



United States Election Assistance Commission



Certificate of Conformance

ES&S EVS 6.0.3.0

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: 6.0.3.0

Name of VSTL: Pro V&V

EAC Certification Number: ESSEVS6030

Date Issued: July 27, 2020

Mona Harrington

Executive Director

Scope of Certification Attached

Manufacturer: *Election Systems & Software*
System Name: *EVS 6.0.3.0*
Certificate: *ESSEVS6030*

Laboratory: *Pro V&V*
Standard: *VVSG 1.0 (2005)*
Date: *07/23/2020*



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 6.0.3.0 (EVS6030) voting system is a modification of the ES&S EVS 6.0.2.0 voting system, certified on October 4, 2018. EVS6030 introduces multiple performance and optimization improvements for Electionware.

EVS6030 includes the following hardware: ExpressTouch Electronic Universal Voting System, ExpressVote XL™ Full-Face Universal Voting System, ExpressVote Universal Voting System hardware 1.0, ExpressVote Universal Voting System hardware 2.1, DS450 High-Throughput Central Tabulator, DS850 High-Speed Central Tabulator and DS200 Precinct-Based Tabulator.

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-face touchscreen vote capture that incorporates the printing of the voter's selections as a cast vote record, and tabulation scanning into 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, 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. 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 Cast Vote Records (CVR).

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 Cast Vote Records (CVR).

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 ES&S applications such as Electionware can use that information for media validation purposes.

Certified System before Modification (If applicable):

EVS 6.0.2.0

Changes addressed by modification

Cross-Product Changes

- Arial Fonts

Included the recommended Arial fonts, which allows states to have better flexibility for ballot/election layout.

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). Increased the amount of virtual RAM available to Electionware (optional).

Impacted products: Election Management System

- Modified Password Policy

Provided a method for modifying the Microsoft Windows password policy to not expire on the EMS (optional).

Impacted products: Election Management System

Electionware

- 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.

- 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
- Migrated Electionware from a 32-bit to a 64-bit application. This allows increased memory allocation and improves system performance.

- Exports/Reporting
 - Removed all empty entries in the CVR export report.

Removable Media Service

- Performance Improvement
 - Modified the installation directory to accommodate 64-bit Electionware application.

Mark Definition

ES&S' declared level mark recognition for the DS200, DS450 and DS850 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

EVS 6.0.3.0 supports English, Spanish, Chinese, Korean, Japanese, Hindi, Bengali, Vietnamese, Tagalog, Creole, Russian, and French. In addition, Punjabi and Gujarati are supported by ExpressVote XL and Electionware 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	5.0.1.1			
ES&S Event Log Service	1.6.0.0			
Removable Media Service	1.9.0.0			
ExpressVote HW 1.0	1.5.0.0, 1.5.1.0	1.0		Paper-based vote capture and selection device
ExpressVote Previewer (1.0)	1.5.0.0, 1.5.1.0			
ExpressVote HW 2.1	2.4.0.0, 2.4.3.0	2.1.0.0 2.1.2.0		Hybrid paper-based vote capture and selection device and precinct count tabulator
ExpressVote Previewer (2.1)	2.4.0.0, 2.4.3.0			
DS200	2.17.0.0	1.2, 1.3		Precinct Count Tabulator
DS450	3.1.0.0	1.0		Central Count Scanner and Tabulator
DS450 Cart	---	---	Model 3002	DS450 Cart
DS850	3.1.0.0	1.0		Central Count Scanner and Tabulator
DS850 Cart	---	---	Model 6823	DS850 Cart
ExpressVote XL	1.0.0.0, 1.0.1.0	1.0		Hybrid full-faced paper-based vote capture and selection device and precinct count tabulator
ExpressTouch	1.0.0.0	1.0		DRE
ExpressVote Rolling Kiosk		1.0	98-00049	Portable Voting Booth
Voting Booth		N/A	98-00051	Stationary Voting Booth
Voting Booth Workstation		N/A	87035	Stationary Voting Booth
ExpressVote Single Table		N/A	87033	Voting Table for One Unit
ExpressVote Double Table		N/A	87032	Voting Table for Two Units

System Component	Software or Firmware Version	Hardware Version	Model	Comments
ADA Table		N/A	87031	Voting Table for One Unit
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
Universal Voting Console		2.0	98-00077	Detachable ADA support peripheral
Tabletop Easel		N/A	14040	
ExpressTouch Voting Booth		N/A	98-00081	Stationary Voting Booth
SecureSetup	2.0.0.1			Proprietary Hardening Script

COTS Software

Manufacturer	Application	Version
Microsoft Corporation	Server 2008	R2 w/ SP1 (64-bit)
Microsoft Corporation	Windows 7 Professional	SP1 (64-bit)
Microsoft Corporation	WSUS Microsoft Windows Offline Update Utility	11.1.1
Symantec	Endpoint Protection	14.0.1 (64-bit)
Symantec	Symantec Endpoint Protection Intelligent Updater (File-Based Protection)	20180116-002-core3sds5i64.exe
Symantec	Symantec Endpoint Protection Intelligent Updater (Network-Based Protection)	20180115-040-IPS_IU_SEP_14RU1.exe
Symantec	Symantec Endpoint Protection Intelligent Updater (Behavior-Based Protection)	20180108-003-SONAR_IU_SEP.exe
Cerberus	CerberusFTP Server – Enterprise	9.0.3.1 (64-bit)
Adobe	Acrobat	XI
Microsoft Corporation	Visual C++ Redistributable	vc_redist.x86.exe (32-bit)
RSA Security	RSA BSAFE Crypto-C ME for Windows 32-bit	4.1
OpenSSL	OpenSSL	2.0.12
OpenSSL	OpenSSL	2.0.16
OpenSSL	OpenSSL	1.02d
OpenSSL	OpenSSL	1.02h
OpenSSL	OpenSSL	1.02k

COTS Hardware

Manufacturer	Hardware	Model/Version
Dell	EMS Server	PowerEdge T430, T630
Dell	EMS Client or Standalone Workstation	Latitude 5580, OptiPlex 5040, 5050, 7020
Innodisk	USB EDC H2SE (8GB) for ExpressVote 1.0	DEEUH1-08GI72AC1SB
Innodisk	USB EDC H2SE (16GB) for ExpressVote 2.1	DEEUH1-16GI72AC1SB
Delkin	USB Flash Drive (512MB, 1GB, 2GB, 4GB, 8GB)	N/A
Delkin	USB Embedded 2.0 Module Flash Drive	MY16TNK7A-RA042-D/16GB
Delkin	Compact Flash Memory Card (1GB)	N/A
Delkin	Compact Flash Memory Card Reader/Writer	6381
Delkin	CFAST Card (2GB, 4GB)	N/A
Lexar	CFAST Card Reader/Writer	LRWCR1TBNA
CardLogix	Smart Card	CLXSU128kC7/ AED C7
SCM Microsystems	Smart Card Writer	SCR3310
Avid	Headphones	86002
Zebra Technologies	QR code scanner (Integrated)	DS457-SR20009
Symbol	QR Code scanner (External)	DS9208
Dell	DS450 Report Printer	S2810dn
OKI	DS450 and DS850 Report Printer	B431DN, B431D, B432DN
OKI	DS450 and DS850 Audit Printer	Microline 420
APC	DS450 UPS	Back-UPS Pro 1500
APC	DS850 UPS	Back-UPS RS 1500, Pro 1500
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

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. ballot styles in an election	15,000	Electionware
Max. candidates allowed per election	10,000	Electionware
Max. contests allowed in an election	10,000	Electionware
Max. number of parties allowed	General election: 75 Primary election: 30 (including non-partisan)	Electionware
Max. Precinct Types/Groups	25	Electionware
Max. Contests allowed per ballot style	500 or # of positions on ballots	
Max. Reporting Groups in an election	14	Electionware
Max. candidates allowed per contest	230	Electionware
Max. "Vote For" per contest	230	Electionware
Max. ballots per batch	1,500	DS45/DS850

Component Limitations:

Electionware

1. Electionware capacities exceed the boundaries and limitations documented for ES&S voting equipment. For this reason, ballot tabulator limitations define the boundaries and capabilities of the Electionware system.
2. 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.
3. The Electionware Export Ballot Images function is limited to 250 districts per export.
4. Electionware supports the language special characters listed in the System Overview, Attachment 1. Language special characters other than those listed may not appear properly when viewed on equipment displays or reports.
5. The Straight Party feature must not be used in conjunction with the Single or Multiple Target Cross Endorsement features.

6. The 'MasterFile.txt' and the 'Votes File.txt' do not support results for elections that contain multiple sheets or multiple ExpressVote cards per voter. These files can be produced using the Electionware > Reporting > Tools > Export Results menu option. This menu option is available when the Rules Profile is set to "Illinois".

Paper Ballot Limitations

1. The paper ballot code channel, which is the series of black boxes that appear between the timing track and ballot contents, 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. If Sequence is used as a ballot style ID, it must be unique election-wide and the Split code will always be 1. In this case the practical style limit would be 16,300.
3. The ExpressVote activation card has a limited ballot ID based on the 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.

ExpressVote

1. ExpressVote 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 ES&S ExpressVote are never approached during testing.

ExpressVote XL

1. ExpressVote XL 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 ES&S ExpressVote XL are never approached during testing.
2. ExpressVote XL 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. ExpressVote XL does not support Massachusetts Group Vote.
4. ExpressVote XL does not support Universal Primary Contest.
5. ExpressVote XL does not support Multiple Target Cross Endorsement.
6. ExpressVote XL does not support Reviewer or Judges Initials boxes.
7. ExpressVote XL does not support multi-card ballots.
8. In a General election, one ExpressVote XL screen can hold 32 party columns if set up as columns or 16 party rows if set up as rows.
9. ExpressVote XL does not support Team Write-In.

ExpressTouch

1. ExpressTouch 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. ExpressTouch does not offer open primary support, which is the ability to select a party and vote based on that party.
3. ExpressTouch does not support Massachusetts Group Vote.
4. ExpressTouch does not support Universal Primary Contest.
5. ExpressTouch does not support Multiple Target Cross Endorsement.
6. ExpressTouch does not support Team Write-In.

DS200

1. The ES&S DS200 configured for an early vote station does not support precinct level results reporting. An election summary report of tabulated vote totals is supported.
2. The DS200 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 at least three 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

VVSG 1.0 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	Yes	Except ExpressTouch and ExpressVote XL
Primary: Open Blanket	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	

Feature/Characteristic	Yes/No	Comment
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 votetabulation/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	
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	
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 2 nd 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	

Feature/Characteristic	Yes/No	Comment
Ranked Order Voting		
Ranked Order Voting: Voters can write in a ranked vote.	No	
Ranked Order Voting: A ballot stops being counting when all ranked choices have been eliminated	No	
Ranked Order Voting: A ballot with a skipped rank counts the vote for the next rank.	No	
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.	No	
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 Wireless	No	
FIPS 140-2 validated cryptographic module	Yes	
Used as (if applicable):		
Precinct counting device	Yes	DS200, ExpressTouch, ExpressVote HW2.1, ExpressVote XL
Central counting device	Yes	DS450 and/or DS850

Baseline Certification Engineering Change Order's (ECO)

There are no ECOs associated with this certification.