

Test Case Name:		PCA System Configuration	T/C #:	PCA Review
Description:		This is a checklist of the physical attributes of the voting system as defined by the vendor. This is a comparison of the complete delivered system to the vendor documentation and receipt for testing.	Status:	Not Complete
Environment:		See the System Configuration tab.	Criteria:	
Start Conditions:		1) The vendor has supplied all applicable documentation to SLI to complete their portion of the PCA effort. 2) Identify all system configurations used in this test effort on the System Configurations tab. 3) Environmental: Take photographs of all system hardware components.		
Instructions		To complete the Physical Configuration Audit results, use the vendor's technical documentation for identifying all hardware that interfaces with software. 1. Enter X in the Accepted column if hardware requirement is documented or after required hardware test is completed. 2. Enter X in the Rejected column if the hardware requirement is not documented or not fully tested. 3. Enter X in the NT column for a hardware requirement outside the scope of the certification. 4. Enter X in the N/A column if there is a hardware requirement that is not applicable to a specific voting system design (DRE, Precinct or Central Count Scanner, etc.) N/A also applies if the hardware requirement is supported but is not part of this certification.		

Test Information				
Name of Responsible Reviewer:		D. Forester	Date:	9-Mar-2015
Configuration Identification:				

91	Review Sections	Number of steps complete by status:	89	0	0	1	99%
	Physical Configuration Audit vol 1:9.7.1.c	Expected Result	Accepted	Rejected	NT	N/A	Comments/Date/Tester
	VVSG Req. 2.1.2 Accuracy						
2.1.2.d	Memory hardware, such as semiconductor devices and magnetic storage media, must be accurate. The design of equipment in all voting systems shall provide for the highest possible levels of protection against mechanical, thermal, and electromagnetic stresses that impact system accuracy. Section 4 provides additional information on susceptibility requirements. To ensure vote accuracy, all systems shall: Include control logic and data processing methods incorporating parity and check-sums (or equivalent error detection and correction methods) to demonstrate that the system has been designed for accuracy	Identify check-sums	X				
	VVSG Req. 4 Hardware Requirement						

4	<p>This section contains the requirements for the machines and manufactured devices that are part of a voting system. It specifies minimum values for certain performance characteristics; physical characteristics; and design, construction, and maintenance characteristics for the hardware and selected related components of all voting systems, such as:</p> <ul style="list-style-type: none"> • Ballot printers • Ballot cards and sheets • Ballot displays • Voting devices, including ballot marking devices and DRE recording devices • Voting booths and enclosures • Ballot boxes and ballot transfer boxes • Ballot readers • Computers used to prepare ballots, program elections, consolidate and report votes, and perform other elections management activities • Electronic ballot recorders • Electronic precinct vote control units • Removable electronic data storage media • Servers • Printers 	Identified in vendor documentation.	X					
VVSG Req. 4.2, 4.2.1, 4.2.2, 4.2.3 Physical Characteristics								
4.2	This subsection covers physical characteristics of all voting systems and components that affect their general utility and suitability for election operations.							
4.2.1	There is no numerical limitation on the size of any voting equipment, but the size of each voting machine should be compatible with its intended use and the location at which the equipment is to be used.	Size is compatible.	X					
4.2.2	There is no numerical limitation on the weight of any voting equipment, but the weight of each voting machine should be compatible with its intended use and the location at which the equipment is to be used.	Weight is compatible.	X					
4.2.3.a	All precinct-voting systems shall: Provide a means to safely and easily handle, transport, and install voting equipment, such as wheels or a handle or handles	A means for safe handling and transportation is provided.	X					
4.2.3.b	<p>All precinct-voting systems shall: Be capable of using, or be provided with, a protective enclosure rendering the equipment capable of withstanding:</p> <p>I. Impact, shock and vibration loads associated with surface and air transportation</p> <p>ii. Stacking loads associated with storage</p>	<p>The protective enclosure for transportation is provided.</p> <p>The protective enclosure able to withstand stacking is provided.</p>	X					
VVSG Req. 4.3.1 Materials, Processes and Parts								

4.3.1	The approach to system design is unrestricted, and may incorporate any form or variant of technology capable of meeting the voting systems requirements and standards. Precinct count systems shall be designed in accordance with best commercial practice for microcomputers, process controllers, and their peripheral components. Central count voting systems and equipment used in a central tabulating environment shall be designed in accordance with best commercial and industrial practice.		X				
4.3.1.a	All voting systems shall: Be designed and constructed so that the frequency of equipment malfunctions and maintenance requirements are reduced to the lowest level consistent with cost constraints	Equipment malfunctions and maintenance requirements are not deemed excessive.	X				
4.3.1.b	All voting systems shall: Include, as part of the accompanying Technical Data Package, an approved parts list	Approved parts list included.	X				
4.3.1.c	All voting systems shall: Exclude parts or components not included in the approved parts list	No parts or components not in approved parts list.	X				
VVSG Req. 4.3.2 Durability							
4.3.2	All voting systems shall be designed to withstand normal use without deterioration and without excessive maintenance cost for a period of ten years.	Identified in vendor documentation.	X				
VVSG Req. 4.3.3 Reliability							
4.3.3	The reliability of voting system devices shall be measured as Mean Time Between Failure (MTBF) for the system submitted for testing. MTBF is defined as the value of the ratio of operating time to the number of failures which have occurred in the specified time interval. A typical system operations scenario consists of approximately 45 hours of equipment operation, consisting of 30 hours of equipment set-up and readiness testing and 15 hours of elections operations. For the purpose of demonstrating compliance with this requirement, a failure is defined as any event which results in either the: <ul style="list-style-type: none"> • Loss of one or more functions • Degradation of performance such that the device is unable to perform its intended function for longer than 10 seconds The MTBF demonstrated during certification testing shall be at least 163 hours	Retention of all functions.	X				Cascade - 163hr test Precinct count system Central count systems
VVSG Req. 4.3.4, 4.3.4.1 Maintainability Physical Attributes							

4.3.4	<p>Maintainability represents the ease with which maintenance actions can be performed based on the design characteristics of equipment and software and the processes the vendor and election officials have in place for preventing failures and for reacting to failures. Maintainability includes the ability of equipment and software to self-diagnose problems and make non-technical election workers aware of a problem. Maintainability addresses all scheduled and unscheduled events, which are performed to:</p> <ul style="list-style-type: none"> • Determine the operational status of the system or a component • Adjust, align, tune or service components • Repair or replace a component having a specified operating life or replacement interval • Repair or replace a component that exhibits an undesirable predetermined physical condition or performance degradation • Repair or replace a component that has failed • Verify the restoration of a component or the system to operational status <p>Maintainability shall be determined based on the presence of specific physical attributes that aid system maintenance activities, and the ease with which system maintenance tasks can be performed by the test lab. Although a more quantitative basis for assessing maintainability, such as the Mean Time to</p>		X					
4.3.4.1.a	<p>The following physical attributes will be examined to assess reliability: Presence of labels and the identification of test points</p>	Presence of labels, identification of test points.	X					
4.3.4.1.b	<p>The following physical attributes will be examined to assess reliability: Provision of built-in test and diagnostic circuitry or physical indicators of condition</p>	Provisioning of built-in test, diagnostic circuitry or physical indicators of condition.	X					
4.3.4.1.c	<p>The following physical attributes will be examined to assess reliability: Presence of labels and alarms related to failures</p>	Presence of labels, alarms related to failures.	X					
4.3.4.1.d	<p>The following physical attributes will be examined to assess reliability: Presence of features that allow non-technicians to perform routine maintenance tasks (such as update of the system database)</p>	Presence of features to perform routine maintenance tasks.	X					
	<p>VVSG Req. 4.3.4, 4.3.4.2 Maintainability Additional Attributes</p>							

4.3.4	<p>Maintainability represents the ease with which maintenance actions can be performed based on the design characteristics of equipment and software and the processes the vendor and election officials have in place for preventing failures and for reacting to failures. Maintainability includes the ability of equipment and software to self-diagnose problems and make non-technical election workers aware of a problem. Maintainability addresses all scheduled and unscheduled events, which are performed to:</p> <ul style="list-style-type: none"> • Determine the operational status of the system or a component • Adjust, align, tune or service components • Repair or replace a component having a specified operating life or replacement interval • Repair or replace a component that exhibits an undesirable predetermined physical condition or performance degradation • Repair or replace a component that has failed • Verify the restoration of a component or the system to operational status <p>Maintainability shall be determined based on the presence of specific physical attributes that aid system maintenance activities, and the ease with which system maintenance tasks can be performed by the test lab. Although a more quantitative basis for assessing maintainability, such as the Mean Time to Repair the system is desirable, the certification of a system is conducted</p>		X				
4.3.4.2.a	<p>The following additional attributes will be considered to assess system maintainability: Ease of detecting that equipment has failed by a non-technician</p>	Non-technician can easily detect that equipment has failed.	X				
4.3.4.2.b	<p>The following additional attributes will be considered to assess system maintainability: Ease of diagnosing problems by a trained technician</p>	Trained technicians can easily diagnose problems and sufficient documentation is present.	X				
4.3.4.2.c	<p>The following additional attributes will be considered to assess system maintainability: Low false alarm rates (i.e., indications of problems that do not exist)</p>	Few or no false alarm rates.	X				
4.3.4.2.d	<p>The following additional attributes will be considered to assess system maintainability: Ease of access to components for replacement</p>	Replacement components are easily accessed.	X				
4.3.4.2.e	<p>The following additional attributes will be considered to assess system maintainability: Ease with which adjustment and alignment can be performed</p>	Adjustments and alignments are easy to perform and sufficient documentation is present.	X				
4.3.4.2.f	<p>The following additional attributes will be considered to assess system maintainability: Ease with which database updates can be performed by a non-technician</p>	Database updates are easy to perform and sufficient documentation is present.	X				
4.3.4.2.g	<p>The following additional attributes will be considered to assess system maintainability: Adjust, align, tune or service components</p>	The ability to adjust, align, and tune service components and sufficient documentation is present.	X				
<p>VVSG Req. 4.3.5 Availability</p>							
4.3.5	<p>The availability of a voting system is defined as the probability that the equipment (and supporting software) needed to perform designated voting functions will respond to operational commands and accomplish the function. The voting system shall meet the availability standard for each of the following voting functions:</p>		X				
4.3.5.a	<p>For all paper-based systems: I. Recording voter selections (such as by ballot marking or punch) ii. Scanning the punches or marks on paper ballots and converting them into digital data</p>	Ballot marking and/or punch available. Conversion into digital data available.	X				
4.3.5.b	<p>For all DRE systems, recording and storing voter ballot selections</p>	Recording, storing the voter's ballot selections available.	X				

4.3.5.c	For precinct count systems (paper-based and DRE), consolidation of vote selection data from multiple precinct based systems to generate jurisdiction-wide vote counts, including storage and reporting of the consolidated vote data	Jurisdiction-wide vote counts available.	X				
4.3.5.d	For central-count systems (paper-based and DRE), consolidation of vote selection data from multiple counting devices to generate jurisdiction-wide vote counts, including storage and reporting of the consolidated vote data System availability is measured as the ratio of the time during which the system is operational (up time) to the total time period of operation (up time plus down time). Inherent availability (Ai) is the fraction of time a system is functional, based upon Mean Time Between Failure (MTBF) and Mean Time To Repair (MTTR), that is: $A_i = (MTBF)/(MTBF + MTTR)$ MTTR is the average time required to perform a corrective maintenance task during periods of system operation. Corrective maintenance task time is active repair time, plus the time attributable to other factors that could lead to logistic or administrative delays, such as travel notification of qualified maintenance personnel and travel time for such personnel to arrive at the appropriate site. Corrective maintenance may consist of substitution of the complete device or one of its components, as in the case of precinct count and some central count systems, or it may consist of on-site repair. <u>The voting system shall achieve at least 99 percent availability during normal</u>	Jurisdiction-wide vote counts available.	X				
4.3.5.e	Recommended number and locations of spare devices or components to be <u>kept on hand for repair purposes during periods of system operation</u>	Recommendations for on-hand spare devices or components is available.	X				
4.3.5.f	Recommended number and locations of qualified maintenance personnel who need to be available to support repair calls during system operation	Recommendations for number of maintenance personnel is available.	X				
4.3.5.g	Organizational affiliation (i.e., jurisdiction, vendor) of qualified maintenance personnel	Organizational affiliation available.	X				
VVSG Req. 4.3.6 Product Marking							
4.3.6.a	All voting systems shall: Identify all devices by means of a permanently affixed nameplate or label containing the name of the manufacturer or vendor, the name of the device, its part or model number, its revision letter, its serial number, and if applicable, its power requirements	Product markings are present.	X				
4.3.6.b	All voting systems shall: Display on each device a separate data plate containing a schedule for and list of operations required to service or to <u>perform preventive maintenance</u>	Task list and schedule are present.	X				
4.3.6.c	All voting systems shall: Display advisory caution and warning instructions to ensure safe operation of the equipment and to avoid exposure to hazardous electrical voltages and moving parts at all locations where operation or <u>exposure may occur</u>	Cautions or warnings are displayed.	X				
VVSG Req. 4.3.7 Workmanship							
4.3.7.a	To help ensure proper workmanship, all manufacturers of voting systems shall: Adopt and adhere to practices and procedures to ensure that their products are free from damage or defect that could make them unsatisfactory <u>for their intended purpose</u>	Products are free from damage or defects and methods for assuring this are documented.	X				

4.3.7.b	To help ensure proper workmanship, all manufacturers of voting systems shall: Ensure that components provided by external suppliers are free from damage or defect that could make them unsatisfactory for their intended purpose	Components free from damage or defects and the methods for assuring this are documented.	X				
VVSG Req. 4.3.8 Safety							
4.3.8.a	All voting systems shall meet the following requirements for safety: All voting systems and their components shall be designed to eliminate hazards to personnel or to the equipment itself	Personnel and equipment hazard free.	X				
4.3.8.b	All voting systems shall meet the following requirements for safety: Defects in design and construction that can result in personal injury or equipment damage must be detected and corrected before voting systems and components are placed into service	Any defects detected.	X				
4.3.8.c	All voting systems shall meet the following requirements for safety: Equipment design for personnel safety shall be equal to or better than the appropriate requirements of the Occupational Safety and Health Act, Code of Federal Regulations, Title 29, Part 1910	Design better than or equal to OSHA regs. (Validation shall be provide by the environmental hardware sub-contractor.)	X				
VVSG Req.							
V1-3.2.4.c	All labels, displays, controls, keys, audio jacks, and any other part of the accessible voting station necessary for the voter to operate the voting machine shall be easily legible and visible to a voter in a wheelchair with normal eyesight (no worse than 20/40, corrected) who is in an appropriate position and orientation with respect to the accessible voting station. Discussion: There are a number of factors that could make relevant parts of the accessible voting station difficult to see such as; small lettering, controls and labels tilted at an awkward angle from the voter's viewpoint, and glare from overhead lighting.	All labels, displays, controls, keys, audio jacks, etc. are easily legible and visible to a voter in a wheelchair with normal or eyesight no worse than 20/40 when in an appropriate position and orientation with respect to the accessible voting station.	X				
3.1.5.a	The voting process shall be designed to minimize perceptual difficulties for the voter. No voting machine display screen shall flicker with a frequency between 2 Hz and 55 Hz. Discussion: Aside from usability concerns, this requirement protects voters with epilepsv.	No flashing text or elements with a frequency >2Hz or <55Hz.	X				
3.1.5.b	The voting process shall be designed to minimize perceptual difficulties for the voter. Any aspect of the voting machine that is adjustable by the voter or poll worker, including font size, color, contrast, and audio volume, shall automatically reset to a standard default value upon completion of that voter's session. Discussion: The voting machine must present the same initial appearance to every voter.	Any aspect of the voting machine that is adjustable must automatically reset to default values at the completion of the voter's session.	X				
3.1.5.c	The voting process shall be designed to minimize perceptual difficulties for the voter. If any aspect of a voting machine is adjustable by the voter or poll worker, there shall be a mechanism to reset all such aspects to their default values. Discussion: The purpose is to allow a voter who has adjusted the machine into an undesirable state to reset all the aspects to begin again.	Ensure a mechanism exists to reset all aspects of the voting machine that is adjustable, to default values.	X				

3.1.5.d	<p>The voting process shall be designed to minimize perceptual difficulties for the voter. All electronic voting machines shall provide a minimum font size of 3.0 mm (measured as the height of a capital letter) for all text.</p>	<p>Minimum font size of 3.0 mm for all text. (measured as the height of a capital letter) (Use Appendix D as a guide.)</p>	X					
3.1.5.e	<p>The voting process shall be designed to minimize perceptual difficulties for the voter. All voting machines using paper ballots should make provisions for voters with poor reading vision. Discussion: Possible solutions include: (a) providing paper ballots in at least two font sizes, 3.0-4.0mm and 6.3-9.0mm and (b) providing a magnifying device.</p>	<p>All voting machines using paper ballots have made provisions for voters with poor reading vision. (Use Appendix D as a guide.)</p>	X					
3.1.5.f	<p>The voting process shall be designed to minimize perceptual difficulties for the voter. The default color-coding shall maximize correct perception by voters with color blindness. Discussion: There are many types of color blindness and no color-coding can, by itself, guarantee correct perception for everyone. However, designers should take into account such factors as: red-green color blindness is the most common form; high luminosity contrast will help colorblind voters to recognize visual features; and color-coded graphics can also use shape to improve the ability to distinguish certain features.</p>	<p>Default color-coding is maximized for correct perception by voters with color blindness. (Use Appendix D as a guide.)</p>	X					
3.1.5.g	<p>The voting process shall be designed to minimize perceptual difficulties for the voter. Color coding shall not be used as the sole means of conveying information, indicating an action, prompting a response, or distinguishing a visual element. Discussion: While color can be used for emphasis, some other non-color mode must also be used to convey the information, such as a shape or text style. For example, red can be enclosed in an octagon shape.</p>	<p>Color coding is not the only means of conveying information, indicating an action, prompting a response, or distinguishing a visual element. (Use Appendix D as a guide.)</p>	X					
3.1.5.h	<p>The voting process shall be designed to minimize perceptual difficulties for the voter. All text intended for the voter should be presented in a sans serif font. Discussion: Experimentation has shown that users prefer such a font and the legibility of serif and sans serif fonts is equivalent.</p>	<p>All text intended for the voter is presented in Sans Serif font. (Use Appendix D as a guide.)</p>	X					
3.1.5.i	<p>The voting process shall be designed to minimize perceptual difficulties for the voter. The minimum figure-to-ground ambient contrast ratio for all text and informational graphics (including icons) intended for the voter shall be 3:1.</p>	<p>The minimum figure-to-ground ambient contrast ratio for all text and graphics is 3:1. (Use Appendix D as a guide.)</p>	X					
3.1.4.e	<p>The use of color by the voting system should agree with common conventions: (a) green, blue or white is used for general information or as a normal status indicator; (b) amber or yellow is used to indicate warnings or a marginal status; (c) red is used to indicate error conditions or a problem requiring immediate attention.</p>	<p>Status displays are correctly colored. (Use Appendix D as a guide.)</p>	X					
<p>VVSG Req. 4.1.2 Environmental Requirements</p>								

4.1.2	<p>The environmental requirements for voting systems include shelter, space, furnishings and fixtures, supplied energy, environmental control, and external telecommunications services. Environmental conditions applicable to the design and operation of voting systems consist of the following categories:</p> <ul style="list-style-type: none"> • Natural environment, including temperature, humidity, and atmospheric pressure • Induced environment, including proper and improper operation and handling of the system and its components during the election processes • Transportation and storage • Electromagnetic signal environment, including exposure to and generation of radio frequency energy <p>All voting systems shall be designed to withstand the environmental conditions contained in the appropriate test procedures of the Guidelines. These procedures will be applied to all devices for casting, scanning and counting ballots, except those that constitute COTS devices that have not been modified in any manner to support their use as part of a voting system and that have a documented record of performance under conditions defined in the Guidelines.</p> <p>The Technical Data Package supplied by the vendor shall include a statement of all requirements and restrictions regarding environmental protection, electrical service, recommended auxiliary power, telecommunications service,</p>		X					
<p>VVSG Req. 4.1.2.1 Shelter Requirements</p>								
4.1.2.1	<p>All precinct count systems shall be designed for storage and operation in any enclosed facility ordinarily used as a warehouse or polling place, with prominent instructions as to any special storage requirements.</p>	Identified in vendor documentation.	X					
<p>VVSG Req. 4.1.2.2 Space Requirements</p>								
4.1.2.2	<p>There is no restriction on space allowed for the installation of voting systems, except that the arrangement of these systems shall not impede performance of their duties by polling place officials, the orderly flow of voters through the polling place or the ability for the voter to vote in private.</p>	Identified in vendor documentation.	X					
<p>VVSG Req. 4.1.2.3 Furnishings and Fixtures</p>								
4.1.2.3	<p>Any furnishings or fixtures provided as a part of voting systems, and any components provided by the vendor that are not a part of the voting system but that are used to support its storage, transportation or operation, shall comply with the safety design of Subsection 4.3.8.</p>	Identified in vendor documentation.	X					
<p>VVSG Req. 4.1.2.4 Electrical Supply</p>								
4.1.2.4	<p>Components of voting systems that require an electrical supply shall meet the following standards:</p>	Identified in vendor documentation.	X					
4.1.2.4.a	<p>Precinct count voting systems shall operate with the electrical supply ordinarily found in polling places (Nominal 120 Vac/60Hz/1 phase)</p>	Identified in vendor documentation.	X					
4.1.2.4.b	<p>Central count voting systems shall operate with the electrical supply ordinarily found in central tabulation facilities or computer room facilities (Nominal 120 Vac/60Hz/1, nominal 208 Vac/60Hz/3 or nominal 240 Vac/60Hz/2)</p>	Identified in vendor documentation.	X					

4.1.2.4.c	All voting machines shall also be capable of operating for a period of at least 2 hours on backup power, such that no voting data is lost or corrupted nor normal operations interrupted. When backup power is exhausted the voting machine shall retain the contents of all memories intact The backup power capability is not required to provide lighting of the voting area.	Identified in vendor documentation.	X					Test Required @ SLI
VVSG Req. 4.1.2.5 Electrical Power Disturbance								
4.1.2.5	Vote scanning and counting equipment for paper-based voting systems, and all DRE voting equipment, shall be able to withstand, without disruption of normal operation or loss of data:	Identified in vendor documentation.	X					EMCi - PASS, OCT. Verity Scan Verity Touch Writer
4.1.2.5.a	Voltage dip of 30% of nominal @10 ms;	Identified in vendor documentation.	X					EMCi - PASS, OCT. Verity Scan Verity Touch Writer
4.1.2.5.b	Voltage dip of 60% of nominal @100 ms & 1 sec	Identified in vendor documentation.	X					EMCi - PASS, OCT. Verity Scan Verity Touch Writer
4.1.2.5.c	Voltage dip of >95% interrupt @5 sec	Identified in vendor documentation.	X					EMCi - PASS, OCT. Verity Scan Verity Touch Writer
4.1.2.5.d	Surges of +15% line variations of nominal line voltage	Identified in vendor documentation.	X					EMCi - PASS, OCT. Verity Scan Verity Touch Writer
4.1.2.5.e	Electric power increases of 7.5% and reductions of 12.5% of nominal specified power supply for a period of up to four hours at each power level	Identified in vendor documentation.	X					EMCi - PASS, OCT. Verity Scan Verity Touch Writer
VVSG Req. 4.1.2.6 Electrical Fast Transient								
4.1.2.6	Vote scanning and counting equipment for paper-based systems, and all DRE equipment, shall be able to withstand, without disruption of normal operation or loss of data, electrical fast transients of:	Identified in vendor documentation.	X					EMCi - PASS, OCT. Verity Scan Verity Touch Writer
4.1.2.6.a	+ 2 kV and - 2 kV on External Power lines (both AC and DC)	Identified in vendor documentation.	X					EMCi - PASS, OCT. Verity Scan Verity Touch Writer
4.1.2.6.b	+ 1 kV and - 1 kV on Input/Output lines (signal, data, and control lines) longer than 3 meters	Identified in vendor documentation.	X					EMCi - PASS, OCT. Verity Scan Verity Touch Writer
4.1.2.6.c	Repetition Rate for all transient pulses will be 100 kHz	Identified in vendor documentation.	X					EMCi - PASS, OCT. Verity Scan Verity Touch Writer
VVSG Req. 4.1.2.7 Lightning Surge								
4.1.2.7	Vote scanning and counting equipment for paper-based systems, and all DRE equipment, shall be able to withstand, without disruption of normal operation or loss of data, surges of:	Identified in vendor documentation.	X					EMCi - PASS, OCT. Verity Scan Verity Touch Writer
4.1.2.7.a	+2 kV AC line to line	Identified in vendor documentation.	X					EMCi - PASS, OCT. Verity Scan Verity Touch Writer

4.1.2.7.b	+2 kV AC line to earth	Identified in vendor documentation.	X			EMCi - PASS, OCT. Verity Scan Verity Touch Writer
4.1.2.7.c	+ or - 0.5 kV DC line to line >10m	Identified in vendor documentation.	X			EMCi - PASS, OCT. Verity Scan Verity Touch Writer
4.1.2.7.d	+ or - 0.5 kV DC line to earth >10m	Identified in vendor documentation.	X			EMCi - PASS, OCT. Verity Scan Verity Touch Writer
4.1.2.7.e	+1 kV I/O sig/control >30m	Identified in vendor documentation.	X			EMCi - PASS, OCT. Verity Scan Verity Touch Writer
	VVSG Req. 4.1.2.8 Electrostatic Disruption					
4.1.2.8	Vote scanning and counting equipment for paper-based systems, and all DRE equipment, shall be able to withstand ± 15 kV air discharge and ± 8 kV contact discharge without damage or loss of data. The equipment may reset or have momentary interruption so long as normal operation is resumed without human intervention or loss of data. Loss of data means votes that have been completed and confirmed to the voter.	Identified in vendor documentation.	X			EMCi - PASS, OCT. Verity Scan Verity Touch Writer
	VVSG Req. 4.1.2.9 Electromagnetic Emissions					
4.1.2.9	Vote scanning and counting equipment for paper-based systems, and all DRE equipment, shall comply with the Rules and Regulations of the Federal Communications Commission, Part 15; Class B requirements for both radiated and conducted emissions.	Identified in vendor documentation.	X			EMCi - PASS, OCT. Verity Scan Verity Touch Writer
	VVSG Req. 4.1.2.10 Electromagnetic Susceptibility					
4.1.2.10	Vote scanning and counting equipment for paper-based systems, and all DRE equipment, shall be able to withstand an electromagnetic field of 10 V/m modulated by a 1 kHz 80% AM modulation over the frequency range of 80 MHz to 1000 MHz, without disruption of normal operation or loss of data.	Identified in vendor documentation.	X			EMCi - PASS, OCT. Verity Scan Verity Touch Writer
	VVSG Req. 4.1.2.11 Conducted RF Immunity					
4.1.2.11	Vote scanning and counting equipment for paper-based systems, and all DRE equipment, shall be able to withstand, without disruption of normal operation or loss of data, conducted RF energy of:	Identified in vendor documentation.	X			EMCi - PASS, OCT. Verity Scan Verity Touch Writer
4.1.2.11.a	10V rms over the frequency range 150 KHz to 80 MHz with an 80% amplitude modulation with a 1 KHz sine wave AC & DC power	Identified in vendor documentation.	X			EMCi - PASS, OCT. Verity Scan Verity Touch Writer
4.1.2.11.b	10V sig/control >3 m over the frequency range 150 KHz to 80 MHz with an 80% amplitude modulation with a 1 KHz sine wave	Identified in vendor documentation.	X			EMCi - PASS, OCT. Verity Scan Verity Touch Writer
	VVSG Req. 4.1.2.12 Magnetic Fields Immunity					
4.1.2.12	Vote scanning and counting equipment for paper-based systems, and all DRE equipment, shall be able to withstand, without disruption of normal operation or loss of data, AC magnetic fields of 30 A/m at 60 Hz.	Identified in vendor documentation.	X			EMCi - PASS, OCT. Verity Scan Verity Touch Writer

	VVSG Req. 4.1.2.13 Environmental Control - Operating Environment						
4.1.2.13	Equipment used for election management activities or vote counting (including both precinct and central count systems) shall be capable of operation in temperatures ranging from 50 to 95 degrees Fahrenheit.	Identified in vendor documentation.	X				EMCi - PASS, OCT. Verity Scan Verity Touch Writer
	VVSG Req. 4.1.2.14 Environmental Control - Transit and Storage						
4.1.2.14	Equipment used for vote casting or for counting votes in a precinct count system, shall meet these specific minimum performance standards that simulate exposure to physical shock and vibration associated with handling and transportation by surface and air common carriers, and to temperature conditions associated with delivery and storage in an uncontrolled warehouse environment:	Identified in vendor documentation.	X				Cascade - PASS, NOV. Verity Scan Verity Touch Writer
4.1.2.14.a	High and low storage temperatures ranging from -4 to +140 degrees Fahrenheit, equivalent to MIL-STD-810D, Methods 501.2 and 502.2, Procedure I-Storage	Identified in vendor documentation.	X				Cascade - PASS, NOV. Verity Scan Verity Touch Writer
4.1.2.14.b	Bench handling equivalent to the procedure of MIL-STD-810D, Method 516.3, Procedure VI	Identified in vendor documentation.	X				Cascade - PASS, NOV. Verity Scan Verity Touch Writer
4.1.2.14.c	Vibration equivalent to the procedure of MIL-STD-810D, Method 514.3, Category 1- Basic Transportation, Common Carrier	Identified in vendor documentation.	X				Cascade - PASS, NOV. Verity Scan Verity Touch Writer
4.1.2.14.d	Uncontrolled humidity equivalent to the procedure of MIL-STD-810D, Method 507.2, Procedure I-Natural Hot-Humid	Identified in vendor documentation.	X				Cascade - PASS, NOV. Verity Scan Verity Touch Writer
	VVSG Req. 4.1.2.15 Data Network Requirements						
4.1.2.15	Voting systems may use a local or remote data network. If such a network is used, then all components of the network shall comply with the telecommunications requirements described in Section 6 and the Security requirements described in Section 7.	Identified in vendor documentation.				X	