United States Election Assistance Commission

Certificate of Conformance

ES&S EVS 5.0.1.0

The voting system identified on this certificate has been evaluated at an accredited voting system testing laboratory for conformance to the 2005 *Voluntary Voting System Guidelines (2005 VVSG)* . 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: 5.0.1.0

Name of VSTL: Wyle Laboratories

EAC Certification Number: ESSEVS5010

Date Issued: March 18, 2014

Chief Operating Officer and Acting Executive Director
U.S. Election Assistance Commission

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:

ES&S EVS 5.0.1.0 is comprised of the AutoMARK Voter Assist Terminal(VAT), DS200 Precinct Digital Scanner (DS200), DS850 high-speed Central Count Digital Scanner(DS850), ElectionWare, Election Reporting Manager (ERM), ES&S Event Log Service, Removable Media Service (RMS) and VAT Previewer.

- AutoMARK Voter Assist Terminal enables voters who are visually or physically impaired and voters more comfortable reading or hearing instructions and choices in an alternative language to privately mark optical scan ballots. The AutoMARK supports navigation through touchscreen, physical keypad or ADA support peripheral such as a sip and puff device or two position switch.

- DS200 digital scanner is a paper ballot tabulator designed for use as a polling place scanner. After the voter makes their selections on their paper ballot, their ballot is inserted into the unit for immediate tabulation. Both sides of the ballot are scanned at the same time using a high-resolution image-scanning device that produces ballot images.
- The DS850 is a high-speed, digital scan central ballot counter that uses cameras and imaging algorithms to capture voter selections on the front and back of a ballot, evaluate results and then sort ballots into discrete bins without interrupting scanning. A dedicated audit printer generates a continuous event log. Machine level reports are produced from a second, laser printer. The scanner saves voter selections and ballot images to an internal hard disk and exports results to a USB Memory stick for processing with Election Reporting Manager.
- ElectionWare integrates the election administration functionality into a unified application. Its intended use is to define an election and create the resultant media files used by the DS200,, AutoMARK™, DS850, and Election Reporting Manager (ERM). An integrated ballot viewer allows election officials to view the scanned ballot and captured ballot data side-by-side and produce ballot reports.
- ES&S Event Log Service is a Windows Service that runs in the background of any active ES&S Election Management software application to monitor the proper functioning of the Windows Event Viewer. The ES&S Event Log Service closes any active ES&S software application if the system detects the improper deactivation of the Windows Event Viewer.
- The VAT Previewer is an application within the EMS program that allows the user to preview audio text and screen layout prior to burning Election Day media for the AutoMARK™.
- Removable Media Service (RMS) is an application that runs in the background of the EMS client workstation and supports the installation and removal of election and results media.
- Election Reporting Manager (ERM) generates paper and electronic reports for election workers, candidates, and the media. Jurisdictions can use a separate ERM installation to display updated election totals on a monitor as ballot data is tabulated, and send the results' reports directly to the media outlets.
  ERM supports accumulation and combination of ballot results data from all ES&S tabulators. Precinct and accumulated total reports provide a means to accommodate candidate and media requests for totals and are available upon demand. High-speed printers are configured as part of the system accumulation/reporting stations PC and related software.

Mark definition:

ES&S' declared level mark recognition for the DS200 and DS850 is a mark across the oval that is 0.2" long x 0.03" wide at any direction.

Tested Marking Devices:

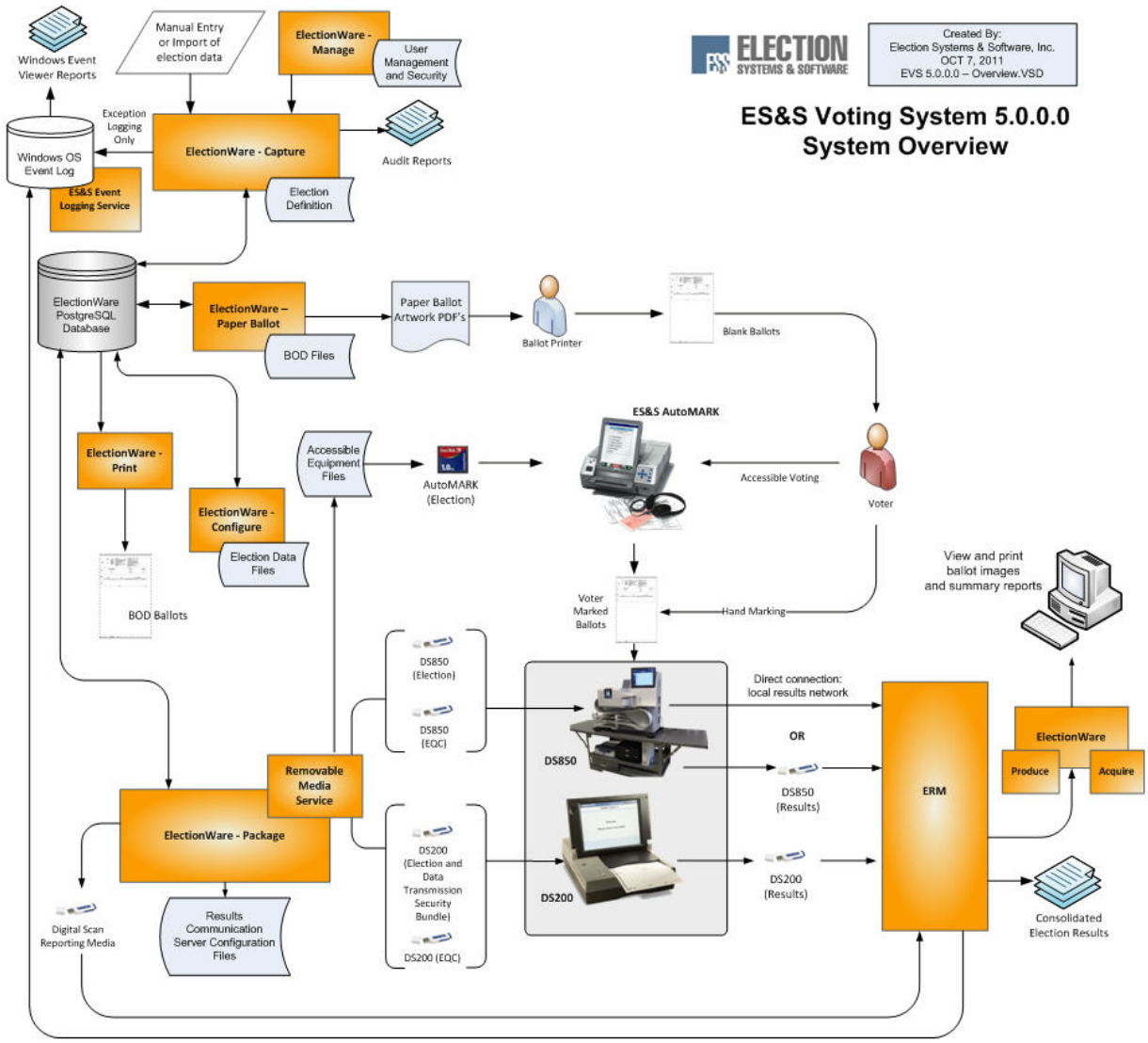
Bic Grip Roller Pen

Language capability:

EVS 5.0.1.0 supports English, Spanish, Chinese, Korean and Japanese ballot languages.

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	Operating System or COTS	Comments
DS200	2.7.1.0	1.2, 1.2.3, 1.3		Precinct Digital

System Component	Software or Firmware Version	Hardware Version	Operating System or COTS	Comments
				Scanner
AutoMARK A100	1.8.1.0	1.0		ADA Ballot Marking Device
AutoMARK A200	1.8.1.0	1.1		ADA Ballot Marking Device
AutoMARK A300	1.8.1.0	1.3		ADA Ballot Marking Device
DS850	2.4.0.0	1.0		Central Count Scanner, high-speed
Ballot Box Hardware		1.2, 1.3, 1.4		Plastic ballot box
Ballot Box Hardware		1.0, 1.1, 1.2		Metal ballot box w/diverter and w/o diverter
Election Ware	4.1.0.0			
Election Reporting Manager (ERM)	8.6.0.0			
ES&S Event Log Service	1.5.0.0			
VAT Previewer	1.8.1.0			
Removable Media Service	1.4.0.0			
EMS Reporting Workstation		Dell Optiplex 980		
EMS Server		Dell PowerEdge T710		
EMS reporting Laptop		Dell Latitude E6410		
Ballot on Demand Printer		OKI B6300		
DS850 Report Printer		OKI B430dn or B431dn		Laser report printer
DS850 Audit Log Printer		Microline 420		Dot Matrix Printer
EMS Printer		HP LaserJet 4050N		
Headphones		Avid FV 60		
USB Flash Drive		Delkin 512, 1GB, 4GB, 8 GB		
Compact Flash		Delkin Devices 1.0 GB		

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	At least 9900		ERM
Max. count for any precinct element	500,000 (65,500 from any tabulator media)		ERM report (ERM results import)
Max. candidates allowed per election	Depends on election content (limited by 21,000 maximum counters)[1]		ERM
Max. contests allowed in an election	Depends on election content (limited by 21,000 maximum counters)[2]		ERM
Max. counters allowed per precinct	Limits candidates and contests assigned to a precinct to 1,000[3]		ERM
Max. contests allowed per ballot style	200 or number of positions on ballot		N/A
Max. candidates (ballot choices) allowed per contest	175		ERM (database create)
Max. number of parties allowed	General election: 75 Primary election: 20 (including nonpartisan party)		ERM (database create)
Max. 'vote for' per contest	98		ERM (database create)
Ballot formats	All paper ballots used in an election must be the same size and contain the number of response rows.		Ballot scanning equipment
Max. Ballot Styles	9900		ERM
Max. District Types/Groups	20		ERM
Max. districts of a given type[4]	40		ERM
Supported Languages	• English • Spanish • Chinese	• Korean • Japanese	System Configuration

[1] Calculation of the number of counters must include a minimum of 4 counters for each contest, 3 overhead (overvote, undervote, precincts counted) and at least 1 candidate. Additional contest candidates each add a counter. If some precincts are defined as Absentee, a fourth overhead counter (absentee precincts counted) must be added to each contest. The number of statistical counters (Ballots Cast, Registered voters) must be added to the contest counters to determine the total counters.

[2] Example of maximum contest calculation if all contests had 2 candidates (5 counters each, 3 overhead counters + 2 candidates) and there were 10 statistical counters (i.e. Ballots Cast-Total, Republican, Democratic, Libertarian, Nonpartisan and Registered Voters-Total, Republican, Democratic, Libertarian, Nonpartisan. (21000-20)/5 = 4196 or (counter limit – statistics x 2)/number of counters/contest = number of contests.

[3] Contest counters are calculated as indicated in footnote 1, but two counters must be added for each statistical counter defined for the precinct. There are a minimum of 3 statistic counters assigned to each precinct (six added counters), "Ballots Cast," "Registered Voters" and "Ballots Cast Blank."

[4] Excludes the Precinct Group which contains all precincts.

Component Limitations:

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 1-26,839), Type (available codes 1-30) or Split (available codes 1-40).

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 26,000.

DS200

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.

AUTOMARK Voter Assist Terminal

ES&S AutoMARK 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 AutoMARK system as the maximum capacities of the ES&S AutoMARK are never approached during testing

Election Ware

ElectionWare capacities exceed the boundaries and limitations documented for ES&S voting equipment and election reporting software. For this reason, ERM and ballot tabulator limitations define the boundaries and capabilities of ElectionWare system.

ELECTION REPORTING MANAGER

1. Election Reporting Manager requires a minimum monitor screen resolution of 800x600.
2. ERM Database Create allows 1600 Precincts per Ballot Style.
3. There is a limit of 3510 precincts in the precincts counted/not counted display.
4. There is a limit of 3000 precincts in the precincts counted/not counted scrolling display.
5. Contest/Precinct selection pop up display limited to 3000 contests/precincts.
6. Non-English characters are not supported in ERM. This has to do with the creation of the XML results file out of ERM.
7. ERM's maximum page size for reports is 5,000 pages.

8. Generating a District Canvass Report without first properly creating a .DST file can result in inaccurate totals reports and inconsistent report formatting.

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	
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	

Feature/Characteristic	Yes/No	Comment
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.	NA	
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:	Yes	
Vote for N of M: Counts each selected candidate, if the maximum is not exceeded.	No	
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)	Yes	
Recall Issues with Options: Retain is the first option, Replacement candidate for the second or more options (Vote 1 of M)	Yes	
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	Overturned - US District Court 7/29/03: CA Election Code sect. 11383
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.	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	

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.	No	
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.	No	
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	No	
Used as (if applicable):		
Precinct counting device	Yes	DS200
Central counting device	Yes	DS850

Baseline Certification Engineering Change Order's (ECO)

This table depicts the ECO's certified with the voting system:

Change ID	Date	Component	Description	Inclusion
872	6/25/12	DS200/DS850	Release a new 4 GB USB thumb drive	De Minimis Optional

Change ID	Date	Component	Description	Inclusion
873	6/25/12	DS200/DS850	Release a new 8 GB USB thumb drive	De Minimis Optional
875	6/25/12	AutoMARK	Release 1GB Compact Flash	De Minimis Optional
876	11/10/11	AutoMARK	Redefine AutoMARK hardware revision level	De Minimis Optional
878	6/25/12	AutoMARK	End of Life AutoMARK components	De Minimis Optional
881	8/31/12	DS200/DS850	Allow color housing on 1gb, 2gb, 4gb and 8gb USB drives	De Minimis Optional
882	10/26/12	DS200/DS850	Introduce Delkin 1gb & 2gb USB drives	De Minimis Optional
884	8/31/12	DS200	Add rubber gasket for steel ballot box	De Minimis Optional
1029	8/31/12	DS200/DS850	Introduce new delkin compact flash	De Minimis Optional
1160	4/12/13	DS200	Counterfeit Sensor is end of life.	De Minimis Optional
1266	5/2/13	DS200 Carry Case	Improve DS200 Carry Case Latch Bracket	De Minimis Optional
1346	3/7/13	DS200	Change intElect logo to ESS	De Minimis Optional
1351	5/2/13	DS200 Carry Case	DS200 Carry Case replace cross recess screws with Torx head screws	De Minimis Optional
1388	5/2/13	DS200 Carry Case	Add a hinge reinforcement bracket to the DS200 carry case	De Minimis Optional
897	9/4/13	Steel Ballot Box	Replace security plunger with security bracket and replacing rails	De Minimis Optional
899	10/17/13	DS200	Added a new 1DB DRAM Stick	De Minimis Optional
1158	7/19/13	DS200	Extend suppress tray on the DS200	De Minimis Optional

Change ID	Date	Component	Description	Inclusion
1251	06/06/13	DS200 Carry Case	Introduce new hardware configuration of the DS200 Carry Case	De Minimis Optional
1266	05/07/13	DS200 Carry Case	Improve DS200 Carry Case Latch Bracket	De Minimis Optional
1398	6/24/13	DS200	Apply plug for antenna	De Minimis Optional
1400	6/24/13	DS200	New ESS patent label	De Minimis Optional
1401	12/5/13	DS200 Carry Case	Revise DS200 Carry Case assembly, drawings and inspection procedures	De Minimis Optional
1451	12/5/13	Plastic Ballot Box	Update packaging, drawing, label and assembly of DS200 Plastic Ballot Box	De Minimis Optional
1481	12/16/13	DS850	Various changes to the DS850 output tray	De Minimis Optional
1499	02/8/14	DS200 Carry Case	Enhance fasteners and modify drawings on DS200 Carry Case	De Minimis Optional