United States Election Assistance Commission

Certificate of Conformance

VVSG 2005 VER. I

EAC CERTIFIED

**Dominion Voting Systems
Democracy Suite 5.17**

The voting system identified on this certificate has been evaluated at an accredited voting system testing laboratory for conformance to the *Voluntary Voting System Guidelines Version 1.0 (VVSG 1.0)*. Components evaluated for this certification are detailed in the attached Scope of Certification document. This certificate applies only to the specific version and release of the product in its evaluated configuration. The evaluation has been verified by the EAC in accordance with the provisions of the EAC *Voting System Testing and Certification Program Manual* and the conclusions of the testing laboratory in the test report are consistent with the evidence adduced. This certificate is not an endorsement of the product by any agency of the U.S. Government and no warranty of the product is either expressed or implied.

Product Name: Democracy Suite

Model or Version: 5.17

Name of VSTL: Pro V&V

EAC Certification Number: DVS-DemSuite5.17

Date Issued: March, 16 2023

Steven M. Frid
Executive Director

Scope of Certification Attached

Scope of Certification

This document describes the scope of the validation and certification of the system defined above. Any use, configuration changes, revision changes, additions or subtractions from the described system are not included in this evaluation.

Significance of EAC Certification

An EAC certification is an official recognition that a voting system (in a specific configuration or configurations) has been tested to and has met an identified set of Federal voting system standards. An EAC certification is **not**:

- An endorsement of a Manufacturer, voting system, or any of the system's components.
- A Federal warranty of the voting system or any of its components.
- A determination that a voting system, when fielded, will be operated in a manner that meets all HAVA requirements.
- A substitute for State or local certification and testing.
- A determination that the system is ready for use in an election.
- A determination that any particular component of a certified system is itself certified for use outside the certified configuration.

Representation of EAC Certification

Manufacturers may not represent or imply that a voting system is certified unless it has received a Certificate of Conformance for that system. Statements regarding EAC certification in brochures, on Web sites, on displays, and in advertising/sales literature must be made solely in reference to specific systems. Any action by a Manufacturer to suggest EAC endorsement of its product or organization is strictly prohibited and may result in a Manufacturer's suspension or other action pursuant to Federal civil and criminal law.

System Overview:

The D-Suite 5.17 Voting System is a paper-based optical scan voting consisting of the following major components: The Election Management System (EMS), the ImageCast Central (ICC), the ImageCast Precinct (ICP and ICP2), the ImageCast Evolution (ICE), and the ImageCast X ballot marking device (BMD). The D-Suite 5.17 Voting System configuration is a modification from the EAC approved D-Suite 5.5-D system configuration.

System Modifications:

The list below includes changes between this Democracy Suite 5.17 system and the baseline of the Democracy Suite 5.5-D Voting System:

GENERAL SYSTEM CHANGES
- 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
  - ICX Smart Card Mutual Authentication and Secure Messaging
- Added support for Provisional Voting with ICX-BMD and QR ballots.
- Added support for ICX BMD to produce a Uniform Ballot.
- Added additional election-specific information to the barcode on paper ballots.
- Added support for Batch and Summary Cards in EED and ICC.
- Added ability in EED to configure the number of columns a contest should occupy on the ICX screen.
- Improved pseudo random number algorithm.
- Added ability to export server certificates for previously imported encrypted projects.

EMS
- 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.
  - Improvement to election file generation
- 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.

ADJ
- 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.

ICC
- 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
- Update application to support HiPro Firmware version 1.0.1074

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

ICP2
- Introduced option to specify a different passcode for the Poll Close action.
- Added a warning during poll-closing procedure reminding the Poll Worker to ensure that the Auxiliary Bin is empty.
- Added monitoring of the printer sensor to ensure the printer head is in the correct place.
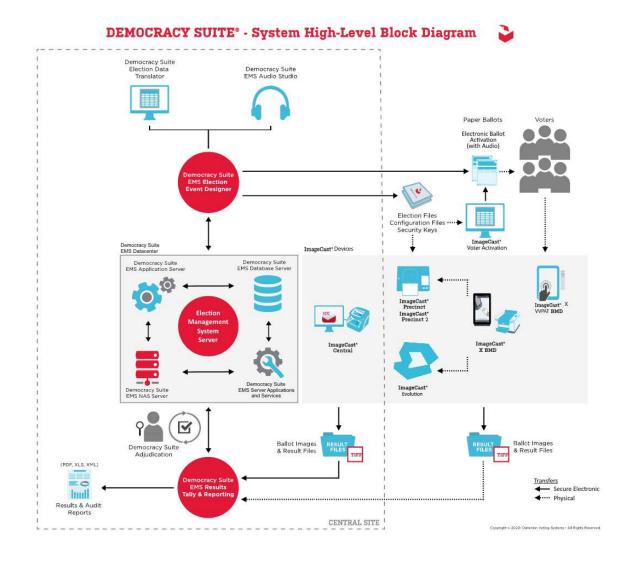- Prevented the Calibration Buttons from lighting up after the Poll has opened.

ICX
- System and Security updates to the ICX product:
  - Upgrade to Android version 8.1
  - Obfuscation of Source Code
  - Added tabulator serial number to the result files.
  - Support for Poll Worker and Technician Card expiration date
  - Additional USB models added to list of accepted devices.
- Added support for following BMD Printers:
  - Avision AP3061
  - HP M404dn
  - HP 4001dn
- Ability to choose if the text size selected on the screen is printed on the BMD QR ballot or not.
- Allow Poll Worker to cast a fleeing voter ballot.
- New Firmware version 169 for VVPAT V1 and V1C
- Updates to printed content for VVPAT:
  - Option to not print Total Ballots Cast in report footer.
  - Option to print Party information for Primaries.
  - Precinct ID changed to Precinct Name
- Reduced amount of paper used when printing on VVPAT.
- Removed ability to print Zero Report after ballots have been cast in VVPAT BMD mode.

Language capability:

This section provides information describing the languages supported by the various components of the system.

Language	ICE	ICP	ICP2	ICX
Alaska Native	Yes, if using Latin alphabet	Yes	No	No
Apache	Audio only	Audio only	No	No
Bengali	Yes	Yes	Yes	Yes
Chinese	Yes	Yes	Yes	Yes
English	Yes	Yes	Yes	Yes
Eskimo	Yes, if using Latin alphabet	Yes	No	No
Filipino	Yes, if using Latin alphabet	Yes	Yes	No
French	Yes	Yes	No	Yes
Hindi	Yes	Audio only	Yes	Yes
Japanese	Yes	Yes	Yes	Yes
Jicarilla	Audio only	Audio only	No	No
Keres	Audio only	Audio only	No	No
Khmer	Yes	Audio only	No	No
Korean	Yes	Yes	Yes	Yes
Navajo	Audio only	Audio only	No	No
Seminole	Audio only	Audio only	No	No
Spanish	Yes	Yes	Yes	Yes
Tagalog	No	No	No	Yes
Thai	Yes	Audio only	Yes	Yes
Towa	Audio only	Audio only	No	No
Ute	Audio only	Audio only	No	No
Vietnamese	Yes	Yes	Yes	Yes
Yuman	Audio only	Audio only	No	No

Democracy Suite 5.17 System Diagram

DEMOCRACY SUITE® - System High-Level Block Diagram

Components Included:

This section provides information describing the components and revision level of the primary components included in this Certification.

Voting System Software Components:

System Component	Software or Firmware Version	Operating System or COTS	Comments
EMS Election Event Designer (EED)	5.17.17.1	Windows 10 Pro	EMS
EMS Results Tally and Reporting (RTR)	5.17.17.1	Windows 10 Pro	EMS
EMS Application Server	5.17.17.1	Windows Server 19 Windows 10 Pro	EMS
EMS File System Service (FSS)	5.17.17.1	Window 10 Pro	EMS
EMS Audio Studio (AS)	5.17.17.1	Windows 10 Pro	EMS
EMS Data Center Manager (DCM)	5.17.17.1	Windows Server 19 Windows 10 Pro	EMS
EMS Election Data Translator (EDT)	5.17.17.1	Windows 10 Pro	EMS
ImageCast Voter Activation (ICVA)	5.17.17.1	Windows 10 Pro	EMS
EMS Adjudication (ADJ)	5.17.14.1	Windows 10 Pro	EMS
File System Server	5.17.17.1	Windows Server 19 Windows 10 Pro	EMS
Database Server	5.17.17.1	Windows Server 19 Windows 10 Pro	EMS
EMS Logger	5.17.17.1	Windows Server 19 Windows 10 Pro	EMS
NAS Server	5.17.17.1	Windows Server 19 Windows 10 Pro	EMS
EMS Adjudication Services	5.17.14.1	Windows Server 19 Windows 10 Pro	EMS
Smart Card Helper Service (SCHS)	5.17.17.1	Windows 10 Pro	EMS
Election Firmware	5.17.15.3	uClinux	ICP
ICP2 Application	5.17.15.1	Linux	ICP2
ICE Application	5.17.15.1	Ubuntu Linux	ICE
ImageCast Central Application	5.17.15.1	Windows 10 Pro	ICC
ICX Application	5.17.17.1	Android 8.1.0-2.2.4	ICX

Voting System Platform:

System Component	Version	Operating System or COTS	Comments
Microsoft Windows Server	2019	Unmodified COTS	EMS Server SW Component
Microsoft Windows	10 Professional	Unmodified COTS	EMS Client/Server SW Component
.NET Framework	3.5	Unmodified COTS	EMS Client/Server SW Component
.NET Framework	4.8	Unmodified COTS	EMS Client/Server SW Component
Microsoft Visual C++ 2015 Redistributable	2015	Unmodified COTS	EMS Client/Server SW Component
Microsoft Visual C++ 2013 Redistributable	2013	Unmodified COTS	EMS Client/Server SW Component

System Component	Version	Operating System or COTS	Comments
Java SE Runtime Environment	6.0 Update 20 or later	Unmodified COTS	EMS Client/Server SW Component
Microsoft SQL Server 2019 Standard SP2	2019 Standard SP2	Unmodified COTS	EMS Client/Server SW Component
Microsoft SQL Server 2019 Express with Advanced Services	2019 Express	Unmodified COTS	EMS Client/Server SW Component
Cepstral Voices	6.2.3	Unmodified COTS	EMS Client/Server SW Component
Arial Narrow Fonts	2.37a	Unmodified COTS	EMS Client/Server SW Component
Dallas 1-Wire Device Driver	4.05	Unmodified COTS	EMS Client/Server SW Component
Adobe Reader DC	AcrobatDC	Unmodified COTS	EMS Client/Server SW Component
Microsoft Access Database Engine	2010	Unmodified COTS	EMS Client/Server SW Component
Open XML SDK 2.0 for Microsoft Office	2.0	Unmodified COTS	EMS Client/Server SW Component
Infragistics NetAdvantage Win Forms	2011Vol. 1	Unmodified COTS	EMS SW Platform
Infragistics NetAdvantage Win Ultimate	2013 Vol. 1	Unmodified COTS	EMS SW Platform
Infragistics NetAdvantage WPF	2012 Vol. 1	Unmodified COTS	EMS SW Platform
TX Text Control Library for .NET	16.0	Unmodified COTS	EMS SW Platform
SOX	14.3.1	Unmodified COTS	EMS SW Platform
NLog	1.0.0.505	Unmodified COTS	EMS SW Platform
iTextSharp	5.0.5	Unmodified COTS	EMS SW Platform
CLR Security	2.3	Unmodified COTS	EMS SW Platform
ICSharpCode SharpZipLib	0.86.0	Unmodified COTS	EMS SW Platform
ISONewspaper	30.4	Unmodified COTS	EMS SW Platform
OpenSSL	1.0.2K	Unmodified COTS	EMS SW Platform
OpenSSL FIPS Object Module	2.0.14	Unmodified COTS	EMS SW Platform
SQLite	1.0.116	Unmodified COTS	EMS SW Platform
Lame	3.99.4	Unmodified COTS	EMS SW Platform
Speex	1.0.4	Unmodified COTS	EMS SW Platform
Ghostscript	9.54	Unmodified COTS	EMS SW Platform
One Wire API for .NET	4.0.2.0	Unmodified COTS	EMS SW Platform
Microsoft Expression Drawing;	3.0.0	Unmodified COTS	EMS SW Platform
MS Prism	4.0.0	Unmodified COTS	EMS SW Platform
MS Prism Unity Extensions	4.0.0	Unmodified COTS	EMS SW Platform
MS Build Community Tasks	1.4	Unmodified COTS	EMS SW Platform
MS Build Extension Pack	4.0.8.0	Unmodified COTS	EMS SW Platform
Enterprise Library	5.0	Unmodified COTS	EMS SW Platform
Entity Framework	6.1.3	Unmodified COTS	EMS SW Platform
NASM Assembler	2.12.02	Unmodified COTS	EMS SW Platform
newtonsoft.ison	13.01	Unmodified COTS	EMS SW Platform
Nlog	1.0.0.505	Unmodified COTS	EMS SW Platform
Ogg Vorbis decoder - oggdec	1.10.1	Unmodified COTS	EMS SW Platform
Ogg Vorbis encoder - oggenc2	2.88	Unmodified COTS	EMS SW Platform
PDFPrintingNet	4.8.2.0	Unmodified COTS	EMS SW Platform
Prism.Mvvm	1.1.1	Unmodified COTS	EMS SW Platform

System Component	Version	Operating System or COTS	Comments
Sox	14.3.1	Unmodified COTS	EMS SW Platform
SQLSysClrTypes.msi	Microsoft System CLR Types for SQL Server 2014	Unmodified COTS	EMS SW Platform
SSH.Net	2014.4.6.Beta2	Unmodified COTS	EMS SW Platform
Strawberry Perl	5.24.1.1	Unmodified COTS	EMS SW Platform
System Windows.Interactivity. WPF	2.0.20525	Unmodified COTS	EMS SW Platform
Toggle Switch Control Library	1.1.1	Unmodified COTS	EMS SW Platform
TreeViewEx	0.1.0.0	Unmodified COTS	EMS SW Platform
twaindsm-2.3.0.win.bin.zip	2.3.0	Unmodified COTS	EMS SW Platform
TX Text Control 16.0.NET	16.0	Unmodified COTS	EMS SW Platform
Visual Studio 2019 Professional	2019 Professional	Unmodified COTS	EMS SW Platform
Wix	3.11	Unmodified COTS	EMS SW Platform
Wix toolset Visual Studio Extension	3.11.2	Unmodified COTS	EMS SW Platform
Spreadsheetlight	3.4.3	Unmodified COTS	EMS SW Platform
Open SSL	1.0.2K	Unmodified COTS	ICP
OpenSSL FIPS Object Module	2.0.10	Unmodified COTS	ICP
Colilo	200400221	Unmodified COTS	ICP
uClinux tools	20040603	Unmodified COTS	ICP
uClinux	20070130	Modified COTS	ICP
Kernel (Linux)	2.6.30.9-dvs-36	Modified COTS	ICE
U-Boot	1.3.4	Modified COTS	ICE
BusyBox	1.20.2	Unmodified COTS	ICE
e2fsprogs	1.42.4	Unmodified COTS	ICE
Expat XML Parser	2.1.0	Unmodified COTS	ICE
Fontconfig	2.9.0	Unmodified COTS	ICE
Freetype	2.4.9	Unmodified COTS	ICE
I²C Tools for Linux	3.1.0	Unmodified COTS	ICE
JPEG library	8d	Unmodified COTS	ICE
libogg	1.3.0	Unmodified COTS	ICE
libPNG	1.5.10	Unmodified COTS	ICE
libusb	1.0.8	Unmodified COTS	ICE
libusb-compat	0.1.3	Unmodified COTS	ICE
openssl	1.0.2k	Unmodified COTS	ICE
openssl-fips	2.0.10	Unmodified COTS	ICE
PPP	2.4.5	Unmodified COTS	ICE
quazip	0.7.6	Unmodified COTS	ICE
Qt Everywhere Linux	4.7.3	Unmodified COTS	ICE
skell	1.19	Unmodified COTS	ICE
SoundTouch	1.6.0	Unmodified COTS	ICE
speex	1.2rc1	Unmodified COTS	ICE
SQLite	3.7.13	Unmodified COTS	ICE
Sysfs Utilities	2.1.0	Unmodified COTS	ICE
TIFF library	4.0.1	Unmodified COTS	ICE
timezone	2012b	Unmodified COTS	ICE
USB ModeSwitch	1.2.4	Unmodified COTS	ICE
zlib	1.2.7	Unmodified COTS	ICE
Kernel	4.9.11	Modified COTS	ICP2
U-Boot	2017.03	Modified COTS	ICP2

System Component	Version	Operating System or COTS	Comments
Logback	1.1.1-12	Unmodified COTS	ICX SW
Speex	1.2rc1	Unmodified COTS	ICX SW
GreenDAO	2.2.1	Unmodified COTS	ICX SW
GSON	2.8.4	Unmodified COTS	ICX SW
Zxing Core	3.4.0	Modified COTS	ICX SW
SoundTouch	1.9.2	Modified COTS	ICX SW
Android	8.1	Modified COTS	ICX SW
OGG	1.3.2	Unmodified COTS	ICX SW
SLF4J	1.7.29	Unmodified COTS	ICX SW
USB Serial	3.2	Unmodified COTS	ICX SW
OpenSSL FIPS Object Module	2.0.10	Unmodified COTS	ICX SW Build Library
OpenSSL	1.0.2K	Unmodified COTS	ICC SW Build Library
OpenSSL FIPS Object Module	2.0.14	Unmodified COTS	ICC SW Build Library
1-Wire Driver (x86)	4.05	Unmodified COTS	ICC Runtime SW
1-Wire Driver (x64)	4.05	Unmodified COTS	ICC Runtime SW
Canon DR-G1130 TWAIN Driver	1.2 SP6	Unmodified COTS	ICC Runtime SW
Canon DR-G2140 TWAIN Driver	1.1.11807.24001 SP2	Unmodified COTS	ICC Runtime SW
Canon M160ii	M160II_DRIT_V12S P6	Unmodified COTS	ICC Runtime SW
Canon DR-M260 TWAIN Driver,	1.1.11803.19001 SP2	Unmodified COTS	ICC Runtime SW
InoTec HiPro 821 TWAIN Driver	1.3.0.4	Unmodified COTS	ICC Runtime SW
Visual C++ 2015 Redistributable (x86)	2015	Unmodified COTS	ICC Runtime SW
Microsoft Windows 10 Professional x64	10	Unmodified COTS	ICC Runtime SW
Strawberry Perl	5.24.1.1	Unmodified COTS	ICC Runtime SW
Visual Studio 2019 Professional	2019	Unmodified COTS	ICC Runtime SW
Machine Configuration File (MCF)	5.17.15.1_20220920	Proprietary	ICX Configuration File
Device Configuration File (DCF)	5.17.9.1_20220916	Proprietary	ICP and ICC Configuration File
ICE Machine Behavior Settings	5.17.8.1_EAC_5.17_20220727	Proprietary	ICE Configuration
ICP2 Machine Behavior Settings	5.17.8.1_EAC_5.17_20220727	Proprietary	ICP2 Configuration

Hardware Components:

System Component	Hardware Version	Proprietary or COTS	Comments
ImageCast Precinct (ICP)	PCOS-320C	Proprietary	Precinct Scanner
ImageCast Precinct (ICP)	PCOS-320A	Proprietary	Precinct Scanner
ImageCast 2 Precinct (ICP2)	PCOS-330A	Proprietary	Precinct Scanner
ImageCast Evolution (ICE)	PCOS-410A	Proprietary	Precinct Scanner
ICP Ballot Box	BOX-330A	Proprietary	Ballot Box
ICP Ballot Box	ElectionSource IM-COLLAPSIBLE	Proprietary	Ballot Box
ICE Ballot Box	BOX-410A	Proprietary	Ballot Box
ICE Ballot Box	BOX-420A	Proprietary	Ballot Box
ICP2 Ballot Box	BOX-350A	Proprietary	Ballot Box
ICP2 Ballot Box	ElectionSource IM-COLLAPSIBLE	Proprietary	Ballot Box
ICX UPS Inline EMI Filter	1.0	Proprietary	EMI Filter
ICX Tablet (Classic)	aValue 15" Tablet (SID-15V)	COTS	Ballot Marking Device
ICX Tablet (Classic)	aValue 21" Tablet (SID-21V)	COTS	Ballot Marking Device

System Component	Hardware Version	Proprietary or COTS	Comments
ICX Tablet (Prime)	aValue 21" Tablet (HID-21V) (Steel or Aluminum chassis)	COTS	Ballot Marking Device or Direct Recording Electronic
Thermal Printer (VVPAT)	KFI VRP3 V1 and V1C	COTS	Voter-verifiable paper audit trail (VVPAT)
Server	Dell PowerEdge R630	COTS	Standard Server
Server	Dell PowerEdge R640	COTS	Standard Server
ICC Workstation HW	Dell Optiplex 5270 All in One	COTS	
ICC Workstation HW	Dell OptiPlex 7440 All in One	COTS	
ICC Workstation HW	Dell OptiPlex 3050 All in One	COTS	
ICC Workstation HW	Dell OptiPlex 9030 All in One	COTS	
ICC Workstation HW	Dell OptiPlex 9020 All in One	COTS	
ICC Workstation HW	Dell OptiPlex 9010 All in One	COTS	
ICC Workstation HW	Dell Precision 3450 XE	COTS	
ICC Workstation HW	Dell Precision 3460 XE	COTS	
ICC Workstation HW	Dell Precision 3440 XE	COTS	
ICC Scanner	Canon imageFormula DR-G1130	COTS	Central Count Scanner
ICC Scanner	Canon imageFormula DR-M160 II	COTS	Central Count Scanner
ICC Scanner	Canon imageFormula DR-M260	COTS	Central Count Scanner
ICC Scanner	Canon imageFormula DR-G2140	COTS	Central Count Scanner
ICC Scanner	InoTec HiPro 821	COTS	Central Count Scanner
ICC Scanner	Dell Optiplex 7070	COTS	
ICC Scanner	Dell Optiplex 7060	COTS	
ICC Scanner	Dell Optiplex 7050	COTS	
ICC Scanner	Dell Optiplex XE3	COTS	
ICC Scanner	Dell Optiplex XE4	COTS	
ICC Scanner Monitor	Lenovo 10QXPAR1US	COTS	
ICC Scanner Monitor	Dell 2418HT Monitor	COTS	
ICC Scanner Monitor	Lenovo 11GCPAR1US	COTS	
ICC Scanner Monitor	Planar PCT2235	COTS	
Client Workstation HW and Express Server	Dell Precision 3430	COTS	
Client Workstation HW and Express Server	Dell Precision 3431	COTS	
Client Workstation HW and Express Server	Dell Precision T3420	COTS	
Client Workstation HW and Express Server	Dell Precision 3440 XE	COTS	
Client Workstation HW and Express Server	Dell Precision 3450 XE	COTS	
Client Workstation HW and Express Server	Dell Precision 3460 XE	COTS	
Client Workstation HW and Express Server	Dell Precision T1700	COTS	
Client Workstation HW and Express Server	Dell Precision T3420	COTS	
ImageCast Voter Activation (ICVA)	Dell Latitude 3330	COTS	
ImageCast Voter Activation (ICVA)	Dell Latitude 3420	COTS	
ImageCast Voter Activation (ICVA)	Dell Latitude 3410 (SSD)	COTS	

System Component	Hardware Version	Proprietary or COTS	Comments
ImageCast Voter Activation (ICVA)	Dell Latitude 3410 (HDD)	COTS	
ImageCast Voter Activation (ICVA)	Dell Latitude 3400	COTS	
ImageCast Voter Activation (ICVA)	Dell Latitude 3490	COTS	
ImageCast Voter Activation (ICVA)	Dell Latitude e3480	COTS	
ImageCast Voter Activation (ICVA)	Dell Latitude e3470	COTS	
ImageCast Voter Activation (ICVA)	Dell Latitude e7450	COTS	
ICX Printer and Report Printer	HP LaserJet Pro Printer M402dn	COTS	
ICX Printer	HP LaserJet Pro Printer M402dne	COTS	
ICX Printer	HP LaserJet Printer M501dn	COTS	
ICX Printer	HP LaserJet Printer 4001dn	COTS	
ICX Printer	HP LaserJet Printer M404dn	COTS	
ICX Printer	Avision Ap3061	COTS	
ICE Dual Monitor	AOC e1649FWU	COTS	
ICE Dual Monitor	Display Logic LM15.6-USB-DV.B	COTS	
Monitor	Dell Monitor P2422H	COTS	
Monitor	Dell Monitor P2419H	COTS	
Monitor	Dell P2417H	COTS	
iButton Programmer	Maxim iButton Programmer DS9490R# with DS1402-RP8+	COTS	
iBUtton	Dallas Maxim DS1963S-F5+	COTS	
UPS	Tripp Lite SMART1500RMXL2U	COTS	
UPS	APC SMT1500C Smart-UPS	COTS	
UPS	APC SMT1500 Smart-UPS	COTS	
UPS	APC BR1000G	COTS	
UPS	CyberPower PR1500LCD	COTS	
UPS	CyberPower PR1500LCD-VTVM	COTS	
Network Switch	Dell X1008	COTS	
Network Switch	Dell X1026	COTS	
Network Switch	Cisco 8-port Switch (CBS350-8T-E-2G)	COTS	
Network Switch	Cisco 24-port Switch (CBS350-24T-4G)	COTS	
Sip and Puff	Enabling Devices #972	COTS	
Headphones	Cyber Acoustics ACM-70 and 70B	COTS	
4-way Joystick Controller	S26	Modified COTS	
Rocker (Paddle) Switch	Enabling Device #971	COTS	
Rocker (Paddle) Switch	AbleNet 10033400 (2x)	COTS	
Rocker (Paddle) Switch Cable	Hosa Technology YMM-261 (for use with AbleNet switches)	COTS	
CF Card Dual-Slot Reader	Lexar USB 3.0	COTS	
CF Card Reader	Hoodman Steel USB 3.0 102015	COTS	

System Component	Hardware Version	Proprietary or COTS	Comments
CF Card Reader	Kingston FCR-HS4	COTS	
CF Card	Centon C4-CM-CF-16.4	COTS	
CF Card	RiTek RDCF8G-233XMCB2-i	COTS	
CF Card	SanDisk SDCFHS-008G	COTS	
SDHC Memory Card	Centon C4-ET-SDU-16.1	COTS	
SDHC Memory Card	Centon S4-ET-SDU3-8.1	COTS	
SDHC Memory Card	Centon S4-CM-SDHU1-8G-002	COTS	
SDHC Memory Card	Centon C4-CM-SDU1-8.2	COTS	
CF Card	SanDisk SDCFHS-004G	COTS	
USB Memory Device	Apricorn AEGIS Secure Key 3NX PN: ASK3-NX-128GB	COTS	
USB Memory Device	Apricorn AEGIS Secure Key 3NX PN: ASK3-NX-32GB	COTS	
USB Memory Device	Centon (BiCS4) PN: C4-CT-U3P2-16.3	COTS	
USB Memory Device	Centon S4-CM-U3P2-16.1	COTS	
USB Memory Device	Apacer EH353-M APHA016GAG0CG-3TM	COTS	
USB Memory Device	Centon (BiCS4) PN: C4-CT-U3P2-8.3	COTS	
USB Memory Device	Centon S4-CM-U3P2-8.1	COTS	
USB Memory Device	Apacer EH353-M APHA008GAG0CG-3TM	COTS	
USB Memory Device	o USB Memory Device (4GB): Verbatim 97087	COTS	
ATI - Serial	ATI handset	Proprietary	
ATI- USB	ATI-USB handset	Proprietary	
ACS PC-Linked Smart Card Reader	ACR38U	COTS	
ACS PC-Linked Smart Card Reader	ACR39U	COTS	
Smart Card Reader	HID Global Omnikey 3121	COTS	

System Limitations

This table depicts the limits the system has been tested and certified to meet.

Characteristic	Limiting Component	Limit	Component
Ballot positions	Ballot	462**/292*	22 in. Ballot
Precincts in an election	EMS	1000; 250	Memory, Standard; Express
Contests in an election	EMS	1000; 250	Memory, Standard; Express
Candidates/Counters in an election	EMS	10000; 2500	Memory, Standard; Express
Candidates/Counters in a precinct	Ballot	462**/240*	22 in. Ballot
Candidates/Counters in a tabulator	Tabulators	10000; 2500	Memory, Standard; Express
Ballot Styles in an election	Tabulators	3000; 750	Memory, Standard; Express
Ballot IDs in a tabulator	ICP	200	Memory, Both EMS
Contests in a ballot style	ICX BMD Ballot	156**/38*	14 in. Ballot, Both EMS
Candidates in a contest	Ballot	231**/240*	22 in. Ballot, Both EMS
Ballot styles in a precinct	Tabulators	5	Memory, Both EMS
Number of political parties	Tabulators	30	Memory, Both EMS
"Vote for" in a contest	Ballot	30**/24*	22 in. Ballot, Both EMS
Supported languages in an election	Tabulators	5	Memory, Both EMS

* Reflects the system limit for a ballot printed in landscape.

** Reflects the system limit for a ballot printed in portrait.

Functionality

VVSG Supported Functionality Declaration

Feature/Characteristic	Yes/No	Comment
Voter Verified Paper Audit Trails		
VVPAT	YES	
Accessibility		
Forward Approach	YES	
Parallel (Side) Approach	YES	
Closed Primary		
Primary: Closed	YES	
Open Primary		
Primary: Open supported)	YES	
Partisan & Non-Partisan:		
Partisan & Non-Partisan: Vote for 1 of N race	YES	
Partisan & Non-Partisan: Multi-member ("vote for N of M") board races	YES	
Partisan & Non-Partisan: "vote for 1" race with a single candidate and write-in voting	YES	
Partisan & Non-Partisan "vote for 1" race with no declared candidates and write-in voting	YES	
Write-In Voting:		
Write-in Voting: System default is a voting position identified for write-ins.	YES	
Write-in Voting: Without selecting a write in position.	NO	
Write-in: With No Declared Candidates	YES	
Write-in: Identification of write-ins for resolution at central count	YES	
Primary Presidential Delegation Nominations & Slates:		
Primary Presidential Delegation Nominations: Displayed delegate slates for each presidential party	YES	
Slate & Group Voting: one selection votes the slate.	YES	
Ballot Rotation:		
Rotation of Names within an Office; define all supported rotation methods for location on the ballot and vote tabulation/reporting	YES	
Straight Party Voting:		
Straight Party: A single selection for partisan races in a general election	YES	
Straight Party: Vote for each candidate individually	YES	
Straight Party: Modify straight party selections with crossover votes	YES	
Straight Party: A race without a candidate for one party	YES	
Straight Party: "N of M race (where "N">1)	YES	
Straight Party: Excludes a partisan contest from the straight party selection	YES	
Cross-Party Endorsement:		

Feature/Characteristic	Yes/No	Comment
Cross party endorsements, multiple parties endorse one candidate.	NO	
Split Precincts:		
Split Precincts: Multiple ballot styles	YES	
Split Precincts: P & M system support splits with correct contests and ballot identification of each split	YES	
Split Precincts: DRE matches voter to all applicable races.	YES	
Split Precincts: Reporting of voter counts (# of voters) to the precinct split level; Reporting of vote totals is to the precinct level	YES	
Vote N of M:		
Vote for N of M: Counts each selected candidate, if the maximum is not exceeded.	YES	
Vote for N of M: Invalidates all candidates in an overvote (paper)	YES	
Recall Issues, with options:		
Recall Issues with Options: Simple Yes/No with separate race/election. (Vote Yes or No Question)	YES	
Recall Issues with Options: Retain is the first option, Replacement candidate for the second or more options (Vote 1 of M)	NO	
Recall Issues with Options: Two contests with access to a second contest conditional upon a specific vote in contest one. (Must vote Yes to vote in 2nd contest.)	NO	
Recall Issues with Options: Two contests with access to a second contest conditional upon any vote in contest one. (Must vote Yes to vote in 2nd contest.)	NO	
Cumulative Voting		
Cumulative Voting: Voters are permitted to cast, as many votes as there are seats to be filled for one or more candidates. Voters are not limited to giving only one vote to a candidate. Instead, they can put multiple votes on one or more candidate.	NO	
Ranked Order Voting		
Ranked Order Voting: Voters can write in a ranked vote.	NO	
Ranked Order Voting: A ballot stops being counting when all ranked choices have been eliminated	NO	
Ranked Order Voting: A ballot with a skipped rank counts the vote for the next rank.	NO	

Feature/Characteristic	Yes/No	Comment
Ranked Order Voting: Voters rank candidates in a contest in order of choice. A candidate receiving a majority of the first-choice votes wins. If no candidate receives a majority of first choice votes, the last place candidate is deleted, each ballot cast for the deleted candidate counts for the second-choice candidate listed on the ballot. The process of eliminating the last place candidate and recounting the ballots continues until one candidate receives a majority of the vote	NO	
Ranked Order Voting: A ballot with two choices ranked the same, stops being counted at the point of two similarly ranked choices.	NO	
Ranked Order Voting: The total number of votes for two or more candidates with the least votes is less than the votes of the candidate with the next highest number of votes, the candidates with the least votes are eliminated simultaneously and their votes transferred to the next-ranked continuing candidate.	NO	
Provisional or Challenged Ballots		
Provisional/Challenged Ballots: A voted provisional ballots is identified but not included in the tabulation but can be added in the central count.	YES	
Provisional/Challenged Ballots: A voted provisional ballots is included in the tabulation, but is identified and can be subtracted in the central count	NO	
Provisional/Challenged Ballots: Provisional ballots maintain the secrecy of the ballot.	YES	
Overvotes		
Overvotes: Overvote invalidates the vote.	YES	
Overvotes – DRE / BMD: Prevented from or requires correction of overvoting.	YES	
Overvotes: If a system does not prevent overvotes, define how overvotes are counted.	YES	If allowed via voter override, overvotes are tallied separately.
Undervotes		
Undervotes: System counts undervotes cast for accounting purposes	YES	
Blank Ballots		
Totally Blank Ballots: Any blank ballot causes an alert.	YES	Precinct voters receive a warning; both precinct and central scanners will warn on blank ballots.

Feature/Characteristic	Yes/No	Comment
Totally Blank Ballots: If blank ballots are not immediately processed, there must be a provision to recognize and accept them	YES	Blank ballots are flagged. These ballots can be manually examined and then be scanned and accepted as blank; or precinct voter can override and accept.
Totally Blank Ballots: If operators can access a blank ballot, there must be a provision for resolution.	YES	Operators can examine a blank ballot, re-mark if needed and allowed, and then re-scan it.
Networking		
Wide Area Network – Use of Modems	NO	
Wide Area Network – Use of Wireless	NO	
Local Area Network – Use of TCP/IP	YES	Client/server only
Local Area Network – Use of Infrared	NO	
Local Area Network – Use of Wireless	NO	
Used as (if applicable):		
Precinct counting device	YES	ImageCast Precinct ImageCast Precinct 2 ImageCast Evolution
Central counting device	YES	ImageCast Central

Baseline Certification Engineering Change Orders (ECO)

ECO #	Description
100706	Adjusted resistor value for paper sensor LED output
100718	Added Dell Precision 3440 XE EMS Express Server
100719	Added Dell Precision 3440 XE EMS-ADJ Workstation
100720	Added Dell Precision 3440 XE ICC Canon Workstation
100721	Added Dell Optiplex XE3 ICC HiPro Workstation
100741	Added Dell Latitude 3410 ICVA Workstation
100755	Added Cisco 24-port Switch (CBS350-24T-4G) Network Switch
100756	Added Cisco 8-port Switch (CBS350-8T-E-2G) Network Switch
100762	Added alternate supplier for the ICP2 LCD-Touch Panel assembly
100763	Added termination resistors to unused lines on the ICE Main Controller Board
100769	Added Dell Latitude 3410 with 512GB SSD Drive for ICVA Workstation
100772	Added Dell Latitude 3420 ICVA Workstation
100802	Added new ICP2 printer door that captures the printer platen roller onto the door
100803	Added new ICE DDR Memory Module
100812	Added alternate supplier for the ICE LCD-Touch Panel assembly
100819	Added new ICP2 Printer Controller Chip vendor
100826	ICP Provisional Flag Modification (5.5-B)
100827	ICP Provisional Flag Modification (5.5-C)
100829	Added Dell Precision 3450 XE EMS Express Server
100830	Added Dell Precision 3450 XE EMS-ADJ Client Workstation
100831	Added Dell Precision 3450 XE ICC Canon Workstation
100832	Added Lenovo 11GCPAR1US Touchscreen monitor for HiPro
100833	ICX Prime BIOS 1.40C Update
100843	Removal of ICP2 Ethernet Port
100845	Removal of ICE Ethernet Port
100849	Added New Centon 8GB SDHC Card - BiCS4
100850	Added New Centon 8GB microSD Memory Card -BiCS4
100864	Added new EMS Monitor – P2422H
100791	Added new ICE Battery Pack
100898	Removal of ICE Smartcard Reader
100891	Added Dell Precision 3460 XE EMS Express Server
100903	Added Dell Precision 3460 XE EMS-ADJ Client Workstation
100904	Added Dell Precision 3460 XE ICC Canon Workstation