



United States Election Assistance Commission

Certificate of Conformance

Hart InterCivic Verity 2.0



The voting system identified on this certificate has been evaluated at an accredited voting system testing laboratory for conformance to the 2005 *Voluntary Voting System Guidelines (2005 VVSG)* . 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

Model or Version: 2.0

Name of VSTL: SLI Global

EAC Certification Number: HRTVerity2.0

Date Issued: 4/27/2016

Executive Director
U.S. Election Assistance Commission

Scope of Certification Attached

Manufacturer: Hart InterCivic
System Name: Verity Voting 2.0
Certificate: HRT-Verity-2.0

Laboratory: SLI Global
Standard: 2005 VVSG
Date: 04/27/2016



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 2.0 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 2.0 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.

- Configuring and programming the Verity Print ballot production device.
- Preparing media for voting devices.
- Configuring and programming the Verity Scan digital scanners.
- Configuring and programming the Verity Touch Writer BMD devices.
- Configuring and programming the Verity Touch and Verity Controller DRE voting components.
- Producing the election definition and auditing reports.
- Providing administrative management functions for user, database, networking and system management.
- Tabulation of Cast Vote Records from Verity Scan, Verity Central, and Verity Controller devices
- 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.
- Auditing of election results including ballot images, cast vote records, and log files.

Verity Scan is a digital scanning device that is used in conjunction with an external ballot box. The unit is designed to scan marked paper ballots, interpret and record voter marks on the paper ballot and deposit the ballots into the secure ballot box. Verity Scan is capable of tabulating votes, or producing a ballot count report which includes quantities of ballots scanned.

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

Verity Controller is a polling place device that is used to activate and accumulate results from a range of 1 to 12 Verity Touch/ Verity Touch with Access DREs daisy chained to Verity Controller.

Verity Touch is a Direct Recording Electronic (DRE) device that allows a voter to cast his/her vote electronically via touch screen.

Verity Touch with Access is a Direct Recording Electronic (DRE) device that allows a voter to cast his/her vote electronically via touch screen, or via the Verity Access Audio Tactile Interface.

Verity Print is an on-demand ballot printing solution for paper ballots.

Verity Election Management allows users to import and manage elections. Imported elections are available through the “Elections” chevron in Build. Users can also delete, archive, restore, and rename the elections.

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 Windows desktop.

Verity Data provides the users capabilities to input jurisdiction- and election-specific data for paper and electronic ballots, as well as audio for accessible electronic ballots. Verity Data also includes capabilities to allow proofing of data, layout, and audio created. Verity Data also performs validation on the exported information to ensure that it is ready for use in Verity Build.

Verity Build allows users to proof data, view reports, create election definitions, print ballots, and create election media (vDrives). Build also allows users to configure settings for Verity Scan digital scanners, Verity Touch Writer BMD devices, and Verity Controller, Touch and Touch with Access devices.

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

Verity Count is an application that tabulates election results and generates reports. Verity Count can also 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.

Mark definition:

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

Tested Marking Devices:

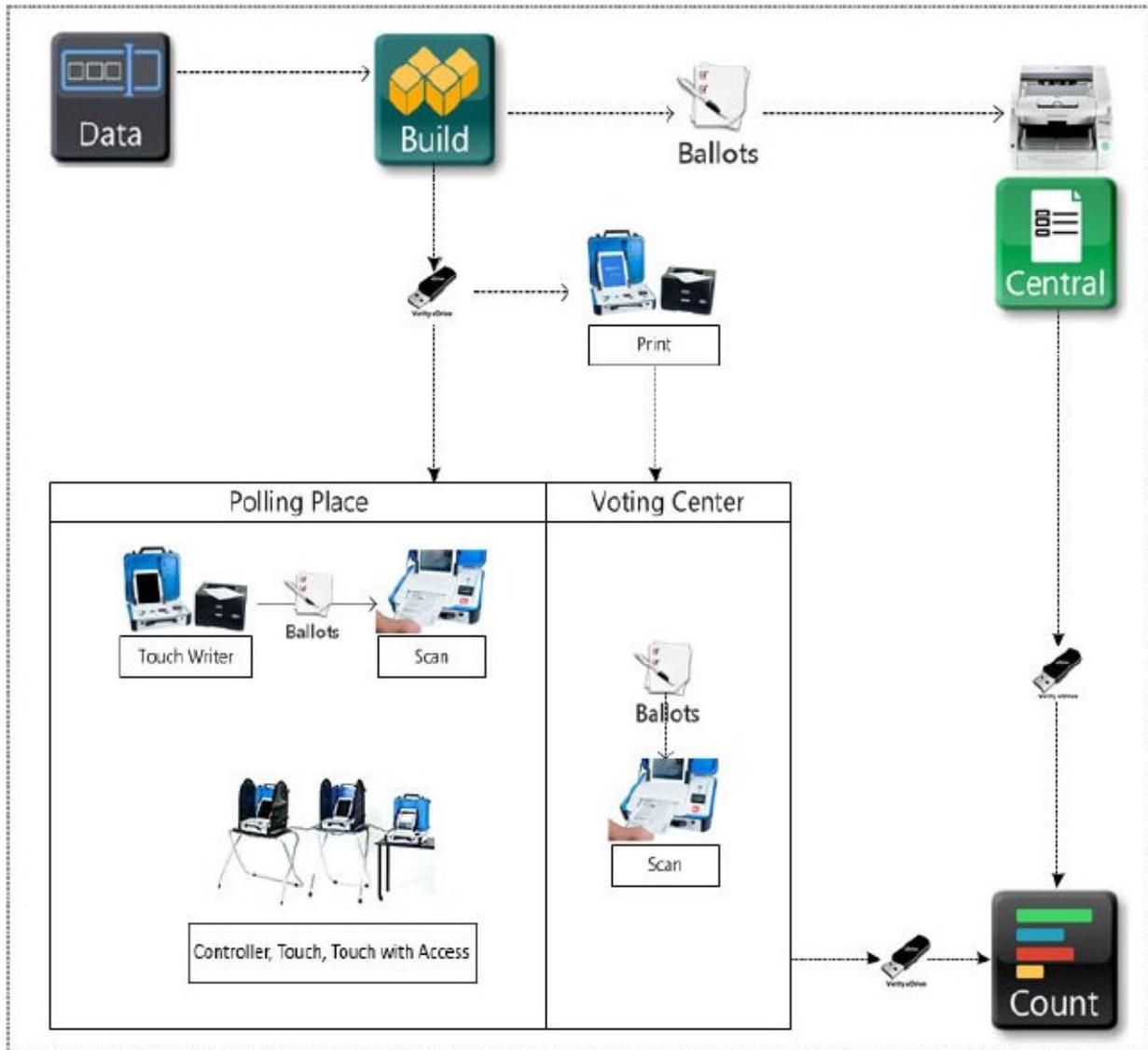
System supports Black and Blue ball point pens; testing was performed with black, blue, orange, and red pens.

Language capability:

System supports English and Spanish; system is capable of supporting other languages, including ideographic languages.

Components Included:

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



System Component	Software or Firmware Version	Hardware Version	Operating System or COTS	Comments
Verity Data	2.0.2			Data management software
Verity Build	2.0.2			Election definition software
Verity Central	2.0.2			High speed digital scanning software
Verity Count	2.0.2			Tabulation and reporting software
Verity Scan	2.0.3			Digital scanning device firmware
Verity Touch Writer	2.0.3			Accessible BMD firmware

System Component	Software or Firmware Version	Hardware Version	Operating System or COTS	Comments
Verity Controller	2.0.3			DRE polling place management console firmware
Verity Touch	2.0.3			DRE firmware
Verity Touch with Access	2.0.3			DRE firmware
Verity Print	2.0.3			On demand ballot printing device firmware
Verity Device Microcontroller	V17			Firmware for Verity devices
Verity Operating System– Data, Build, Central, Count	6.1.7601		Microsoft Operating System	Windows Embedded Standard 7 w/ service pack 1, 64 bit
Application control – Data, Build, Central, Count, Print, Scan, Touch Writer, Controller, Touch, Touch with Access, Print	6.1.1.369		COTS: McAfee Application Control	Configured for Verity workstations and devices
Framework – Data, Build, Central, Count, Scan, Touch Writer, Controller, Touch, Touch with Access, Print	4.0.30319; 4.5.50709		COTS: Microsoft .NET 4.x Framework	Unmodified
Database – Data, Build, Central & Count	11.00.2100		COTS: Microsoft SQL Server 2012 for Embedded Systems	Unmodified
Runtime Libraries – Data, Build, Central, Count, Scan, Touch Writer, Controller, Touch, Touch with Access, Print	8.0.56336		COTS: Microsoft Visual Studio C++ 2005	Unmodified
Runtime Libraries – Data, Build, Central, Count, Scan, Touch Writer, Controller, Touch, Touch with Access, Print	10.0.40219		COTS: Microsoft Visual Studio C++ 2010	Unmodified
Verity Device Operating System – Scan, Touch Writer, Controller, Touch, Touch with Access, Print	6.1.7601		Microsoft Operating System	Windows Embedded Standard 7 w/ service pack 1, 32 bit

System Component	Software or Firmware Version	Hardware Version	Operating System or COTS	Comments
Database –Print, Scan, Touch Writer, Controller, Touch, Touch with Access	11.00.2100		COTS: Microsoft SQL Server Express	Unmodified
Verity Scan		Revision C		
Verity Touch Writer		Revision C		
Verity Print		Revision B		
Verity Controller		Revision B		
Verity Touch		Revision B		
Verity Touch with Access		Revision B		
Verity Key		N/A	COTS: Maxim iButton	Security key used with voting system
Verity vDrive		N/A	COTS: Apacer	4GB USB flash drive, portable electronic media used for transportation of voting system data
Ballot/Report Printer – Data, Build, Central, Count, Touch Writer, Print		B431d	COTS: Okidata	
Ballot Printer – Build, Print		C911	COTS: Okidata	
Ballot Printer – Build, Print		C831	COTS: Okidata	
Scanner - Central		i5600	COTS: Kodak	
Scanner - Central		DR-G1100	COTS: Canon	
Scanner - Central		DR-G1130	COTS: Canon	
Workstation – Data, Build, Central & Count			COTS: Intel – Windows Workstation	Recommended specs: 3.0GHz, Quad Core Memory – 8GB Hard Drive –RAID-Level 1 Ethernet Port – 100Mb/1Gb USB Ports Video Card - Integrated Graphics Keyboard - USB Keyboard Mouse - USB Mouse Wireless telecommunications not configured or implemented.

System Component	Software or Firmware Version	Hardware Version	Operating System or COTS	Comments
Monitor – Data, Build, Central & Count				Recommended specs: Aspect Ratio - Widescreen (16:9) Minimum resolution 1366x768

System Limitations

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

Element	Limit Requirement
Precincts	2,000
Splits per Precinct	20
Total Precincts + Splits in an election	2,000
Districts For voting devices and applications	75
Parties in a General Election	24
Parties in a Primary Election	10
Contests and Propositions combined	200
Contest Choices in a Contest	75
Total Contest Choices (voting positions) in an election	600
Maximum length of contestant name	100 characters
Maximum write-in length	25 characters
Ballot Styles	N/A
Voting Types	5
Maximum Polling Places per election	1200
Maximum devices per election	2400
Maximum number of central count scanners in a single network	4
Media Device – Scan voting device	9999 sheets per vDrive
Media Device – Central application	80000 sheets per vDrive
Number of voters definable per election	1000000
Max. sheets per ballot	4 sheets
Scan - single sheet ballot	9999 Ballots
Scan - two sheet ballot	4999 Ballots
Scan - three sheet ballot	3333 Ballots
Scan – four sheet ballot	2499 Ballots
Central	1000000 Ballots
Count	4000000 CVRs, 1200 vDrives
Ballot Sizes	8.5" x 11", 8.5" x 14", 8.5" x 17", 8.5" x 19", 11" x 17"

Functionality

2005 VVSG Supported Functionality Declaration

Feature/Characteristic	Yes/No	Comment
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Feature/Characteristic	Yes/No	Comment
Voter Verified Paper Audit Trails		
VVPAT	N/A	
Accessibility		
Forward Approach	Yes	
Parallel (Side) Approach	Yes	
Closed Primary		
Primary: Closed	Yes	
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.	No	
Split Precincts:		
Split Precincts: Multiple ballot styles	Yes	

Feature/Characteristic	Yes/No	Comment
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)	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 2 nd 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 2 nd 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.	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		

Feature/Characteristic	Yes/No	Comment
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	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	DRE prevents overvotes
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	No	
Wide Area Network – Use of Wireless	No	
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	