-in report, ballots must span three or more vertical columns. If the column is greater than 1/3 of the ballot width (two columns or less), the write-in image will be too wide to print on the tabulator report tape.

Functionality

2005 VVSG Supported Functionality Declaration

Feature/Characteristic	Yes/No	Comment
Voter Verified Paper Audit Trails		
VVPAT	No	
Accessibility		
Forward Approach	Yes	
Parallel (Side) Approach	Yes	
Closed Primary		
Primary: Closed	Yes	
Open Primary		

Feature/Characteristic	Yes/No	Comment
Primary: Open Standard (provide definition of how supported)	No	
Primary: Open Blanket (provide definition of how supported)	No	
Partisan & Non-Partisan:		
Partisan & Non-Partisan: Vote for 1 of N race	Yes	
Partisan & Non-Partisan: Multi-member ("vote for N of M") board races	Yes	
Partisan & Non-Partisan: "vote for 1" race with a single candidate and write-in voting	Yes	
Partisan & Non-Partisan "vote for 1" race with no declared candidates and write-in voting	Yes	
Write-In Voting:		
Write-in Voting: System default is a voting position identified for write-ins.	Yes	
Write-in Voting: Without selecting a write in position.	Yes	
Write-in: With No Declared Candidates	Yes	
Write-in: Identification of write-ins for resolution at central count	Yes	
Primary Presidential Delegation Nominations & Slates:		
Primary Presidential Delegation Nominations: Displayed delegate slates for each presidential party	No	
Slate & Group Voting: one selection votes the slate.	No	
Ballot Rotation:		
Rotation of Names within an Office; define all supported rotation methods for location on the ballot and vote tabulation/reporting	Yes	
Straight Party Voting:		
Straight Party: A single selection for partisan races in a general election	Yes	
Straight Party: Vote for each candidate individually	Yes	
Straight Party: Modify straight party selections with crossover votes	Yes	
Straight Party: A race without a candidate for one party	Yes	
Straight Party: "N of M race (where "N">1)	Yes	
Straight Party: Excludes a partisan contest from the straight party selection	Yes	
Cross-Party Endorsement:		
Cross party endorsements, multiple parties endorse one candidate.	Yes	
Split Precincts:		
Split Precincts: Multiple ballot styles	Yes	
Split Precincts: P & M system support splits with correct contests and ballot identification of each split	Yes	
Split Precincts: DRE matches voter to all applicable races.	Yes	
Split Precincts: Reporting of voter counts (# of voters) to the precinct split level; Reporting of vote totals is to the precinct level	Yes	It is possible to list the number of voters.
Vote N of M:		
Vote for N of M: Counts each selected candidate, if the maximum is not exceeded.	Yes	
Vote for N of M: Invalidates all candidates in an overvote (paper)	Yes	
Recall Issues, with options:		
Recall Issues with Options: Simple Yes/No with separate race/election. (Vote Yes or No Question)	No	

Feature/Characteristic	Yes/No	Comment
Recall Issues with Options: Retain is the first option, Replacement candidate for the second or more options (Vote 1 of M)	No	
Recall Issues with Options: Two contests with access to a second contest conditional upon a specific vote in contest one. (Must vote Yes to vote in 2 nd contest.)	No	
Recall Issues with Options: Two contests with access to a second contest conditional upon any vote in contest one. (Must vote Yes to vote in 2nd contest.)	No	
Cumulative Voting		
Cumulative Voting: Voters are permitted to cast, as many votes as there are seats to be filled for one or more candidates. Voters are not limited to giving only one vote to a candidate. Instead, they can put multiple votes on one or more candidate.	No	
Ranked Order Voting		
Ranked Order Voting: Voters can write in a ranked vote.	Yes	Ballots can be formatted for Ranked Order Voting and the system supports export of CVR data for processing of Ranked Order Voting Rounds
Ranked Order Voting: A ballot stops being counted when all ranked choices have been eliminated	Yes	Ballots can be formatted for Ranked Order Voting and the system supports export of CVR data for processing of Ranked Order Voting Rounds
Ranked Order Voting: A ballot with a skipped rank counts the vote for the next rank.	Yes	Ballots can be formatted for Ranked Order Voting and the system supports export of CVR data for processing of Ranked Order Voting Rounds
Ranked Order Voting: Voters rank candidates in a contest in order of choice. A candidate receiving a majority of the first choice votes wins. If no candidate receives a majority of first choice votes, the last place candidate is deleted, each ballot cast for the deleted candidate counts for the second choice candidate listed on the ballot. The process of eliminating the last place candidate and recounting the ballots continues until one candidate receives a majority of the vote	No	

Feature/Characteristic	Yes/No	Comment
Ranked Order Voting: A ballot with two choices ranked the same, stops being counted at the point of two similarly ranked choices.	Yes	Ballots can be formatted for Ranked Order Voting and the system supports export of CVR data for processing of Ranked Order Voting Rounds
Ranked Order Voting: The total number of votes for two or more candidates with the least votes is less than the votes of the candidate with the next highest number of votes, the candidates with the least votes are eliminated simultaneously and their votes transferred to the next-ranked continuing candidate.	No	
Provisional or Challenged Ballots		
Provisional/Challenged Ballots: A voted provisional ballots is identified but not included in the tabulation, but can be added in the central count.	Yes	
Provisional/Challenged Ballots: A voted provisional ballots is included in the tabulation, but is identified and can be subtracted in the central count	Yes	
Provisional/Challenged Ballots: Provisional ballots maintain the secrecy of the ballot.	Yes	
Overvotes (must support for specific type of voting system)		
Overvotes: P & M: Overvote invalidates the vote. Define how overvotes are counted.	Yes	
Overvotes: DRE: Prevented from or requires correction of overvoting.	Yes	
Overvotes: If a system does not prevent overvotes, it must count them. Define how overvotes are counted.	Yes	
Overvotes: DRE systems that provide a method to data enter absentee votes must account for overvotes.	Yes	
Undervotes		
Undervotes: System counts undervotes cast for accounting purposes	Yes	
Blank Ballots		
Totally Blank Ballots: Any blank ballot alert is tested.	Yes	
Totally Blank Ballots: If blank ballots are not immediately processed, there must be a provision to recognize and accept them	Yes	
Totally Blank Ballots: If operators can access a blank ballot, there must be a provision for resolution.	Yes	
Networking		
Wide Area Network – Use of Modems	No	
Wide Area Network – Use of Wireless	No	
Local Area Network – Use of TCP/IP	No	
Local Area Network – Use of Infrared	No	
Local Area Network – Use of Wireless	No	

Feature/Characteristic	Yes/No	Comment
FIPS 140-2 validated cryptographic module	Yes	
Used as (if applicable):		
Precinct counting device	Yes	DS200, ExpressTouch, ExpressVote XL
Central counting device	Yes	DS450, DS850 and/or DS950

Baseline Certification Engineering Change Orders (ECO)

This table depicts the ECOs certified with the voting system:

Change ID	Date	Component	Description	Inclusion
ECO 1089	10/08/20	ExpressVote XL	Updated Bios, Assembly and PCB modifications	De minimis
ECO 1100	10/15/20	ExpressVote v1.0	EV 1.0 Copy Right Information	De minimis
ECO 1103	12/22/20	ExpressVote v2.1	Update CMOS battery	De minimis
ECO 1106	02/19/21	ExpressVote 2.1	Add conductive gasketing to exit guide	De minimis
ECO 1110	07/28/21	DS850	Added alternate manufacturer for camera cable	De minimis
ECO 1111	04/05/21	Electionware	Java class update ElectionAudioDataStore	De minimis