

ES&S EVS 5210

The ES&S version 5.2.1.0 voting system was examined at the Office of the Secretary of State in Austin on June 8-9, 2016. This is the identical system reviewed for the U.S. Elections Assistance Commission (EAC). Its EAC certification # is ESSEVS5210.

The following tables lists the applications and COTS hardware components used during the examination.

Table 1 – Major Proprietary Software Components

Product (election central)	Application/Firmware	Release #
ElectionWare	Election Management Software (EMS)	4.7.1.0
Election Reporting Manager	Election reporting system(ERM)	8.12.1.0
Event Log Service	Software used to monitor the Windows Event Viewer	1.4.1.0
Removable Media Service	Supports installation and removal of election definition and results	1.4.5.0
VAT Previewer	Used to preview the AutoMark ballot before burning media	1.8.6.0
ExpressVote Previewer	Used to preview the ExpressVote ballot before burning media	1.4.1.0
DS850	Central high speed digital scanner/tabulator	2.10.1.0
Product (voting center)	Application/Firmware	Release #
AutoMark	ADA compliant ballot marking device (BMD)	1.8.6.0
ExpressVote*	Ballot marking device (BMD)	1.4.10
DS200	Precinct ballot scanner/tabulator	2.12.1.0

* can be equipped with ADA devices

The components listed above for the election central location run on either a server running the Microsoft Server 2008 R2 w/ SP1 operating system or a PC running Microsoft Windows 7 5.1 w/ SP1. The DS850, DS200, ExpressVote, and AutoMark run on proprietary hardware.

Table 2 – Major COTS Hardware Components

Component/Description	Manufacturer	Model/Part #
EMS Server	Dell	PowerEdge T710
EMS Reporting Workstation	Dell	Optiplex 980
EMS Reporting Laptop	Dell	E6410
QR Code Scanner	Motorola	DS9208
QR Code Scanner	Zebra	DS457-SR20009
DS850 Report Printer	OKI	B430dn & B 431dn
DS850 Audit Printer	OKI	Microline 420
CF Card Reader	SanDisk	018-6305
CF Card Reader	Delkin	6381
USB Flash Drives	Delkin	512MB, 1, 2, 4, & 8GB
Compact Flash	Delkin	1GB

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For a detailed explanation of the hardware components and applications of the system please refer to the EAC certification test plan [here](#) and report [here](#). The hardware and software used for the 5210 system in Texas should only be those components listed above and in the EAC report.

Findings

- The responses provided for Form-101 are acceptable.
- The system software components listed in Table 1 were built successfully and the file hashes were verified to be correct.
- The prepared test ballots and the manually voted test ballots were recorded and tallied correctly.
- The accessibility devices worked as expected.
- Data (districts, precincts, etc.) can be imported from a legacy ES&S Unity system.
- The DS850 can be networked via Ethernet to the EMS PC. If this is not allowed in Texas then the Ethernet on the DS850 should be disabled.
- The DS200 does not support a real-time log printer. Since this is a precinct machine, this is not a problem unless a small jurisdiction wants to use the DS200 for the central-count tabulation in lieu of the more expensive DS850.
- The digital audit logs from the DS200 and DS850 tabulators can be viewed in ElectionWare. This makes it easy to look for errors
- ExpressVote can be configured with a ballot bin to have the marked ballots dropped into. The card bin can be sealed but not locked. Since it is not secured sufficiently, the ExpressVote should be configured to return the marked ballot to the voter who can then 1) deposit it into a secure ballot box to be tabulated on a DS850 in the central office, or 2) insert it into a DS200 to be tabulated in the precinct. The configuration depends on the jurisdiction's needs.
- The ballot that the ExpressVote presents to the voter is accessed by entering a short numeric code on the keyboard or scanning a bar code. The ballot style is determined at the the voter sign-in station per usual. A jurisdiction can use the optional electronic poll book, ExpressLink if purchased from ES&S. The electronic poll book was deemed outside the scope of the examination.
- The ExpressVote produces a printout with the voter's selections only, not the entire ballot. This is essentially a paper CVR (cast vote record). There is also a bar code printed on the paper representing the selections.
- ExpressVote can be configured with a card bin to have the voted ballots dropped into. The card bin can be sealed but not locked. Since it is not secured sufficiently, the ExpressVote should be configured to return the voted ballot to the voter who can then 1) deposit it into a secure ballot box to be tabulated on a

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DS850 in the central office, or 2) insert it into a DS200 to be tabulated in the precinct. The configuration depends on the jurisdiction's needs.

- The EVS 5210 system has a feature that allows a voter to make their selections online at home onto a sample ballot. The voter will print the voted sample ballot on their printer to use in a polling place on the ExpressVote. A bar code on the printed ballot is scanned by the ExpressVote to recall their selections. This ballot marking is done using a web application hosted by an ES&S partner, CoSentry. CoSentry was recently acquired by TA Associates.

There are a couple potential issues with this feature. 1) It's possible for an error on the displayed ballot to go undetected. This error might be due to a last minute change to the ballot that was not pushed to the on-line version or less likely a deliberate criminal manipulation of the ballot to have ballots mis-marked. However, the voted ballot is only a sample ballot and is not ever tabulated in the EVS. Also, the voter has a chance to verify their selections when it is read by the ExpressVote before they cast their vote. When they cast, the voter gets a printed ballot (CVR) from the ExpressVote just as any other voter who did not use the web application.

The other potential issue 2) is that if the sample ballots are stored on the online server, they may be "tabulated" to see voting trends. Ideally the voters selections are only in memory until the voter closes the online session. The process has not been clarified at the time this report was written.

Conclusion

The ES&S EVS 5210 system worked very well and tallied correctly. The ExpressVote is particularly easy to use and is speedy enough to allow for voting by all voters. The added capability to allow a voter to select their choices at home on a sample ballot and then recall their selections on the ExpressVote to produce an official paper ballot, is potentially a polling place time saver which could reduce lines. I believe it is important to verify that the sample ballots are never stored on the web server before this feature be allowed.

The system is suitable for the intended purpose and meets the requirements of the federal VVSG 2005 standard and the Texas Election Code. I recommend certification.

Tom Watson
Examiner