



New Mexico  
Office of the Secretary of State  
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# **Voting System Certification**

## **Report of Findings for the Voting System Certification Committee**

**May 10, 2023**

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## 1. Introduction

In accordance with Section 1-9-14(B) NMSA 1978, any person who has a voting system may apply on or before June 1 of any odd-numbered year to the secretary of state (SOS) to have the voting system examined and tested for certification. On April 18, 2023, the SOS received an application from Dominion Voting Systems (DVS) to have Democracy Suite Election Management System (EMS) v 5.17 certified for use in New Mexico which, if certified, could be used to upgrade systems already certified for use in New Mexico including:

- ImageCast Evolution (ICE) – an accessible voting machine that combines an optical scanner and a ballot marking device currently utilized in all voting centers across the state.
- ImageCast Central (ICC) – a high-speed absentee ballot central scanning solution that utilizes Canon brand scanners (DR-G2140 and DR-G1130).
- Democracy Suite Adjudication (ADJ) – application software used in conjunction with the ICC 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 by bi-partisan election workers.

A summary of the changes in v 5.17 in comparison to the last version of the software certified in 2021 is included in [Appendix 1](#) which includes several security enhancements.

Additionally, the same application submitted by DVS requests certification of new voting system components not currently used in the state including:

- ImageCast Precinct 2 (ICP2) – a precinct-based optical scan tabulator.
- ImageCast X Ballot Marking Device (ICX BMD) – an accessible ballot marking device that produces a paper ballot for scanning on an ImageCast Tabulator.
- ImageCast Voter Activation (ICVA) – application software installed on a workstation or laptop at the polling place that allows the poll workers to program smart cards for voters to enable an electronic ballot to be displayed on the ICX BMD then generated and printed based upon the voting selections of a voter.

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 the vendor is available on the SOS website at <https://www.sos.state.nm.us/voting-and-elections/data-and-maps/voting-system-certification-committee/> 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.

## **2. Voluntary Voting System Guidelines**

The Voluntary Voting System Guidelines (VVSG), which are adopted by the United States Election Assistance Commission (EAC), are a set of specifications against which a voting system can be tested to determine if the system meets the identified standards. The New Mexico Election Code, Section 1-9-14 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.

In February 2021, the EAC adopted new standards, the VVSG 2.0. Furthermore, in November and December of 2022, the VVSG 2.0 was fully implemented with the accreditation of Voting System Test Labs (VSTL) <sup>1</sup> by the EAC to test to the new standard.

Even though these standards were adopted, and a testing protocol was recently established by the EAC to test to the new standard, there are currently no voting systems on the market that have been certified to the VVSG 2.0 standards.

Therefore, for the purpose of publishing this report, the SOS has reviewed the last available VSTL laboratory testing report for the systems being contemplated for certification which is based upon the previous VVSG 1.0 standards. The SOS has verified, based upon the review of the VSTL test report prepared by Pro V&V dated March 15, 2023, that the DVS Democracy Suite v5.17 software meets the standards set forth in VVSG 1.0 and has been certified by the EAC.

DVS has informed the SOS that they are currently working to bring their systems into certification compliance with the VVSG 2.0 requirements and associated test assertions. Therefore, at this time, since there are no other voting system options certified to VVSG 2.0, the SOS recommends that the VSCC make a certification determination based upon VVSG 1.0 standards. The SOS will ask that the VSCC reconvene once the systems have been tested to the VVSG 2.0 standards by the VSTL for an updated certification determination.

## **3. Election Code - Voting System Requirements**

In addition to meeting the specifications of the VVSG, voting systems are required to meet specific requirements set forth in Chapter 9 of the Election Code.

To verify that these statutory requirements are met, the voting system application process requires that vendors provide specific information about how their systems adhere to the statutory requirements,

<sup>1</sup> 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/>.

including any technical or user documentation or references that can be reviewed to further verify that the requirements have been met. Based upon a review of the documentation provided by DVS, the voting systems being offered for certification adhere to the relevant statutory provisions.

Below are the relevant voting system requirements required by Chapter 1, Article 9 of the Election Code along with any observations based upon the evaluation of the Office of the Secretary of State of the DVS application materials.

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

**1-9-7.1. Voting system; use of paper ballot.**

**A. All voting systems used in elections covered by the Election Code [Chapter 1 NMSA 1978] shall use a paper ballot on which the voter physically or electronically marks the voter's choices on the ballot itself.**

The ImageCast Evolution (ICE), which is already used across the state as a combination optical vote scanner and ballot marking device, continues to comply with this statutory provision.

The ImageCast Precinct 2 is not capable of being utilized as a ballot marking device so would need to be deployed in conjunction with another system in order to provide accessible voting options required by the Help America Vote Act (HAVA) to each vote center.

The ImageCast X BMD is a touch screen device that a voter inserts a smart card containing the voter's specific ballot style which is issued at a polling location upon check in of the voter. The voter then navigates the touch screen device to make voting selections and upon completion a marked paper ballot is generated from an attached printer. This paper ballot is human readable to show the vote choices of the voter and is readable by any of the ImageCast scanners for vote tallying.

**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**

DVS recommends that the election systems never be attached to the Internet or other network. Democracy Suite 5.17 and all ImageCast systems are 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 5.17 has a variety of scalable configurations and platform options and has been certified by the EAC to the VVSG 1.0 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 for the tabulation scanners. The ImageCast X BMD components are modular and transportable.

**G. Display publicly the number of ballots processed**

The ImageCast Evolution (ICE) scanner and the ImageCast Precinct 2 (ICP2) scanner continuously shows 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 poll worker 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 and ballot marking devices 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 poll worker and in unrecoverable situations, cause the unit to shut down.

### **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 precinct-based scanners and ballot marking devices contain an internal battery tested to maintain at least two hours of operation. If battery power is exhausted in the scanners, all vote totals, counters, clock time, and votes cast 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 and ballot marking device, as well as Central Count scanners, are programmed through removable memory devices.

### **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 removable memory devices 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**

The ImageCast Evolution (ICE) and ImageCast Precinct 2 (ICP2) utilize a pair of removable memory devices, writing results information to each one and checking that information written so that the accuracy of the information on each card is ensured. Mismatches in the content of the memory devices 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 and ballot marking devices 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 removable memory devices in each unit that will be utilized on Election Day. Zero-results tapes are available at the start of pre-election logic and accuracy tests as well as on Election Day. Results tapes are also available after pre-election logic and accuracy testing and on 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, ballot marking device, as well as the central election management software maintain audit trails in accordance with VVSG 1.0 requirements. These audit trails can be recovered in soft files and printed to hard copy as desired. The logs are stored on the removable memory devices 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 5.17 system accommodates remote transmission of results wherein, after a paper tape results report is printed, the removable memory devices containing the results and logs are removed from the scanners and the contents transmitted from a specifically designed card reader and server.

**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 any of 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-two inches long, in dual columns and printed on both sides**

ImageCast scanners are capable of scanning 8.5 inch by 11, 14-, 17-, 20-, and 22-inch ballots with two to four columns, double-sided.

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

Any of the four possible orientations are processed 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**

Overvoted 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.

**F. Tabulate as a vote only the human-readable marks in the voter response area of a ballot.**

All ImageCast scanners are capable of tallying human-readable marks on the paper 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.**

DVS 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.

**1-9-13. Voting system technicians.**

**A. Voting system technicians shall be trained and certified by the secretary of state as to their adequacy of training and expertise on voting systems certified for use in the state.**

DVS has a variety of training courses and materials to aid in compliance with this requirement.

#### **4. Voting System Certification Committee (VSCC)**

Following the period of public comment, the SOS is required to submit the application materials, report of findings and any public comment to the 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 and shall recommend that a voting system be certified for use only if it complies with the requirements in the Election Code.

If the VSCC determines that the voting system does not comply with 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. 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 certify 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. Conclusion**

The contents of this report of findings are 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.compliance@sos.nm.gov](mailto:sos.compliance@sos.nm.gov). The public comment will be reviewed by the SOS and provided to the VSCC for their consideration during their meeting conducted to recommend certification.

## **6. Appendix 1 – Change Summary for D-Suite 5.4-NM to D-Suite 5.17S**

# Change Summary for D-Suite 5.4-NM to D-Suite 5.17S

This appendix lists the change notes for each component in the D-Suite 5.17 system configuration baselined against the D-Suite 5.4 system configuration previously certified in the State of New Mexico.

## *General System Changes*

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- System and security updates to Democracy Suite:
  - Upgrade to Windows Server 2019 and SQL Server 2019
  - New tool for performing automated hardening procedure of all Windows-based components
  - Additional encryption of election databases on ICE, ICP2 and ICX
- Added additional election-specific information to the barcode on paper ballots
- Added support for Batch and Summary Cards in EED and ICC
- Improved pseudo random number algorithm

## *Election Management System*

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- System and security updates to the EMS system:
  - Expanding the use of Trusted Certificates
  - Additional Software Encryption of the SQL Database
  - Blocked auto-play for all external media
- Modified UI for managing tabulators
- Election Event Designer updates:
  - Added support for creating watermark images for paper ballot header, footer, and stubs
  - Added information about status of election files in the Tabulator list to indicate whether election media has been programmed or needs to be re-programmed
- Results Tally & Reporting updates:
  - Updated reporting module
  - Added option to redact low turnout by precinct and/or counting group from CVR export for Primary elections

## *Adjudication*

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- Added an option to prevent adjudicators from adjudicating contests which do not meet selected out-stack conditions for the project
- New Adjudication Activity Log Report and Export
- Added ability to perform Database Back-ups and Maintenance Procedure

## *ImageCast Central*

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- Add a configuration setting to force save both sides of the ballot for single sided ballots
- Poll ID field extended from 6 characters in length to 10
- Added a Status/Interrupt Report
- Updated application to support HiPro Firmware version 1.0.1074

# Change Summary for D-Suite 5.4-NM to D-Suite 5.17S

## *ImageCast Evolution*

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- Ability to display instructional text or contest heading on ICE Screen

## *ImageCast Precinct 2*

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- Introducing new component to Democracy Suite

## *ImageCast X*

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- Introducing new component to Democracy Suite