United States Election Assistance Commission

Certificate of Conformance

ES&S EVS 6.0.6.0

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: 6.0.6.0

Name of VSTL: Pro V&V

EAC Certification Number: ESSEVS6060

Date Issued: December 28, 2021

Mona Harrington

Executive Director

Scope of Certification Attached

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 6.0.6.0 voting system is a modification to the previously EAC-certified EVS 6.0.4.0. The DS450 and DS850 components are modifications of the previously EAC-certified EVS 6.1.0.0. The EVS 6.0.6.0 voting system contains modifications to Electionware, ExpressVote versions 1.0 and 2.1, ExpressVote XL, DS200, DS450, DS850, Event Log Service (ELS), Removable Media Service (RMS), and introduces the DS950, a high-speed central count scanner and tabulator. EVS 6.0.6.0 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.

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, and tabulation scanning into a single unit. ExpressVote HW2.1 is capable of operating in either marker or tabulator mode, depending on the configurable mode that is selected in Electionware.

There are two separate versions of the ExpressVote hardware version 2.1: 2.1.0.0 and version 2.1.2.0 (6.4 & 6.8). Please note that all future references to ExpressVote HW 2.1 as used throughout the document refers to both hardware versions.

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.

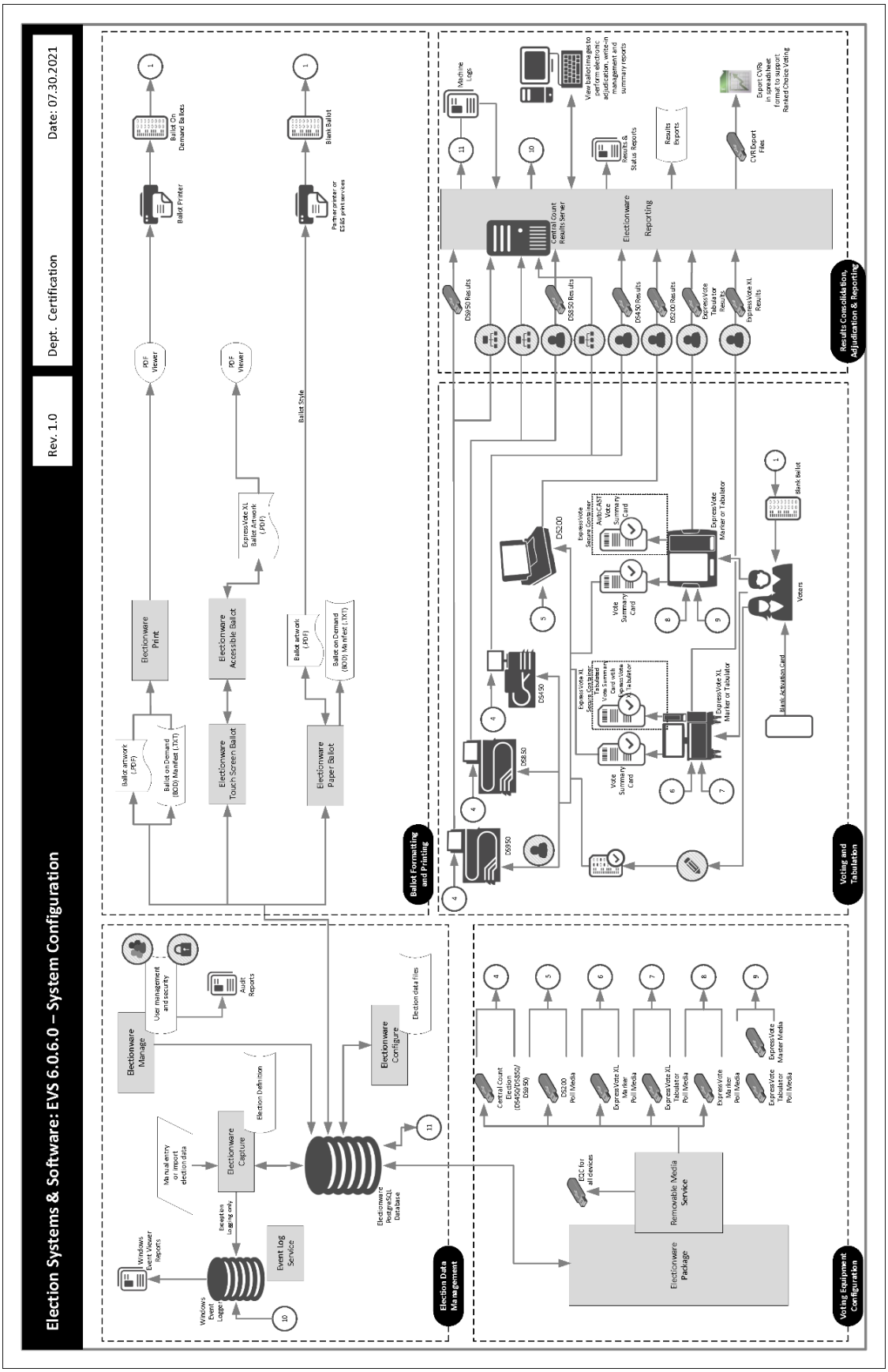
DS850® is a central scanner and tabulator that simultaneously scans the front and back of a paper ballot and/or vote summary card in any of four orientations for conversion of voter selection marks to electronic CVRs.

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.

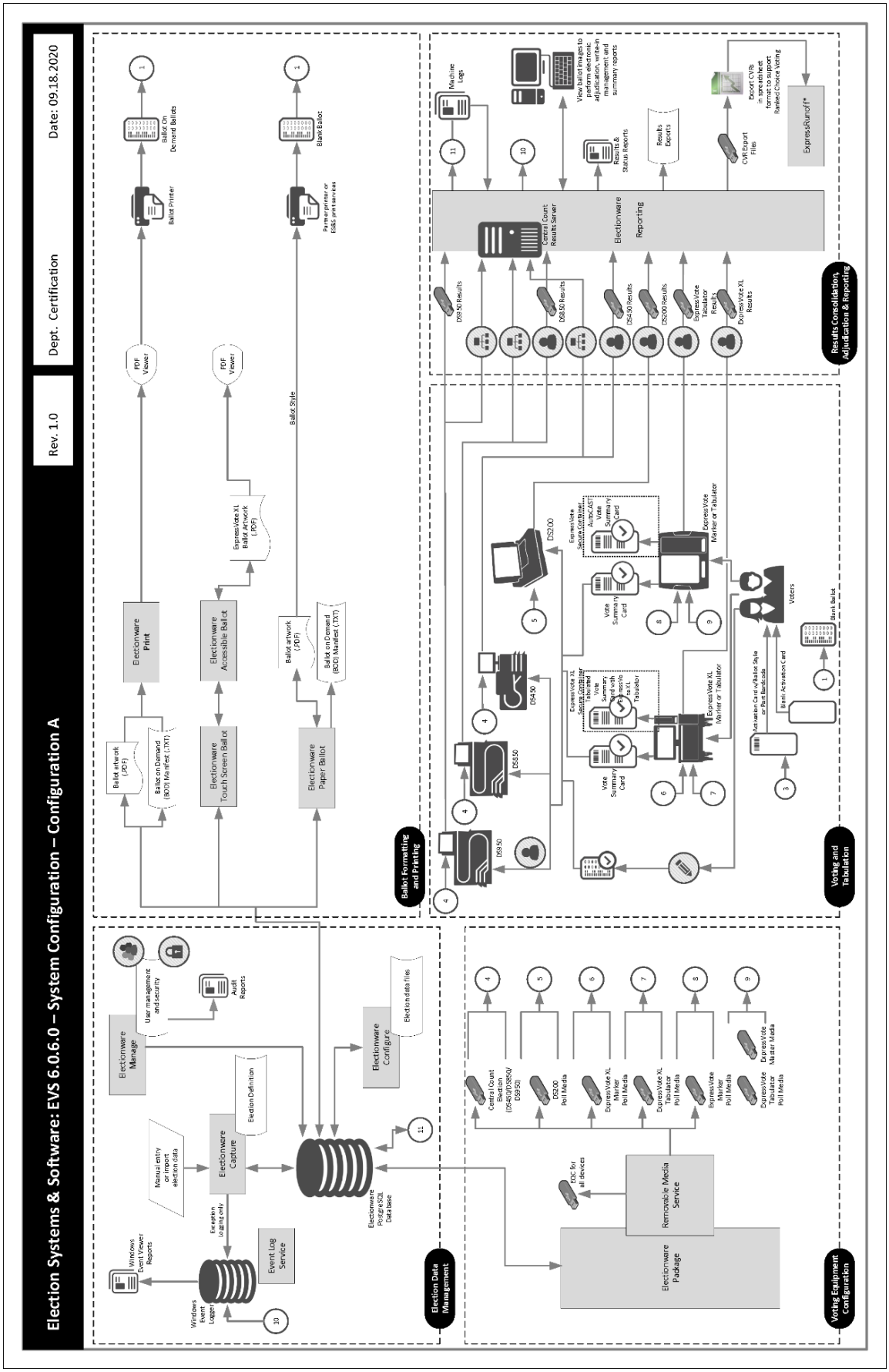
Event Log Service (ELS) monitors and logs users' interactions with the election management system. Events that happen when a connection to the database is not available are logged to the Windows operating system log through the ELS.

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.

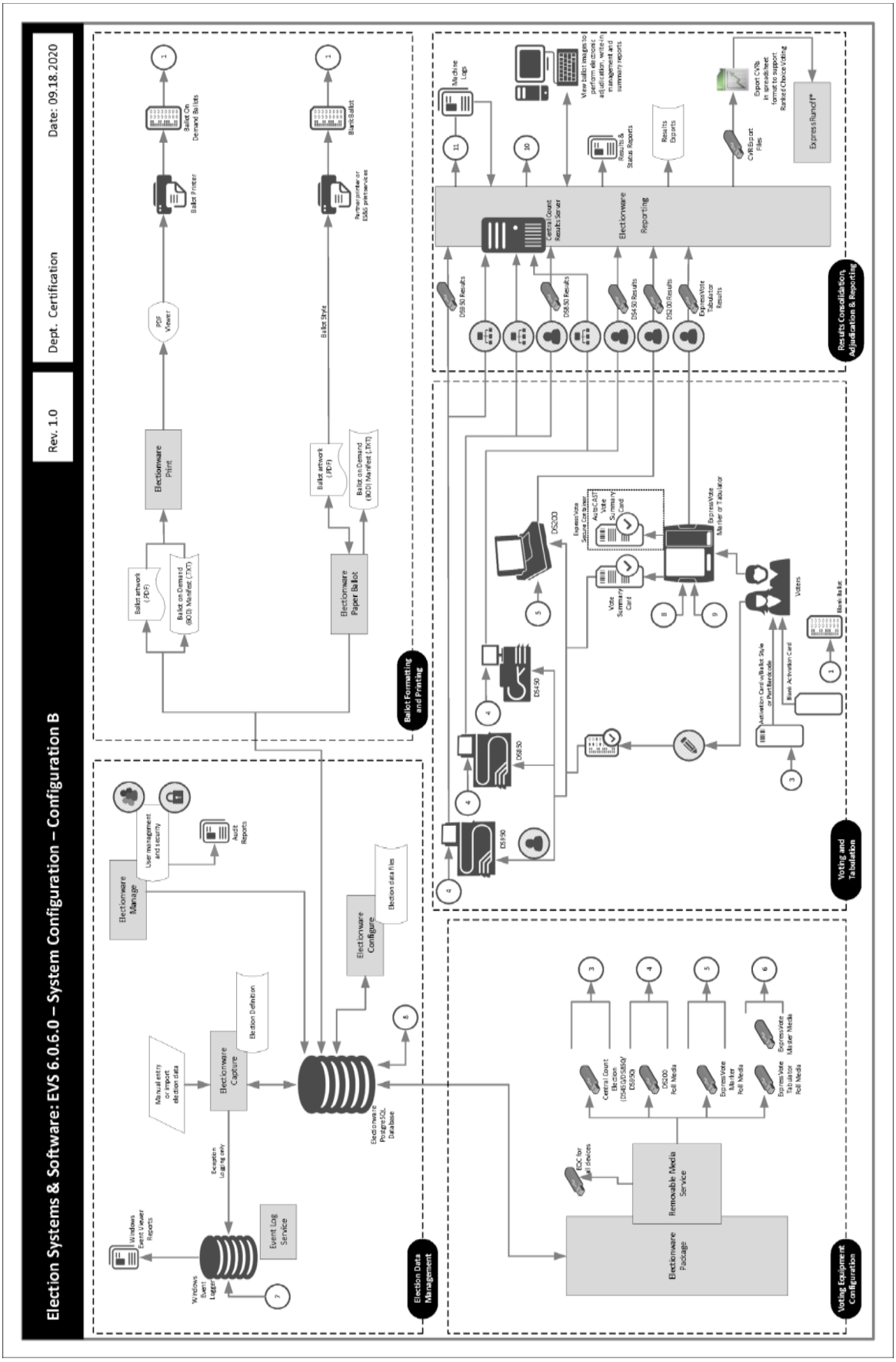
System Diagram



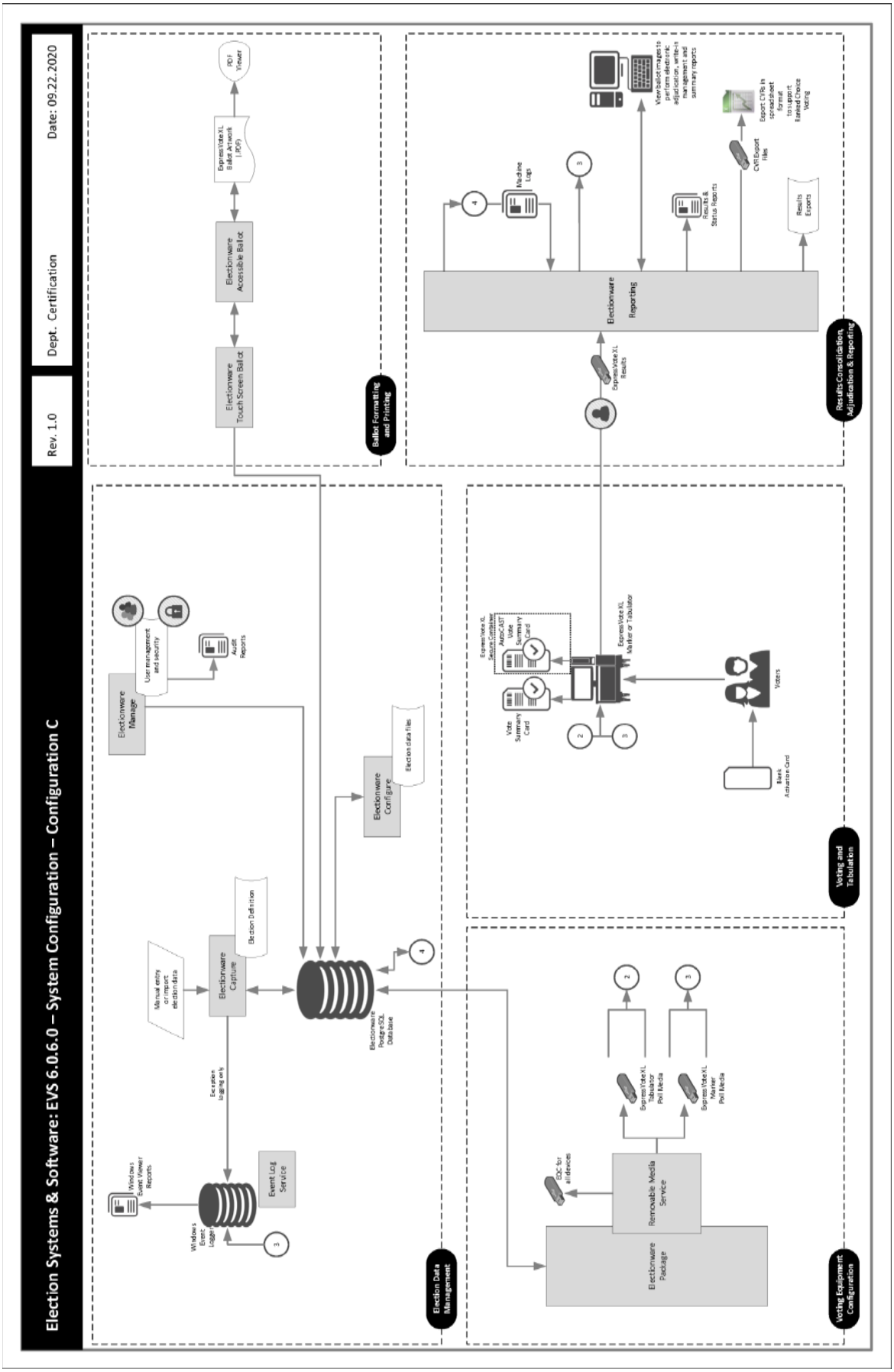
EVS 6.0.6.0 System End-to-End Functionality Overview



EVS 6.0.6.0 System Configuration A Overview



EVS 6.0.6.0 System Configuration B Overview



EVS 6.0.6.0 System Configuration C Overview

Certified System before Modification (If applicable):

EVS 6.1.0.0
EVS 6.0.4.0

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, 32BG)
- Introduces a flash drive with high capacity for central count results export capability (256GB).

Hardware Modifications

- ExpressVote HW2.1: updated the following components to replace end-of-life parts: main battery pack, CMOS battery.

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

Cross-Product Changes

- Operating System: Upgraded the operating system from Microsoft Windows 7 to Microsoft Windows 10 Enterprise LTSC and from Microsoft Windows Server 2008 R2 to Microsoft Windows Server 2016. This upgrade moves the voting system to a 64-bit architecture.
    - Impacted products: Electionware

- Dual Factor Authentication: implemented YubiKey USB keys for dual factor authentication (optional).
    - Impacted products: Election Management System
- Increased RAM Potential: Provided the option for increased physical RAM on the EMS in the client, server and/or standalone configurations (optional).
    - Impacted products: Election Management System
- Arial fonts: Included the recommended Arial fonts, which allows states to have better flexibility for ballot/election layout. This font is optional and is obtained via customer purchase.
    - Impacted products: Election Management System
- Add Option to Present Voter Instructions to all Voters: Provide a configurable option to present all voters with voting instructions (on-screen and audio) at the beginning of each ExpressVote vote session in the voter-selected language.
    - Impacted products: Electionware, ExpressVote HW1.0, ExpressVote HW2.1
- Add Option to Present Election Name, Date, and Ballot Style to All Voters: Provide a configurable option to the Election Name, Election Date, and Ballot Style to voter instructions (on-screen and audio) that are available to the voter at the beginning of each vote session or on-demand when the Help feature is invoked.
    - Impacted products: Electionware, ExpressVote HW1.0, ExpressVote HW2.1
- Add option to always front eject cards for review on ExpressVote Tabulator: Provide configurable option for the ExpressVote Tabulator to eject the printed card to all voters for review before casting.
    - Impacted products: Electionware, ExpressVote HW2.1
- Synchronization: Incremented firmware version to remain synchronized with common code stack changes.
    - Impacted products: DS450, DS850
- New USB Flash drives: Added support for new USB flash drives (4GB, 8GB, 16GB, and 32GB).
    - Impacted products: All products
- Windows 10 Flash Drives: Added support for exporting files on a USB flash drive formatted on Windows 10.
    - Impacted products: All products
- Imprinted Ballots: Enhanced the imprinted ballot number with the ability to include the last four digits of the machine serial number.
    - Impacted products: DS450, DS850
- Credentials: Changed log in credentials so all central count equipment uses the same username and password rather than requiring different user credentials for each central count model.
    - Impacted products: DS450, DS850

DS200

- Write-in Snippets: On the DS200 results tape the write in snippets are all grouped together regardless of precinct. The Snippets should be sorted on the tape by precinct.
- Write-in Support: Revised the Write-In Review report to suppress contests with no entered write-in votes. This will save space on the report and avoid wasting report tape.
- Security: Integrated support for Security CF Cards.

DS450

- Threshold Settings: Set the DS450 black threshold default setting to 135 per engineering recommendation.

Electionware

- Performance Improvement: Migrated Electionware from a 32-bit to a 64-bit application. This allows increased memory allocation and improves system performance.
- Performance Improvement: Provided an additional internal Postgres system logging message to enhance the security and performance of the database. This additional logging is included within the internal Postgres logging for analytical, internal traceability and allows for further indexing for added performance. Shortened the ballot finalization process in Touch Screen Ballot.
- Adjudication: Provided an additional user logging message to enhance the transparency and security of the database. This additional logging is included within the Reporting module to assist users during ballot adjudication.
- Security: Updated user rights to require system administrator credentials to access functionality to clear results media.
- Exports: Updated the Enhanced XML export file to handle Party Preference contests.
- Navigator: Updated the Reporting module Load Results Navigator, requiring the user to manually refresh for updates.
- Write-in Snippets: Enhanced ExpressVote and ExpressVote XL write-in snippet loading and display in the Reporting module.

Event Log Service

- 64-bit Architecture: Convert Event Log Service to the new 64-bit architecture.

ExpressVote HW1.0

- Incorrect Copyright Date on Splash Screen: Included the sysload.bmp file on the USB update application in order to properly update the copyright date.

ExpressVote HW2.1

- Audit Log: Addressed a scenario where a log file entry is written to the log file in the USB media before the unit password has been entered.
- Application Update: Addressed an issue that required re-entry of the serial number when doing application updates.

ExpressVote XL

- Ballot Activation: This enhancement enables customers to use ExpressVote XL activation cards pre-printed with a designated party barcode.
- Polls Close Process: Enhanced firmware to prevent ExpressVote XL from automatically printing results reports at poll closing unless the poll worker inserts the removable collection media or manually enters an override code. This enhancement is to encourage best practices by reducing the opportunity to remove the media before the poll collection process is complete.
- Screen Calibration: Overall improvements to the screen calibration feature to address feedback from customer sites and field service technicians. Added a screen calibration test utility to the admin menu.
- L&A Test Data checks: Added additional checks to identify and remove test data from logic and accuracy testing on the election media.
- Access code required to silence media door alarm: Added an access code challenge to silence the alert when the media door is opened in an unauthorized manner.
- Security: Improved device security by updating handling of cards that are the wrong length to require poll worker intervention.

Removable Media Service

- 64-bit Architecture: Convert Removable Media Service to the new 64-bit architecture.

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	5.0.6.0			Election management software that provides end-to-end election management activities

System Component	Software or Firmware Version	Hardware Version	Model	Comments
ES&S Event Log Service (ELS)	2.0.0.0			Logs users' interactions with EMS
Removable Media Service	2.0.0.0			Utility that runs in the background of the Windows operating system
DS200	2.21.0.0	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			60	Ballot Trolley Ballot Box
DS200 Metal Ballot Box		1.0, 1.1, 1.2	76245	Metal Tote Bag
DS200 Ballot Tote Bag			212516	Ballot Tote Bag
DS450	3.5.0.0	1.0		Central count scanner and tabulator
DS450 Cart			3002	
DS850	3.5.0.0	1.0		Central count scanner and tabulator
DS850 Cart			6823	
DS950	3.5.0.0	1.0		Central count scanner and tabulator
DS950 Cart			3002	
ExpressVote XL	1.3.0.0	1.0		Hybrid full-faced paper-based vote capture and selection device and precinct count tabulator
ExpressVote HW1.0	1.5.4.0	1.0		Hybrid paper-based vote capture and selection device
ExpressVote HW1.0 Previewer	1.5.4.0			Ballot preview software
ExpressVote HW2.1	2.6.0.0	2.1.0.0, 2.1.2.0		Hybrid paper-based vote capture and selection device
ExpressVote HW2.1 Previewer	2.6.0.0			Ballot preview software
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
Quad Express Cart			41404	Portable Voting Booth

System Component	Software or Firmware Version	Hardware Version	Model	Comments
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
SecureSetup	6.0.6.0			Proprietary Hardening Script
Detachable Keypad		1.0	97-00168, 97-00505	Detachable ADA support peripheral

COTS Software

Manufacturer	Application	Version
Microsoft Corporation	Windows Server 2016	WIN2016_6060.iso
Microsoft Corporation	Windows 10 Enterprise LTSC	WIN10_6060.iso
Microsoft Corporation	Windows Updates (Software updates included in the OS image)	Package date: WIN10_6060.iso-4/19/2021 WIN2016_6060.iso-4/19/2020
Microsoft Corporation	Windows Defender Antivirus (Configured within the OS image)	N/A
Dell	TPM Utility	DellTpm2.0_Fw1.3.2.8_V1_64.exe
Cerberus	Cerberus FTP Server - Enterprise	11.3.4 (64-bit)
Adobe	Adobe Acrobat	11.0.07
Yubico Login for Windows	Dual Factor Authentication YubiKey USB keys for dual factor authentication (optional)	2.0.3
PostgreSQL	PostgreSQL11	11

COTS Hardware

Manufacturer	Hardware	Model/Version
Dell	EMS Server	PowerEdge T430, T440, T630
Dell	EMS Client or Standalone Workstation	Latitude 5580, OptiPlex 5040, 5050, 7020
Dell	Trusted Platform Module (TPM) Chip 1.2 and 2.0 (optional)	5.63.3353.0
Toshiba	EMS Standalone	Tecra A50-C
Innodisk	USB EDC H2SE (1GB) for ExpressVote 1.0	DEEUH1-01GI72AC1SB
Innodisk	USB EDC H2SE (16GB) for ExpressVote 2.1	DEEUH1-16GI72AC1SB
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

Manufacturer	Hardware	Model/Version
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	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)	Storage for security key (optional)
Lexar	CFAST Card Reader/Writer	LRWCR1TBNA
YubiKey USB drive	Dual Factor Authentication	5A Series
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
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

System Characteristic	Boundary or Limitation	Limiting Component
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	13	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.

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. Does not support Massachusetts Group Vote.
4. Does not support Universal Primary Contest.
5. Does not support Reviewer or Judges Initials boxes.
6. 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.
7. Does not support Team Write-in.
8. ExpressVote XL does not support multi-card ballots.

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.
4. The Straight Party feature must not be used in conjunction with the Multiple Target Cross Endorsement features.

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		
Primary: Open Standard (provide definition of how supported)	Yes	Configuration B only
Primary: Open Blanket (provide definition of how supported)	No	

Feature/Characteristic	Yes/No	Comment
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	
Recall Issues with Options: Retain is the first option, Replacement candidate for the second or more options (Vote 1 of M)	No	

Feature/Characteristic	Yes/No	Comment
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 2nd 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	
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

Feature/Characteristic	Yes/No	Comment
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	
FIPS 140-2 validated cryptographic module	Yes	
Used as (if applicable):		
Precinct counting device	Yes	DS200, ExpressVote HW2.1, 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