United States Election Assistance Commission

Certificate of Conformance

Hart Verity Voting 2.4

VVSG 2005 VER. I

EAC CERTIFIED

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: Verity Voting

Model or Version: 2.4

Name of VSTL: SLI Compliance

EAC Certification Number: HRT-VERITY-2.4

Date Issued: February 21, 2020

Mona Harrington

Acting Executive Director

Scope of Certification Attached

Manufacturer: *Hart InterCivic*   **Laboratory:** *SLI Compliance*
System Name: *Verity Voting 2.4*   **Standard:** *2005 VVSG*
Certificate: *HRT-Verity-2.4*   **Date:** *2/21/2020*

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 **Hart Verity Voting 2.4** voting system represents a set of software applications for pre-voting, voting and post-voting election project activities for jurisdictions of various sizes and political division complexities. **Verity Voting 2. 4** functions include:

- Defining the political divisions of the jurisdiction and organizing the election with its hierarchical structure, attributes and associations.
- Defining the election events with their attributes such as the election name, date and type, as well as contests, candidates, referendum questions, voting locations and their attributes.
- Preparing and producing ballots for polling place and absentee voting or by mail voting.
- Preparing media for precinct voting devices and central count devices.

- Configuring and programming the **Verity Scan** digital scanners for marked paper ballots and **Verity Touch Writer** printed vote records.
- Configuring and programming the **Verity Touch Writer** BMD devices.
- Configuring and programming the **Verity Controller** with **Verity Touch Writer Duo** BMD devices.
- Configuring and programming the **Verity Controller** with **Verity Touch** and **Verity Touch with Access** DRE devices.
- Configuring and programming the **Verity Print** on-demand ballot production device.
- Transmission of the election results via **Verity Relay**.
- Producing the election definition and auditing reports.
- Providing administrative management functions for user, database, networking and system management.
- Import of the Cast Vote Records from **Verity Scan** devices and **Verity Central**.
- Preview and validation of the election results.
- Producing election results tally according to voting variations and election system rules.
- Producing a variety of reports of the election results in the desired format.
- Publishing of the official election results. Auditing of election results including ballot images and log files.

Verity Scan is a digital scanning device (tabulator) that is used in conjunction with an external ballot box. The unit is designed to scan marked paper ballots or Verity Touch Writer Duo printed vote records, interpret and record voter marks on the marked paper ballot or record voter selections on the printed vote records, and deposit into the secure ballot box.

Verity Touch Writer is a standalone Ballot Marking Device (BMD) which also includes an Audio Tactile Interface (ATI). Touch Writer allows voters who cannot hand-mark a paper ballot to generate a machine-readable and human readable paper ballot, based on vote selections made through the accessible electronic interface.

The **Verity Touch Writer Duo** is a daisy chained configuration of a **Verity Controller** device configured with up to twelve **Verity Touch Writer Duo** BMD devices, which allows voters to utilize the touchscreen or optional Audio Tactile Interface to generate a machine-readable and human readable printed vote record, based on vote selections made.

The **Verity Touch** is a Direct Recording Electronic (DRE) device chained configuration of a **Verity Controller** device configured with up to twelve **Verity Touch or Touch with Access** devices, which allow voters to cast their vote electronically via a touchscreen.

The **Verity Touch with Access** is a DRE device chained configuration of a **Verity Controller** device configured with up to twelve **Verity Touch** or **Touch with Access** devices, which allow voters to cast their vote electronically via a touchscreen or Audio Tactile Interface (ATI).

Verity Print is an on-demand ballot production device for unmarked paper ballots.

Verity Election Management allows users with the Administrator role to import and manage election definitions. Imported election definitions are available through the Elections chevron in Build. Users can also delete, archive, and manage the election definitions.

Verity User Management enables users with the correct role and permissions to create and manage user accounts within the **Verity Voting** system for the local workstation in a standalone configuration, or for the network in a networked configuration.

Verity Desktop enables users, with the correct roles, to set the workstations' date and time, gather **Verity** application hash codes (in order to validate the correctness of the installed applications), and access to the Windows desktop.

Verity Data provides the user with controls for entering and proofing data and audio. **Verity Data** also performs validation on the exported information to ensure that it is ready for use in **Verity Build**.

Verity Build opens the election to proof data, view reports, and print ballots, and allows for configuring and programming the **Verity Scan** digital scanners, **Verity Touch Writer** BMD, **Verity Controller/Touch Writer Duo** BMD devices, **Verity Print**, and **Verity Controller/Touch** series DRE devices, as well as producing the election definition and auditing reports.

Verity Central is a high-speed, central digital ballot scanning system used for high-volume processing of ballots (such as vote by mail). Verity Central is based on COTS scanning hardware coupled with custom **Hart**-developed ballot processing application software which resides on an attached workstation.

Verity Count is an application that tabulates election results and generates reports. **Verity Count** can be used to collect and store all election logs from every **Verity** component/device used in the election, allowing for complete election audit log reviews.

Verity Relay provides remote transmission capability to the **Verity Voting 2.4** system. Utilizing an optional modem with **Verity Scan**, at close of polls, results are transmitted from the polling place device to the **Verity Relay** workstation.

Verity AutoBallot is an optional barcode scanner kit for **Verity Controller, Verity Print,** and **Verity Touch Writer** that allows air-gapped integration between an e-pollbook check-in process and the task of selecting the ballot style for the voting system.

Certified System before Modification (If applicable):
Verity Voting 2.3

Anomalies and/or Additions addressed in Verity Voting 2. 4:
The modifications to Verity 2.4 address multiple aspects of the system, including state specific features, new features for all devices and applications, security enhancements, completion of

the "Smart Panel" tablet hardware rollout, corrections to defects, as well as associated documentation updates:

- See Certification Test Report, pages 24-28 for detailed changes.

Mark definition:

System supports marks that cover a minimum of 4% of the rectangular marking area.

Tested Marking Devices:

System supports Black and Blue ballpoint pens; testing was performed with black, blue, dark blue, pink, light green, green, orange, and red pens, as well as #2 pencil lead.

Language capability:

System supports English, Spanish, Chinese, Japanese, Korean, Khmer, Thai, Vietnamese, Tagalog, Ilocano, and Hindi.

Components Included:

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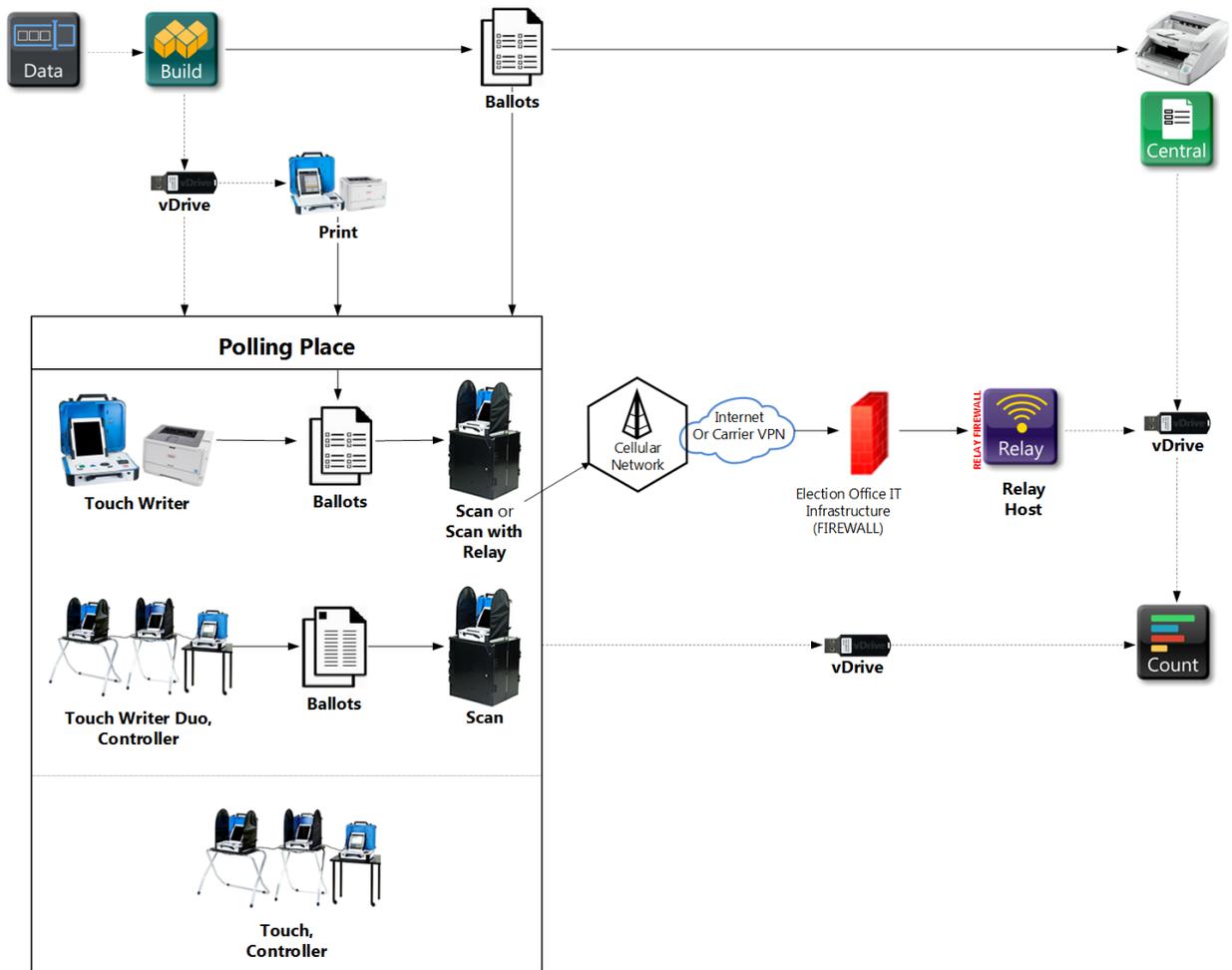
Proprietary Software

System Component	Software or Firmware Version	Hardware Version	Operating System or COTS	Comments
Verity Data	2.4.2			Data management software
Verity Build	2.4.2			Election definition software
Verity Central	2.4.2			High speed digital scanning software
Verity Count	2.4.2			Tabulation and reporting software
Verity Relay	2.4.2			Data transmission software (receiving station)
Verity Print	2.4.2			On-demand ballot printing device firmware
Verity Scan	2.4.2			Digital scanning device firmware
Verity Touch Writer	2.4.2			Ballot marking device
Verity Touch Writer Duo	2.4.2			Ballot marking device, with internal COTS ballot summary printer and optional audio tactile interface
Verity Controller	2.4.2			Polling place management device
Verity Touch/Verity Touch with Access	2.4.2			Direct Recording Electronic (DRE) voting device. Software also supports the Verity Touch with Access devices, an Accessible DRE voting device, with audio tactile interface
Verity Device Microcontroller	V17			Firmware for Verity devices
Verity Touch Writer Duo Microcontroller	V1			Firmware for Verity Touch Writer Duo

COTS Software and Firmware

Description	Version
Verity Data, Build, Central, Count, Relay, Print, Scan – Paper Ballot Scanner (additional item below), Touch Writer – Electronic BMD Device, Touch Writer Duo – Electronic BMD Device, Controller, Touch – Electronic DRE Device, Touch with Access – Electronic DRE Device	
Microsoft Windows Embedded Standard 7, Service Pack 1	6.1.7601
Microsoft SQL Server 2012 for Embedded Systems License	11.00.2100
McAfee Application Control for Devices (McAfee Solidifier)	8.21.1-143
Verity Scan – Paper Ballot Scanner	
Nuance Western OCR, Desktop, OEM	V20

Hardware

Description	Version
Verity Print – Ballot Printer	3005356 Rev E
Verity Print – Ballot Printer	3005856 Rev B
Verity Scan – Paper Ballot Scanner	3005350 Rev I
Verity Scan – Paper Ballot Scanner	3005800 Rev B

Description	Version
Verity Touch Writer – Electronic BMD Device	3005352 Rev H
Verity Touch Writer – Electronic BMD Device	3005852 Rev B
Verity Touch Writer Duo – Electronic BMD Device	3005700 Rev B
Verity Controller – Networked Centralized Management Device	3005351 Rev E
Verity Controller – Networked Centralized Management Device	3005825 Rev B
Verity Touch – Electronic DRE Device	3005355 Rev E
Verity Touch – Electronic DRE Device	3005854 Rev B
Verity Touch with Access – Electronic DRE Device	3005353 Rev F
Verity Touch with Access – Electronic DRE Device	3005853 Rev B

COTS Equipment

Description	Version
Verity Data, Build	
Verity Data and Build Applications and Workstation Kit • HP Z240 Workstation • HPZ230 Workstation supported for existing customers only • Verity Data Software • Verity Build Software	C
OKI Data C831dn Color Printer for existing customers only	N35100A
OKI Data C844dn Color Printer	N35301A
OKI Data C911dn color Printer for existing customers only	N36100A
OKI Data C931e Color Printer	N36100A
OKI Data B432dn Mono Report and Ballot Printer	N22500A
OKI Data B431d Mono Report Printer for existing customers only	N22202A
8-port Ethernet Switch	1405-8GV3
Vinpower Digital USB Duplicator 7-targets	USBShark-7T-BK
Vinpower Digital USB Duplicator 23-targets	USBShark-23T-BK
Verity Central	
Verity Central Applications and Workstation Kit • HP Z240 Workstation • HP Z230 Workstation supported for existing customers only • Verity Central Software	C
Canon DR-G1100 High-Speed Scanner	M111181
Canon DR-G1130 High-Speed Scanner	M111171
Canon DR-G2110 High-Speed Scanner	6130030
Canon DR-G2140 High-Speed Scanner	6130020
OKI Data B432dn Mono Printer Report Printer	N22500A
OKI Data B431d Mono Report Printer for existing customers only	N22202A
8-port Ethernet Switch	1405-8GV3
Verity Count	
Verity Count Applications and Workstation Kit • HP Z240 Workstation or HP Z230 Workstation • HP Z230 Workstation supported for existing customers only • Verity Count Software	C
OKI Data B432dn Mono Printer Report Printer	N22500A
OKI Data B431d Mono Report Printer for existing customers only	N22202A
8-port Ethernet Switch	1405-8GV3
Verity Relay	
Verity Relay Applications and Workstation Kit • HP Z240 Workstation	A

• Verity Relay Software	
OKI Data B432dn Mono Printer Report Printer	N22500A
OKI Data B431d Mono Report Printer for existing customers only	N22202A
Description	**Version**
8-port Ethernet Switch	1405-8GV3
Verity Print	
OKI Data C831dn Color Printer for existing customers only	N35100A
OKI Data B432dn Mono Printer Report Printer	N22500A
OKI Data C844dn Color Printer	N35301A
OKI Data B431d Mono Report Printer for existing customers only	N22202A
Optional AutoBallot Barcode Scanner Kit – Includes 2d barcode scanner: • Hart part number: 1003672 • Motorola/Zebra part number: DS4308	B
Verity Scan – Paper Ballot Scanner	
Verity Ballot Box	B
Optional Relay Accessory Kit (4G LTE Cat-M1)	A
Optional Relay Accessory Kit (Aeris, EV-DO) for existing customers only	A
Optional Relay Accessory Kit (HSDPA+, Global) for existing customers only	A
Verity Touch Writer – Electronic BMD Device	
OKI Data B432dn Mono Printer Report Printer	N22500A
OKI Data B431d Mono Report Printer for existing customers only	N22202A
Accessible Voting Booth	D
Optional AutoBallot Barcode Scanner Kit – Includes 2d barcode scanner: • Hart part number: 1003672 Motorola/Zebra part number: DS4308	B
Headphones • Brand: V7, part number HA300-2NP	2005230
Verity Touch Writer Duo – Electronic BMD Device	
Brother PJ700 Series Thermal Printer	PJ723
Accessible Voting Booth with ATI Tray	D
Standard Voting Booth	D
Optional Detachable ATI Kit	A
Optional Headphones for ATI Kit Brand: V7, part number HA300-2NP	2005230
Verity Controller	
Optional AutoBallot Barcode Scanner Kit – Includes 2d barcode scanner: • Hart part number: 1003672 Motorola/Zebra part number: DS4308	B
Verity Touch – Electronic DRE Device	
Standard Voting Booth	D
Verity Touch with Access – Electronic DRE Device	
Accessible Voting Booth	D
Headphones Brand: V7, part number HA300-2NP	2005230

System Limitations

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

Element	Testing Limit/Requirement Z240 64GB Systems (does not include Data/Build/Count combined system)	Testing Limit/Requirement Z230 32GB Systems (includes Z240 64GB Data/Build/Count combined system)
Precincts	3,000	2,000
Splits per Precinct	20	20
Total Precincts + Splits in an election	3,000	2,000
Districts for voting devices and applications	400	75
Parties in a General Election	24	24
Parties in a Primary Election	10	10
Contests in an election	2,000	200
Choices in a single contest	300	75
Total contest choices (voting positions) in an election	5,000	600
Max length of choice name	100 characters	100 characters
Max write-in length	25 characters	25 characters
Voting Types	5	5
Max polling places per election	3,050	1,200
Max devices per election	N/A	N/A
vDrive capacity – Scan voting device	9,999 sheets per vDrive	9,999 sheets per vDrive
vDrive capacity – Verity Central	80,000 sheets per vDrive	80,000 sheets per vDrive
Number of voters definable per election	2,500,000	1,000,000
Number of total ballots cast per election	1,750,000	1,000,000
Max number of sheets per ballot	4 sheets	4 sheets
Max number of sheets – Verity Scan	9,999	9,999
Max number of CVRs – Verity County	7,000,000	7,000,000
Ballot Sizes	8.5"x11", 8.5"x14", 8.5"x17", 8.5"x20", 11"x17" (Central only)	8.5"x11", 8.5"x14", 8.5"x17", 8.5"x20", 11"x17" (Central only)
Number of languages in a single election (including English)	11	11

Functionality

2005 VVSG Supported Functionality Declaration

Feature/Characteristic	Yes/No	Comment
Voter Verified Paper Audit Trails		
VVPAT	No	
Accessibility		
Forward Approach	Yes	
Parallel (Side) Approach	Yes	
Closed Primary		

Feature/Characteristic	Yes/No	Comment
Primary: Closed	Yes	Supports standard closed primary and modified closed primary
Open Primary		
Primary: Open Standard (provide definition of how supported)	Yes	Open Primary
Primary: Open Blanket (provide definition of how supported)	Yes	General "top two"
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.	No	By default, the number of write-ins available in a contest is zero, users may increment as necessary
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	Rotation by precinct and precinct split
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:		
Cross party endorsements, multiple parties endorse one candidate.	Yes	
Split Precincts:		
Split Precincts: Multiple ballot styles	Yes	
Split Precincts: P & M system support splits with correct contests and ballot identification of each split	Yes	
Split Precincts: DRE matches voter to all applicable races.	Yes	

Feature/Characteristic	Yes/No	Comment
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)	Yes	
Recall Issues with Options: Two contests with access to a second contest conditional upon a specific vote in contest one. (Must vote Yes to vote in 2nd contest.)	Yes	
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.)	Yes	
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.	Yes	
Ranked Order Voting		
Ranked Order Voting: Voters can write in a ranked vote.	Yes	
Ranked Order Voting: A ballot stops being counting when all ranked choices have been eliminated	N/A	Tabulation rules are unique per jurisdiction
Ranked Order Voting: A ballot with a skipped rank counts the vote for the next rank.	N/A	Tabulation rules are unique per jurisdiction
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	N/A	Tabulation rules are unique per jurisdiction
Ranked Order Voting: A ballot with two choices ranked the same, stops being counted at the point of two similarly ranked choices.	Yes	
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.	N/A	Tabulation rules are unique per jurisdiction
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	

Feature/Characteristic	Yes/No	Comment
Provisional/Challenged Ballots: A voted provisional ballots is included in the tabulation, but is identified and can be subtracted in the central count	Yes	
Provisional/Challenged Ballots: Provisional ballots maintain the secrecy of the ballot.	Yes	
Overvotes (must support for specific type of voting system)		
Overvotes: P & M: Overvote invalidates the vote. Define how overvotes are counted.	Yes	If the system detects more than the valid number of marks in a contest, it is counted as an overvote
Overvotes: DRE: Prevented from or requires correction of overvoting.	Yes	
Overvotes: If a system does not prevent overvotes, it must count them. Define how overvotes are counted.	Yes	If the system detects more than the valid number of marks in a contest, it is counted as an overvote
Overvotes: DRE systems that provide a method to data enter absentee votes must account for overvotes.	Yes	
Undervotes		
Undervotes: System counts undervotes cast for accounting purposes	Yes	
Blank Ballots		
Totally Blank Ballots: Any blank ballot alert is tested.	Yes	
Totally Blank Ballots: If blank ballots are not immediately processed, there must be a provision to recognize and accept them	Yes	
Totally Blank Ballots: If operators can access a blank ballot, there must be a provision for resolution.	Yes	
Networking		
Wide Area Network – Use of Modems	Yes	With optional Verity Relay
Wide Area Network – Use of Wireless	Yes	With optional Verity Relay
Local Area Network – Use of TCP/IP	Yes	
Local Area Network – Use of Infrared	No	
Local Area Network – Use of Wireless	No	
FIPS 140-2 validated cryptographic module	Yes	
Used as (if applicable):		
Precinct counting device	Yes	
Central counting device	Yes	

Baseline Certification Engineering Change Orders (ECO)

This table depicts the ECOs certified with the voting system. This includes ECOs approved and incorporated following the certification of the certified system before modification, Verity Voting 2.3.

Change ID	Date	Component	Description
ECO-01325	04/15/2019	Verity Scan	Existing cellular USB dongles are end-of-life and replaced with the MTD-MNA1 model.
ECO-01326	06/20/2019	Verity Touch Writer, Verity Touch, Verity Touch with Access, Verity Controller, Verity Touch Writer Duo, Verity Scan, and Verity Print	Clerical corrections and manufacturing improvements.
ECO-01330	04/11/2019	Verity Touch Writer Duo, Verity Scan, and Verity Controller	Verity EAC logo and preventative maintenance label updates.
ECO-01351	08/20/2019	Verity Touch Writer, Verity Touch, Verity Touch with Access, Verity Controller, Verity Touch Writer Duo, Verity Scan, and Verity Print	Reduce size of the Verity device shipping box.