New Mexico
Office of the Secretary of State
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Voting System Recertification

Report of Findings for the Voting System Certification Committee

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Contents

1. Introduction

Pursuant to Section 1-9-7.4(A) NMSA 1978, the Secretary of State (SOS) is required to review and recertify each voting system already in use in the state in the year following the presidential election.

This report is being published by the Office of the Secretary of State as required by Section 1-9-14(C) NMSA 1978, after an examination of all application and test materials submitted by the voting system vendors. The report and applications for certification submitted by each vendor is available on the SOS website at http://www.sos.state.nm.us/Elections_Data/Voting_System_Cerifications.aspx and is subject to a 21 day public comment period as of the date of this report.

As used in Chapter 1, Article 9 NMSA 1978, "voting system" means a combination of mechanical, electromechanical or electronic equipment, including the software and firmware required to program and control the equipment, that is used to cast and count votes, and also including any type of system that is designed to print or to mark ballots at a polling location; equipment that is not an integral part of a voting system but that can be used as an adjunct to it is considered to be a component of the system. Based upon this definition, there are two types of voting systems up for recertification that are discussed in this report:

1. Ballot Printing Systems
2. Tabulation Systems w/associated peripherals

This report focuses on two primary areas in order to determine certification readiness by each vendor: (1) Conformance with the federal Election Assistance Commission's (EAC) Voluntary Voting System Guidelines (VVSG), if applicable[1] and,
(2) Conformance with the specific technical specifications for voting systems as outlined in Chapter 1, Article 9 NMSA 1978.

The Office of the Secretary of State received applications from four vendors requesting certification or recertification of their voting systems including:

1. Election Systems & Software (ES&S)[2]
2. Dominion Voting Systems (DVS)
3. Robis Elections
4. Automated Election Systems (AES)

Any system that does not comply with the requirements of the Election Code and not recertified by the Secretary of State shall be deemed decertified for use in the state.

[1] The VVSG does not contain specific guidelines for ballot printing systems and, therefore, the EAC does not provide for a certification process for these types of systems. The VVSG only applies to tabulation systems.
[2] ES&S is the only vendor listed that does not currently have a voting system being used in New Mexico.

2. Voluntary Voting System Guidelines

The Voluntary Voting System Guidelines (VVSG) are a set of specifications against which a voting system can be tested to determine if the system meets the required standards. The New Mexico Election Code, Section 1-9-14(B) NMSA 1978, requires that all voting systems used for the conduct of elections in accordance with the Election Code be tested by an independent testing authority to the most recently adopted VVSG which is currently the 2005 VVSG (version 1.0).

In order to determine whether a voting system has met this requirement, the SOS has reviewed the laboratory reports provided by Voting System Test Laboratories (VSTLs)[3] for each of the vendors who have submitted applications for certification. Additionally, the SOS has reviewed whether or not the EAC has issued a Certificate of Conformance to a voting system vendor, after successfully completing testing with a VSTL, by viewing the Certified Voting Systems section of the EAC website at https://www.eac.gov/voting-equipment/certified-voting-systems/.

3. Election Code - Voting System Requirements

In addition to meeting the specifications of the VVSG, as applicable, both types of voting systems are also required to meet specific requirements set forth in statute. Specifically, Sections 1-9-7.7 to 1-9-7.10 NMSA 1978 are required for all tabulation systems and Sections 1-9-20 to 1-9-22 set the requirements for ballot printing systems.

In order to verify that these sections are met, the SOS requested that each vendor provide specific information about how their systems met the statutory requirements, including any technical or user documentation or references that can be reviewed to further verify that the requirement has been met.

Additionally, the ballot printing system vendors were subjected to a test conducted by a VSTL in 2011 to independently determine whether their respective systems conformed to the requirements of the Election Code.

One specific finding on both tabulator vendors worth noting is in regards to Section 1-9-7.10(A) which requires that voting systems "accept ballots that are a…maximum of twenty-four inches long." Both the ES&S and DVS systems being considered for certification fall short of this particular requirement. The ES&S system has the capability to accept ballots up to 19" long and the DVS system has the capability to accept ballots up to 22" long. In fact, no tabulator system submitted for certification in New Mexico or used in statewide elections since this law was enacted in 2010 has ever met the 24" long maximum included in statute. Additionally, the longest ballot that has been produced to date for use in a statewide election was 19" long printed on both sides. Additionally, all testing conducted on the ballot printing systems, including throughput testing and printer certification testing, has been conducted using ballots 19" long or less.

[3] A list of EAC certified VSTLs can be found on the EAC website at https://www.eac.gov/voting-equipment/voting-system-test-laboratories-vstl/.

4. Voting System Certification Committee

Following the period of public comment, the SOS is required to submit a report of findings and any public comment to the Voting System Certification Committee (VSCC). The VSCC shall review the information and make recommendations regarding the suitability and reliability of the use of the equipment in the conduct of elections covered by the Election Code.

The VSCC shall recommend that a voting system be certified for use in the state only if it complies with the requirements in the Election Code including the most recent voluntary voting system guidelines adopted by the United States Election Assistance Commission

If the VSCC determines that the voting system does not comply with all requirements for certification, the SOS shall allow 30 days for an appeal of the findings to be filed or for the deficiencies to be corrected by the vendor(s). Following this period, the SOS shall prepare a final written report and the VSCC shall reconvene to consider the report and make final recommendations regarding the reliability and suitability of the voting equipment.

If the VSCC recommends that the voting system is suitable for use in elections in New Mexico, the SOS shall recertify the equipment for use in elections in this state, within 30 days of receiving the recommendation from the VSCC. Likewise, if the VSCC does not recommend the voting system, the SOS shall deny the application or decertify the equipment for use in elections in this state.

5. Tabulation System Certification

5.1 Election Systems & Software

The SOS has verified, based upon the information submitted, that the ExpressVote Universal Voting System (EVS) 5.2.2.0 submitted for certification by ES&S has met the standards set forth by the 2005 VVSG. Additionally, the applicable requirements outlined in Chapter 1, Article 9 of the Election Code have also been met.

Details regarding the verification and review performed by the SOS is outlined below.

Voting System(s) submitted for certification: EVS 5.2.2.0 which includes the following products and firmware versions:

EVS 5.2.2.0 EAC Certified 2/27/2017		
Precinct Tabulator	DS200	2.12.2.0
Central Tabulators	DS450	3.0.0.0
	DS850	2.10.2.0
Universal Voting System	ExpressVote	1.4.1.2
Election Management System	Election Reporting Manager (ERM)	8.12.1.1
	ElectionWare	4.7.1.1
	ExpressVote Previewer	1.4.1.2
	ExpressLink	1.3.0.0
	ToolBox	3.1.0.0

Voting System Testing Laboratory (VSTL): National Technical Systems (NST) Laboratories
EAC Certification: February 27, 2017

Specific requirements for voting systems outlined in Chapter 1, Article 9 of the Election Code:

1-9-7.7. Voting systems; technical requirements.

Voting systems certified for use in state elections shall:

A. Have a unique embedded internal serial number for audit purposes

The DS200, DS450, DS850, and ExpressVote all have internal serial numbers that can be viewed at any time on screen or in an export or print out of the system configuration or audit log reports. In addition, each unit has external labels containing required information.

B. Be supplied with a dust- and moisture-proof cover for transportation and storage purposes

A dust and moisture proof cover are provided for both the DS450 and 850 and should be in place while these units are not in operation or when they are being transported out of a storage area.

The DS200 has two types of cases. One is a separate case with a handle and combination lock. Jurisdictions using the metal ballot box should store the DS200 in this case. The other case is utilized as the top section of the plastic ballot box during operation. It can be removed and transported separately from the lower ballot box, and includes rollers and a telescoping handle. This case has seal tabs to provide for physical security.

The ExpressVote has two types of cases. The soft-sided case meets all minimum performance standards for exposure to physical shock and vibration associated with handling and transportation. The ExpressVote Kiosk is a hard-sided enclosure that houses the ExpressVote and accessory panel. Kiosks are able to nest together during storage and keep the ExpressVote secure with locks and seal tabs for physical security.

C. If the net weight of the system, or aggregate of voting device parts, is over twenty pounds, have self- contained wheels so that the system can be easily rolled by one person on rough pavement and can roll through a standard thirty-inch door frame

The DS450, DS850, DS200 plastic ballot box case, and ExpressVote Kiosk are all equipped with wheels making transportation simplified. In addition, none of ES&S tabulators/cases/carts exceed the thirty-inch depth requirement.

D. Be a stand-alone, non-networked election system such that all pre-election, Election Day and post-election events and activities can be recorded and retained in each device

All ES&S hardware in EVS 5.2.2.0 maintains a real-time log of all events that occur on the specific hardware itself and events specific to an election. These logs can be printed or exported for all pre-election, Election Day and post-election events and activities via any of the system or election audit logs available on each unit.

E. Employ scalable technology allowing easy enhancements that meet United States election assistance commission standards and state law

Any and all changes or enhancements made to ES&S technology is reviewed and/or tested by the Election Assistance Commission and a Voting System Testing Laboratory to ensure the enhancement or change simply extended the life of a certified hardware component and/or further reinforced the product while maintaining the same form, fit, function of the certified piece of equipment.

F. Have ancillary equipment, such as printers, power sources, microprocessors and switch and indicator matrices, that is installed internally or is modular and transportable

Equipment meets this requirement.

G. Display publicly the number of ballots processed

The public and protected count displays the number of ballots scanned in an election and the number of sheets scanned on the DS200 during its lifetime, respectively. The DS850 and DS450 are both central tabulators and can display total ballots processed at any time via the results menu or viewing the total ballots saved section in the scanning tab.

H. Be able to print:

(1)An alphanumeric printout of the contests, candidates and vote totals when the polls are opened so that the poll workers can verify that the counters for each candidate are on zero

The DS200 precinct scanner and tabulator will automatically print a zero report when polls are opened. The DS450 and DS850 central tabulators can also print zero reports via the results tab on each unit. This process is initiated by the user.

(2) An alphanumeric printout of the contests, candidates and vote totals at the close of the polls, which printouts shall contain the system serial number and public counter total

The DS200 precinct scanner and tabulator will automatically print a totals report at the close of polls. Once scanning is complete at the central location, the DS450 and DS850 can print a totals report from the results tab. This process is initiated by the user.

(3) As many copies of the alphanumeric printouts as necessary to satisfy state law

All tabulators are capable of printing as many zero reports or results reports as needed under state statute. Reports can either be accessed in the admin menu on the DS200 or the results menu on the DS450 and DS850.

I. Include a feature to allow reports to be sent to an electronic data file

At the close of polls, all results, logs and cast vote records are written to a removable media device to be transported to Election Reporting Manager (ERM) for results accumulation.

1-9-7.8. Voting systems; operational requirements

Voting systems certified for use in state elections shall:

A. Have internal application software that is specifically designed and engineered for the election application

Both, Electionware and Election Reporting Manager (ERM) is proprietary and specifically designed to define an election definition, design a ballot, produce election day media, and accumulate results.

B. Include comprehensive diagnostics designed to ensure that failures do not go undetected

The Jurisdiction is responsible for managing and archiving all Window's Event Logs related to all phases of an election. The Windows Event Log records each activity executed on the EMS PC including type, date, time, ES&S application, user ID and computer name. All EMS log messages are retrieved from the Windows Event Viewer using the Event Log Service. There are additional logs that are stored in the Electionware database. These logs are maintained and retrieved using Electionware functions.

C. Have a real-time clock capable of recording and documenting the total time polls are opened

All ES&S hardware is equipped with a real-time clock that tags the date and time to which polls are opened and closed in addition to any major events that take place on that specific piece of hardware.

D. Have a self-contained, internal backup battery that powers all components of the system that are powered by alternating current power; and, in the event of a power outage in the polling place:

(1) The self-contained, internal backup battery power shall engage with no disruption of operation for at least two hours and with no loss of data; and

(2) The system shall maintain all vote totals, public counter totals and the internal clock time in the event that the main power and battery backup power fail.

The DS200 is equipped with an external DC power supply, which plugs into a grounded, three-pronged 120- volt AC outlet and supplies power to the DS200. If a power outage occurs, the unit seamlessly transitions to the internal backup battery. The backup battery provides power for a minimum of two hours of scanning activity, or more than two hours of less intense use.

The ExpressVote is connected to a standard 110-volt AC outlet. In the case of a power outage, the ExpressVote can continue running on a fully-charged internal backup battery power for two hours. If the ExpressVote reaches a critically low battery power level without being shut off, the ExpressVote will

initiate a controlled shutdown to prevent the system from being corrupted.

The DS450 and DS850 are plugged into a UPS, the UPS is plugged into a surge suppressor and the surge suppressor is plugged into a wall outlet. If there is loss of AC power, the DS450 and DS850 will begin to run on the UPS Battery Backup System. This will allow for the continuing of scanning and saving of results for a minimum of 2 hours.

1-9-7.9. Voting systems; memory; removable storage media device; requirements

Voting systems certified for use in state elections shall:

A. Be programmable with removable storage media devices

All ES&S hardware is programmed with USB and CF removable storage media devices.

B. Contain ballot control information, summary vote totals, maintenance logs and operator logs on the removable storage media device

All information written to the removable media storage is digitally signed and encrypted. The data on the devices contains images of the ballots (if chosen to save during the programming of the election), vote totals and any audit logs from the specific election and the specific piece of hardware. This data is then read into Election Reporting Manger.

C. Ensure that the votes stored on the removable storage media device accurately represent the actual votes cast

Because all information on the removable storage media is digitally signed and encrypted, any tampering of results will result in a failure to bring results into ERM. Once results are read in from a trusted media device, cumulative results can be verified against the results reports printed by each precinct tabulator or central tabulator. In addition because this is a paper-based system, the physical paper ballot provides for an additional level of redundancy.

D. Be designed so that no executable code can be launched from random access memory

ES&S' Election Management System is hardened, locked down and restricted from the outside world. As a result, once all proprietary and commercial off the shelf (COTS) software have been installed, the system is locked down in a manner that protects the system from any external threats to the system.

E. Have any operating system software stored in nonvolatile memory, which shall include internal quality checks such as parity or error detection and correction codes, and which software shall include comprehensive diagnostics to ensure that failures do not go undetected

ES&S has the operating system stored in nonvolatile memory. Quality checks for errors would be done through the workstations system diagnostic report which comes standard on all deployed systems.

F. Allow for pre-election testing of the ballot control logic and accuracy, with results stored in the memory that is used on Election Day, and shall be capable of printing a zero-results printout prior to these tests and a results printout after the test

ES&S tabulators and the ExpressVote are capable of performing end-to-end testing of the entire voting system to ensure the election has been coded correctly, the ballots are printed correctly, and that the DS200, DS450, DS850, and ExpressVote correctly reads votes in each possible voting target. In addition, a jurisdiction is able to test the process for collecting results from the tabulators and entering them into Election Reporting Manager.

G. Have internal audit trail capability such that all pre-election, election day and post-election events shall be stored, recorded and recovered in an easy-to-read printed form and be retained within memory that does not require external power for memory retention

During the polls close process, audit logs from the tabulators will be written to the removable media device. Once these devices are read into ERM, those audit logs can be viewed, saved, and exported in any manner a jurisdiction sees fit. In addition, the DS450 and DS850 are connected to a real-time audit log printers which act as another means in which to access logs. The DS200 has the capability of printing an audit log immediately after result totals are printed during the close poll process or at any time throughout the election process. In addition to a hard copy of all audit log reports, EVS 5.2.2.0 also provides a manner in which to save those logs to a location of a jurisdictions choosing to be retained for as long as need be.

H. Possess the capability of remote transmission of election results to a central location only by reading the removable storage media devices once they have been removed from the tabulation device after the poll closing sequence has been completed

EVS 5.2.2.0 does not allow for modem transmission. As a result, once polls have closed and results are written to the removable media device, that device must be physically transferred to a central location for results accumulation. This process is followed on the DS200, DS450, and DS850.

I. Prevent data from being altered or destroyed by report generation or by the transmission of results

The removable media devices that contain results from each tabulator are digitally signed and encrypted. As a result, if any data is destroyed or tampered with, ERM will produce an error message that prohibits those results from being accumulated into the EMS database as to protect any results that currently reside in the database.

1-9-7.10. Voting systems; ballot handling and processing requirements

Voting systems certified for use in state elections shall:

A. Accept a ballot that is a minimum of six inches wide and a maximum of twenty-four inches long, in dual columns and printed on both sides

ES&S tabulators are capable of reading 11”, 14”, 17”, and 19” paper ballots and ExpressVote cards in any orientation.

B. Accept a ballot in any orientation when inserted by a voter

ES&S tabulators accept ballots inserted in any orientation.

C. Have the capability to reject a ballot on which a voter has made more than the allowable number of selections in any contest

Tabulators can be configured to accept, query or reject under voted, blank, and over voted ballots.

D. Be designed to accommodate the maximum number of ballot styles or ballot variations encountered in the largest New Mexico election jurisdiction

ES&S tabulators are able to support 9,990 precincts and 40 ballot styles per precinct in a 'ballots by style' election. The ExpressVote can support 6,400 ballots styles in a single election.

E. Be able to read a single ballot with at least four hundred twenty voting positions.

ES&S can support as little as 912 ballot targets and as many as 2184 targets depending on the size of ballot.

1-9-7.11. Voting systems; source code; escrow.

As a condition of initial certification and continued certification, the source code that operates a voting system shall be placed in escrow and be accessible to the state of New Mexico in the event the manufacturer ceases to do business or ceases to support the voting system.

EVS 5.2.2.0 is escrowed at Iron Mountain.

5.2 Dominion Voting Systems

The SOS has verified, based upon the information submitted, that the following voting systems submitted for re-certification by DVS has met the standards set forth by the 2005 VVSG. Additionally, the applicable requirements outlined in Chapter 1, Article 9 of the Election Code have also been met. Additionally, all of these systems have been successfully implemented and used during the 2016 primary and general elections.

Details regarding the verification and review performed by the SOS is outlined below.

Voting System(s) submitted for re-certification:

Democracy Suite Election Management System v4.14.28 – application software used to manage the election workflow, from import of election definition information, ballot layout, voting machine programming and pre-election test, Election Night reporting, and post-election activities.

Democracy Suite Adjudication v2.4.1.3201 – application software used to allow ballots with exceptions or out-stack conditions such as over-votes, blank ballots, write-ins and marginal marks to be resolved on-screen and sent to tally.

ImageCast® Evolution v4.14.21 – an accessible voting machine that combines an optical scanner and a

ballot marking device, suitable for use by all voters while complying with the accessibility requirements of the Help America Vote Act and the 2005 Voluntary Voting System Guidelines (VVSG).

ImageCast Precinct v4.14.17 – a lightweight optical scanner for in-precinct use. The ImageCast Precinct can optionally be configured to provide accessible voting.

ImageCast Central v4.14.17 – a high-speed absentee ballot central scanning solution that utilizes Canon brand scanners (DR-X10C and DR-G1130).

Voting System Testing Laboratory (VSTL): National Technical Systems (NST) Laboratories
EAC Certification: November 25, 2014

Specific requirements for voting systems outlined in Chapter 1, Article 9 of the Election Code:

1-9-7.7. Voting systems; technical requirements.

Voting systems certified for use in state elections shall:

A. Have a unique embedded internal serial number for audit purposes

Each unit carries a serial number in non-volatile internal memory, given to the unit at the time of its manufacture.

B. Be supplied with a dust- and moisture-proof cover for transportation and storage purposes

Each ballot box has a top cover for this purpose; individual units can be transported in a dust and moisture proof case.

C. If the net weight of the system, or aggregate of voting device parts, is over twenty pounds, have self-contained wheels so that the system can be easily rolled by one person on rough pavement and can roll through a standard thirty-inch door frame

All ballot boxes have casters, are designed to be moved by one person, and fit through a 30 inch door.

D. Be a stand-alone, non-networked election system such that all pre-election, Election Day and post-election events and activities can be recorded and retained in each device

Dominion recommends strongly that the election systems never be attached to the internet or other network. Democracy Suite is capable of operating in this manner.

E. Employ scalable technology allowing easy enhancements that meet United States Election Assistance Commission standards and state law

Democracy Suite has a variety of scalable configurations and platform options. It has been certified by the U.S. Election Assistance Commission (EAC) to the VVSG 2005 requirements.

F. Have ancillary equipment, such as printers, power sources, microprocessors and switch and

indicator matrices, that is installed internally or is modular and transportable

All necessary printers, power supplies, and similar ancillary devices required for precinct use are built into the voting machine or ballot box.

G. Display publicly the number of ballots processed

The ImageCast Precinct scanner and the ImageCast Evolution scanner both continuously show the number of ballots processed (Public Counter) when polls are open.

H. Be able to print:

(1) An alphanumeric printout of the contests, candidates and vote totals when the polls are opened so that the poll workers can verify that the counters for each candidate are on zero;
(2) An alphanumeric printout of the contests, candidates and vote totals at the close of the polls, which printouts shall contain the system serial number and public counter total; and
(3) As many copies of the alphanumeric printouts as necessary to satisfy state law

All ImageCast equipment is capable of printing reports to these specifications. They also allow the jurisdiction to program a default number of report copies and allow the pollworker to print additional report copies as needed.

I. Include a feature to allow reports to be sent to an electronic data file.

Reports can be exported to Excel, pdf, and other formats at the jurisdiction's discretion.

1-9-7.8. Voting systems; operational requirements.

Voting systems certified for use in state elections shall:

A. Have internal application software that is specifically designed and engineered for the election application

All internal application software is produced by Dominion Voting Systems, specifically for elections.

B. Include comprehensive diagnostics designed to ensure that failures do not go undetected

All scanners have a Power-On Self-Test (POST) as well as continuous monitoring of all critical functions so that malfunctions result in immediate warning to the pollworker and in unrecoverable situations, unit shutdown.

C. Have a real-time clock capable of recording and documenting the total time polls are opened

All scanners have a real-time clock. Poll opening and closing events are recorded in the unit's audit log.

D. Have a self-contained, internal backup battery that powers all components of the system that are powered by alternating current power; and, in the event of a power outage in the polling place:

(1) The self-contained, internal backup battery power shall engage with no disruption of operation for at least two hours and with no loss of data; and

(2) The system shall maintain all vote totals, public counter totals and the internal clock time in the event that the main power and battery backup power fail.

All scanners contain an internal battery tested to maintain at least two hours of operation. In the event that battery power is exhausted, all vote totals, counters, clock time, and any votes cast and confirmed to a voter are saved.

1-9-7.9. Voting systems; memory; removable storage media device; requirements.

Voting systems certified for use in state elections shall:

A. Be programmable with removable storage media devices

Each ImageCast scanner, as well as central count scanners, are programmed through compact flash cards.

B. Contain ballot control information, summary vote totals, maintenance logs and operator logs on the removable storage media device

These items are carried on the Compact Flash cards for each scanner, and can be uploaded along with results from that scanner.

C. Ensure that the votes stored on the removable storage media device accurately represent the actual votes cast

ImageCast Precinct and ImageCast Evolution utilize a pair of compact flash cards, writing results information to each one and checking that written information so that the accuracy of the information on each card is ensured. Mismatches in card content cause the unit to give a warning message then shut down.

D. Be designed so that no executable code can be launched from random access memory

ImageCast scanners are protected from code being launched from random access memory. The firmware for each unit is encrypted and signed when placed in the unit and only that code will execute on the scanner.

E. Have any operating system software stored in nonvolatile memory, which shall include internal quality checks such as parity or error detection and correction codes, and which software shall include comprehensive diagnostics to ensure that failures do not go undetected

The operating system for the scanners is stored in non-volatile memory on each unit. Each unit undergoes a Power-On Self-Test (POST) to ensure the integrity of its firmware prior to allowing polls to be opened.

F. Allow for pre-election testing of the ballot control logic and accuracy, with results stored in the memory that is used on Election Day, and shall be capable of printing a zero-results printout prior to these tests and a results printout after the test

Pre-election logic and accuracy testing is accomplished using the same compact flash cards in each unit that will be utilized on Election Day. Zero tapes are available at the start of pre- election logic and accuracy test as well as Election Day. Results tapes are also available after pre-election logic and

accuracy testing and Election Day.

G. Have internal audit trail capability such that all pre-election, election day and post-election events shall be stored, recorded and recovered in an easy-to-read printed form and be retained within memory that does not require external power for memory retention

Each ImageCast scanner, as well as the central election management software maintain audit trails in accordance with VVSG 2005 requirements. These can be recovered in soft files and printed to hard copy as desired. The logs are stored on the compact flash cards in the scanners until uploaded to the election management software.

H. Possess the capability of remote transmission of election results to a central location only by reading the removable storage media devices once they have been removed from the tabulation device after the poll closing sequence has been completed

The Democracy Suite system accommodates remote transmission sites wherein the compact flash cards containing results and logs are removed from the scanners and the contents transmitted subsequent to that removal.

I. Prevent data from being altered or destroyed by report generation or by the transmission of results.

Report generation and transmission do not affect the raw results or logs. This applies to both the scanners and the election management software.

1-9-7.10. Voting systems; ballot handling and processing requirements.

Voting systems certified for use in state elections shall:

A. Accept a ballot that is a minimum of six inches wide and a maximum of twenty-four inches long, in dual columns and printed on both sides

ImageCast scanners meet this requirement, being able to scan 8.5 inch by 11, 14, 17, 20, and 22 inch ballots, two or three columns, double-sided.

B. Accept a ballot in any orientation when inserted by a voter

Any of the four possible orientations are read by ImageCast scanners.

C. Have the capability to reject a ballot on which a voter has made more than the allowable number of selections in any contest

Over voted contests will cause a ballot to be rejected by the scanner.

D. Be designed to accommodate the maximum number of ballot styles or ballot variations encountered in the largest New Mexico election jurisdiction

Democracy Suite is designed to accommodate the largest jurisdictions in the United States and can easily accommodate New Mexico jurisdiction geographic and ballot layout needs.

E. Be able to read a single ballot with at least four hundred twenty voting positions

Democracy Suite can prepare ballots with 462 ballot positions.

1-9-7.11. Voting systems; source code; escrow.

As a condition of initial certification and continued certification, the source code that operates a voting system shall be placed in escrow and be accessible to the state of New Mexico in the event the manufacturer ceases to do business or ceases to support the voting system.

Dominion utilizes the NCC Group as a third party escrow agent. The State of New Mexico has been given beneficiary status for the escrowed products of this system configuration. The release conditions meet the state's requirements.

6. Ballot Printing System Certification

The VVSG does not contain specific guidelines for systems designed to print ballots and, therefore, the EAC does not provide for a certification process for these types of systems. However, the definition of voting system in the New Mexico Election Code does include systems designed to print ballots and provides for specific statutory requirements in Sections 1-9-20 to 1-9-22 NMSA 1978 used to determine suitability and reliability for certification purposes.

SLI Global Solutions, an independent testing laboratory, accredited by the EAC conducted tests on both the Robis AskED Ballot Printing System and the AES Autovote System in December 2011 to determine whether the systems met the specific requirements set forth in statute.

Both of these vendors have requested recertification based upon the original VSTL lab reports and have assured the SOS that any software enhancements made since the last test report have not impacted the statutorily required functionality nor is there a test procedure in place for the specific improvements made. Further, all enhancements made to the software have been successfully implemented and utilized in several elections already conducted within the State of New Mexico including the 2016 primary and general elections.

6.1 Robis Elections

Voting System(s) submitted for re-certification: AskED Ballot Printing System

Voting System Testing Laboratory (VSTL): SLI Global Solutions

Original Test and Certification Date: December 2011

Specific requirements for voting systems outlined in Chapter 1, Article 9 of the Election Code:

1-9-20. Systems designed to print ballots at polling locations; Ballot preparation requirements.

Systems designed to print ballots at polling locations shall provide the general capabilities for ballot preparation and shall be capable of:

A. Enabling the automatic formatting of ballots in accordance with the requirements of the Election Code, as amended from time to time, for offices, candidates and questions qualified to be placed on the ballot for each political subdivision and election district

Using Primary election style and General election style ballots as supplied by the State of New Mexico, it was verified that the Robis ballot on demand system is capable of printing a ballot automatically formatted with the appropriate offices, candidates and questions qualified to be placed on the ballot for each political subdivision and election district, as well as with any pertinent overlays.

B. Supporting the maximum number of potentially active voting positions

Using a ballot style representative of a maximum active voting position layout, as supplied by the State of New Mexico, it was verified that the Robis ballot on demand system is capable of printing a ballot supporting the maximum active voting positions.

C. Generating ballots for a primary election that segregate the choices in partisan contests by party affiliation

Using a Primary election style ballot, as supplied by the State of New Mexico, it was verified that the Robis ballot on demand system is capable of printing ballots for a primary election that segregates the choices in party contests, by party affiliation.

D. Generating ballots that contain identifying codes or marks uniquely associated with each format

Printing of different ballot styles within a jurisdiction, for both primary and general elections, it was verified that the Robis ballot on demand system is capable of generating ballots that contain identifying codes or marks that are uniquely associated with each format.

E. Ensuring that voting response fields properly align with the specific candidate names and/or questions printed on the ballot

Printing single ballots and batches of ballots, of both primary and general elections, it was verified that the Robis ballot on demand system generates voting response fields properly aligned with the specific candidate names and/or questions printed on the ballot.

F. Generating ballots which can be tabulated by all certified voting systems in the state

Using ballots supplied by the State of New Mexico, of both primary and general elections, it was verified that the Robis ballot on demand system is able to produce ballots which are capable of being tabulated by the certified voting systems in the state.

G. Generating a ballot for an individual voter based on voter registration data provided by state or county

Using the voter registration data set provided by the State of New Mexico, it was verified that the Robis ballot on demand system is able to generate an individual voter's ballot, as needed.

H. Functionality in both absentee and early voting environments

Using primary and general election style ballots, as provided by the State of New Mexico, the functionality was verified that the Robis ballot on demand system is functional in both absentee and early voting environments. Elections configured included: an early voting primary, an absentee primary, an early voting general and an absentee general election. This allowed the system to produce ballots, as well as detailed reporting for each election.

I. Providing absentee ballot tracking ability

It was verified that the Robis ballot on demand system provides adequate absentee ballot tracking capabilities.

J. Uniform allocation of space and fonts used for each office, candidate and question such that the voter perceives no active voting position to be preferred to any other

Using ballots supplied by the State of New Mexico, it was verified that the Robis ballot on demand system is able to produce ballots, as created by voting systems certified by the State, with uniform allocation of space and fonts, such that no active voting position is perceived to be preferential to any other position.

K. Rendering the ballot in any of the languages required by the Voting Rights Act of 1965, as amended

Using ballots supplied by the State of New Mexico, it was verified that the Robis ballot on demand system is able to render the ballot in any language, as prescribed by the State (English and Spanish).

L. Conformity with voting system vendor specifications for type of paper stock, weight, size, shape, size, font and location of voting positions used to record votes, folding, bleed through, and ink for printing.

Using ballots supplied by the State of New Mexico, it was verified that the Robis ballot on demand system is able to utilize paper and ink type that conforms to voting systems, certified by the State, prescribed requirements, such that ballots are appropriately produced.

M. Interfacing with the statewide voter file for the exchange of data.

Using the voter registration data supplied by the State, the Robis ballot on demand system was verified to be capable of interfacing with the statewide voter file, for the exchange of data.

1-9-21. Systems designed to print ballots at polling locations; Security requirements.

Systems designed to print ballots at polling locations shall provide the security capabilities for ballot preparation and shall be capable of:

A. Providing a full audit trail of individual voter activity

It was verified that the Robis ballot on demand system is capable of adequately providing full audit trails for individual voter activities.

B. Providing full ballot production audit logs for all activity including, but not limited to, absentee by mail, in person absentee, early voting, provisional voting and spoiling ballots

The Robis ballot on demand system is capable of producing this information. The audit log contains all of the required items. The system is not meant for the pollworker to be able to search through the logs. It is assumed, by Robis, that the log would be analyzed either using SQL queries or by loading into excel or another program. At that point, the user can see any subset of the audit log data they so choose.

C. Creation and preservation of an audit trail of every ballot issued during a period of interrupted communication in the event of loss of network connectivity

It was verified that the Robis ballot on demand system is capable of creation and preservation of an audit trail of every ballot issued, from its system, during periods of interrupted communications due to the loss of network connectivity.

D. Suitable security passwords at user, administrator and management levels

The Robis ballot on demand system provides suitable password security policies such that the system is secure to each role level implemented, though there are only two roles provided, user and management. No Administration type role is provided through the system. Robis utilizes the Windows operating system Administrator role for the third role level.

E. Preventing the modification of ballot formatting by polling place users

It was verified that the Robis ballot on demand system provides suitable security, by implementation of appropriate password policy enforcement and role enforcement, that no polling place user is able to modify a ballots format.

F. Retaining full functionality and capability of printing ballots during a period of

interrupted communication in the event of a loss of network connectivity

It was verified that the Robis ballot on demand system does retain full functionality and capability of printing ballots during periods of interrupted communications, such as the event of a loss of network connectivity, by removing network connectivity to the system.

1-9-22. Systems designed to print ballots at polling locations; Hardware, software and usability requirements.

Systems designed to print ballots at polling locations shall:

A. Provide hardware requirements that:

(1) Shall be networkable and scalable for multi-user environments;

The Robis ballot on demand hardware complies with this requirement.

(2) Function without degradation in capabilities after transit to and from the place of use;

The Robis ballot on demand hardware complies with this requirement.

(3) Function without degradation in capabilities after storage between elections

The Robis ballot on demand hardware complies with this requirement. Printing and paper storage environment should be at or near room temperature, and not too dry or too humid.

(4) Function in the natural environment, including variations in temperature, humidity and atmospheric pressure

The Robis ballot on demand hardware complies with this requirement.

(5) Function in induced environment, including proper and improper operation and handling of the system and its components during the election process

The Robis ballot on demand hardware complies with this requirement

(6) Contain prominent instructions as to any special requirements

The Robis ballot on demand hardware complies with this requirement

(7) Have no restrictions on space allowed for installation, except that the arrangement of the system shall not impede the performance of duties by election workers, the orderly flow

of voters through the polling place or the ability of the voter to vote in private
The Robis ballot on demand hardware complies with this requirement.

(8) Operate with the electrical supply ordinarily found in polling places (Nominal 120 Vac/60Hz/1 phase).

The Robis ballot on demand hardware complies with this requirement.

B. Provide software requirements that shall:

(1) Be capable of exporting voter data and voter activity status data to state and county voter registration systems

It was verified that the Robis ballot on demand system is capable of exporting voter data, as required, to state/county voter registration systems.

(2) Be capable of generating all required absentee and early voting signature rosters in a state-approved format;

The Robis ballot on demand system does contain a capability to generate voting signature rosters, though it does not make the differentiation of absentee or early voting.

(3) Generate daily and to-date activity reports based on user-defined criteria

Robis provides the user four reports that can be run as the daily or to-date reports.

(4) Must have both single transaction and batch transaction absentee production capability.

It was verified that the Robis ballot on demand system is capable of processing ballot requests in both single transaction and batch transaction modes.

C. Be capable of being operated by computer users familiar with a graphical user interface.

It was verified that a computer user with basic familiarity with graphical user interfaces are capable of operating the Robis ballot on demand system.

6.2 Automated Election Systems

Voting System(s) submitted for re-certification: AES Autovote

Voting System Testing Laboratory (VSTL): SLI Global Solutions

Original Test and Certification Date: December 2011

Specific requirements for voting systems outlined in Chapter 1, Article 9 of the Election Code:

1-9-20. Systems designed to print ballots at polling locations: Ballot preparation requirements.

Systems designed to print ballots at polling locations shall provide the general capabilities for ballot preparation and shall be capable of:

A. Enabling the automatic formatting of ballots in accordance with the requirements of the Election Code, as amended from time to time, for offices, candidates and questions qualified to be placed on the ballot for each political subdivision and election district

Using primary election style and general election style ballots as supplied by the State of New Mexico, it was verified that the AES ballot on demand system is capable of printing a ballot automatically formatted with the appropriate offices, candidates and questions qualified to be placed on the ballot for each political subdivision and election district, as well as with any pertinent overlays.

B. Supporting the maximum number of potentially active voting positions

Using a ballot style representative of a maximum active voting position layout, as supplied by the State of New Mexico, it was verified that the AES ballot on demand system is capable of printing a ballot supporting the maximum active voting positions.

C. Generating ballots for a primary election that segregate the choices in partisan contests by party affiliation

Using a primary election style ballot, as supplied by the State of New Mexico, it was verified that the AES ballot on demand system is capable of printing ballots for a primary election that segregates the choices in party contests, by party affiliation.

D. Generating ballots that contain identifying codes or marks uniquely associated with each format

Printing of different ballot styles within a jurisdiction, for both primary and general elections, it was verified that the AES ballot on demand system is capable of generating ballots that contain identifying codes or marks that are uniquely associated with each format.

E. Ensuring that the voting response fields properly align with the specific candidate names or questions printed on the ballot

Printing single ballots and batches of ballots, of both primary and general elections, it was verified that the AES ballot on demand system generates voting response fields properly aligned with the specific candidate names and/or questions printed on the ballot.

F. Generating ballots that can be tabulated by all certified voting systems in the state

Using ballots supplied by the State of New Mexico, of both primary and general elections, it was verified that the AES ballot on demand system is able to produce ballots which are capable of being tabulated by the certified voting systems in the state.

G. Generating a ballot for an individual voter based on voter registration data provided by state or county

Using the voter registration data set provided by the State of New Mexico, it was verified that the AES ballot on demand system is able to generate an individual voter's ballot, as needed.

H. Functionality in absentee, early and Election Day environments

Using primary and general election style ballots, as provided by the State of New Mexico, the functionality was verified that the AES ballot on demand system is functional in both absentee and early voting environments. Note that AES employs two applications one for absentee voting and one for early voting, within their Autovote system. Elections exercised included an absentee primary (in Autovote Absentee System), and an early voting general (in Autovote Voting Convenience Center). This allowed the system to produce ballots, as well as detailed reporting for each election.

I. Providing absentee ballot tracking ability

The AutoVote system is a fully integrated absentee management system. The system manages the absentee process from initial voter contact to acceptance or rejection of the Absentee Ballot package.

J. Uniform allocation of space and fonts used for each office, candidate and question such that the voter perceives no active voting position to be preferred to any other

The ballot imaging software automatically ensures uniform allocation of space and fonts for each office, candidate and question. Each ballot image is generated by the AutoVote database and ballot imaging software. The imaging software automatically ensures that all alignments and placement of ballot information are correct and that no active voting position is perceived as showing preference to any other. The software ensures ballot uniformity and the final image, once approved by the jurisdiction, is unalterable.

K. Rendering the ballot in any of the written languages required by the Federal Voting Rights Act

The AutoVote system allows entry of ballot information in any written language and/or in multiple languages.

L. Conformity with the optical scan vote tabulator vendor specifications for type of paper stock, weight, size and shape, size and location of voting positions used to record votes; folding; bleed through and ink for printing

The AutoVote system uses only manufacturer approved ballot stock as well production methods and specifications to ensure compatibility with all certified voting systems in the state.

M. Interfacing with the statewide voter file for the exchange of data.

The AutoVote system is designed to be delivered to the jurisdiction fully functional. Voter data is preloaded and all functionality is tested prior to delivery. Currently, voter data is collected from individual jurisdictions utilizing the jurisdictions preferred method of secure data transfer. The jurisdiction need only export voter data in the standard export format.

Post-election data updates to the statewide file are prepared and executed based on jurisdictional requirements, requests and capabilities. Activity data can be extracted from the central database by the jurisdiction if they are hosting the AutoVote system database or file extractions can be prepared and transmitted to the jurisdiction in any requested format by AES.

1-9-21. Systems designed to print ballots at polling locations; Security requirements.

Systems designed to print ballots at polling locations shall provide the security capabilities for ballot preparation and shall be capable of:

A. providing a full audit trail of individual voter activity

The AutoVote system provides a full system audit trail, tracking all voter activity from the importation of voter data from the jurisdiction through all voter activity including any absentee, early voting or Election Day activity to the post-election reporting and export of voter activity data. Any change to voter records or voter activity status is logged in the system's security audit log tables. Any such change is date and time stamped and the original record data is preserved in the security table.

B. providing full ballot production audit logs for all activity, including absentee voting by mail, in person absentee voting, early voting, provisional voting and spoiling ballots

Audit logs are generated for every action taken in the AutoVote system including all activity during absentee, early voting, provisional ballots, spoiled ballots and Election Day. Date and time stamps are generated for every transaction and become a permanent part of the individual voter's record in the election database.

Audit logs are available for all voter activity, at any point during the election cycle at the workstation level or through the AutoVote Administrators Management System.

C. creation and preservation of an audit trail of every ballot issued, including during a period of interrupted communication in the event of a loss of network connectivity

AutoVote provides for the creation and preservation of an audit trail of every ballot issued, including

during a period of interrupted communication in the event of a loss of network connectivity.

AutoVote is designed so that as a voter is being processed, a database local to the machine and the SQL database on a remote server are concurrently written to and updated.

In the event of loss of network connectivity AutoVote will alert the user that the system is off- line.

The same database that was being concurrently written to during the time the system was connected is now the database from which voters would be processed. This allows the system to continue the correct numbering of ballots and ensures continuity and ballot accountability.

When the network connection is restored, the local data is updated to the SQL server. The time that the system was local is logged into a table and displayed on the System Administration page. It also displays the last time that the system was updated from local.

D. suitable security passwords at user, administrator and management levels;

AutoVote provides security passwords at the User, Administrator and Management levels. Passwords securing the different functions of AutoVote increase in complexity as the ability of the user to perform actions on the systems increase. There are passwords that govern the logon to the Windows-based system as well as the AutoVote system.

E. preventing the modification of ballot formatting by polling place users

The ballot images cannot be modified once installed on the AutoVote system. Image files are secured and inaccessible without proper security clearance.

F. retaining full functionality and capability of printing ballots during a period of interrupted communication in the event of a loss of network connectivity

AutoVote is designed to write concurrently to the local database and the SQL database on a remote server. In the event network connectivity is lost, voters can continue to be processed in off-line, local database mode. When the network connection is restored, the local data is updated to the SQL server. The time that the system was in local database mode, is logged into a table and displayed on the System Administration page. It also displays the last time that the system was updated from local.

1-9-22. Systems designed to print ballots at polling locations; Hardware, software and usability requirements.

Systems designed to print ballots at polling locations shall:

A. Provide hardware requirements that:

(1) Shall be networkable and scalable for multi-user environments

The AutoVote system is easily networked and scalable for multi-user environments within a Windows domain using standard TCP/IP connections either through wired connections or using the built-in wireless adaptor.

AutoVote concurrently writes to both a local database and to the SQL server when installed in a network environment. Therefore, at all times, the activity generated from the system is written locally and on the database which enables both redundancy for auditing and backup in case of failure.

(2) Function without degradation in capabilities after transit to and from the place of use

AutoVote will perform at optimal performance through transit to and from the voting location. As with all electrical components, a reasonable amount of care to ensure that the components do not fall from excessive heights is required. The normal handling or transit to and from sites has no effect on system performance.

(3) Function without degradation in capabilities after storage between elections

The AutoVote system will function without degradation in capabilities after storage between elections.

(4) Function in the natural environment, including variations in temperature, humidity and atmospheric pressure

The AutoVote system components have been confirmed to meet this requirement.

(5) Function in an induced environment, including proper and improper operation and handling of the system and its components during the election process

The AutoVote system components have been confirmed to meet this requirement.

(6) Contain prominent instructions as to any special requirements

The AutoVote system provides pop up dialogue messages should a user attempt an operation that is not allowed, or one that requires a YES *I* NO response followed by a confirmation. These dialog messages provide precise instruction on how to proceed. These help dialogues appear throughout the system.

The AutoVote printer also has an operator panel and LED lights that keep users informed of the printer's status. If there is an issue requiring user intervention, the LEDs will blink red. At this point the LCD screen notifies the user as to the issue and the appropriate remedy.

(7) Have no restrictions on space allowed for installation, except that the arrangement of the system shall not impede the performance of duties by election workers, the orderly flow of voters through polling place or the ability of voters to vote in private

AutoVote's modality and portability, allows for the systems' setup in a manner that would not impede the performance of duties by election workers, degrade the orderly flow of voters through the polling place, nor would it violate the voter's ability to vote in private.

(8) Operate with the electrical supply ordinarily found in polling place, nominal one hundred twenty volts alternating current, sixty hertz, single phase

All AutoVote system hardware components operate on the standard one hundred twenty volts, alternating current at sixty hertz, single phase.

B. provide software requirements that shall:

(1) Be capable of exporting voter data and voter activity status data to state and county voter registration systems

Voter activity and data can be exported through the AutoVote export modules. Data export ability is only available through the System Administrators secure log in.

The voter activity data export file can be imported directly into the State system. AutoVote generates participation reports that can be used to scan in to the voter registration system to give early and Election Day voting credit.

(2) Be capable of generating all required absentee and early voting signature rosters in a state-approved format

AutoVote provides the basis of an electronic poll book for absentee, early, and Election Day. The voter's unique identifying information including voter registration number, name, and year of birth, party affiliation and address are represented in electronic form.

AutoVote can also generate paper signature rosters in the State approved format for laser output which can be exported to a PDF and printed by the jurisdiction.

(3) Generate daily and to-date activity reports based on user-defined criteria

AutoVote offers several reporting options including a variety of Daily Summary Reports and Activity to Date Reports. The Activity to Date Report includes all election activity since the election began.

(4) Have both single transaction and batch transaction absentee production capability

AutoVote provides the ability to process an absentee voter through either a batch process or as a single transaction.

C. Be capable of being operated by computer users familiar with a graphical user interface

Utilizing AutoVote requires that a user be familiar with a QWERTY keyboard and standard mouse to initiate actions required. The graphical user interface is of sufficient type size to be easily readable, distinguish buttons and indicate areas for textual input.

Each step in the processing of a voter during the process is numbered and follows a standard flow pattern for ease of use. Error handling is implemented in AutoVote and will give pop-up dialogues alerting the User and then indicating the appropriate action.

The AutoVote printer has LED lights quickly alerting the User to printer status issues. The printer also has an LCD screen that provides a dialogue indicating the printer's status and the steps to return the printer to operating basis.

7.0 Conclusion

The contents of this report of findings is being posted along with the test reports and non-proprietary application materials submitted by the voting system vendors to the SOS website for a 21 day public comment period beginning on the date of this report. All public comments should be submitted to sos.rules@state.nm.us. The public comment will be reviewed by the SOS and provided to the VSCC for their consideration during their meeting conducted in order to recommend certification.

Any system that does not comply with the requirements of the Election Code and not recertified by the Secretary of State at this time shall be deemed decertified for use in the state.