Premier Election Solutions ASSURE™ 1.2 VSTL Certification Test Plan

EAC Application #: DBD0701
Prepared for
Premier Election Solutions
Allen, TX 75013

Version 1.0

Trace to Standards	
NIST Handbook 150-22	
4.2.3, 5.3.5, 5.3.6, 5.4.2, 5.4.6, 5.5.1, 5.7 thru 5.7.3	
HAVA	
301	
VSS	
Vol. #	**Section(s) #**
1	**2, 3, 4, 5, & 6**
1	**9.6.2.1**
2	**2, 3, 4, 5, & 6**
2	**Appendix A**

iBeta Quality Assurance is accredited for Voting System Testing under:

U.S. Election Assistance Commission
EAC Lab Code: 0702
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NVLAP Lab Code 200749-0

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Form- E VSTL Test Plan

Version History				
Ver #	Description of Change	Author(s)	Approved By	Approved Date
v1.0	Initial release report	Gail Audette	Carolyn Coggins - iBeta PM Talbot Iredale, Premier Director of Product Development Sophia Lee, PM Premier	5 March 2009

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1. Introduction

This Test Plan identifies iBeta Quality Assurance's (iBeta) approach to US Election Assistance Certification (EAC) Voting System Test Lab (VSTL) Certification Testing of the Premier Election Solutions (Premier) ASSURE™ 1.2 voting system to the *Federal Election Commission Voting System Standards 2002 (VSS 2002)*. The purpose of this plan is to document the scope and detail of the requirements of certification testing tailored to the design and complexity of software being tested and the type of voting system hardware. The Premier ASSURE 1.2 test effort is an initial EAC Certification and not a modification from a previously certified effort. It incorporates an Election Management System and the following voting devices.

- The Global Election Management System (GEMS®) for ballot preparation and central count functions;
- The AccuVote®-TSX touch screen Direct Recording Electronic (DRE) video and audio voter editable ballot devices with a Voter Verified Paper Audit Trail (VVPAT) with accessible ballot inputs for voters with manual dexterity limitations (Models A, B, C, and D);
- The AccuVote®-TS R6 touch screen DRE video and audio voter editable ballot devices with accessible ballot inputs for voters with manual dexterity limitations (Models A and B);
- The AccuVote®-OS (Models A, B, C, and D) and AccuVote® OSX (Models A) precinct count optical scanners;
- The AccuVote®-OS (Models A, B, C, and D) optical scanners installed with Central Count firmware;
- The AutoMARK™ Voter Assist Terminal (Models A100, A200, and A300) and
- The Premier Central Scan (PCS) central count optical scanners.

Detailed definitions of the hardware and software associated with the Premier ASSURE™ 1.2 are contained in section 1.4 *Terms and Definitions* and section 3 *Materials Required for Testing.*

The trace matrix of EAC Voting System Test Laboratory Program Manual's Test Plan Format is provided below.

EAC Lab Manual Section and Title		Corresponding Premier Voting Systems Test Plan Section and Title	
1.	Introduction	1.	Introduction
	1.1 References	1.1	Internal Documentation
		1.2	External Documentation
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	3.1 Software	3,1	Voting System Software
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	4.2 Hardware configuration	4.1	Hardware Configuration and Design

EAC Lab Manual Section and Title		Corresponding Premier Voting Systems Test Plan Section and Title	
	and design		
4.3	Software system functions	4.2	Software System Functions
5	Test Data	5	Test Data
5.1	Test data recording	5.1	Test Data Recording
5.2	Test data criteria	5.2	Test Data Criteria
5.3	Test data reduction	5.3	Test Data Reduction
6	Test Procedure and Conditions	6.	Test Procedure and Conditions
6.1	Facility requirements	6.1	Facility Requirements
6.2	Test set-up	6.2	Test Set-up
6.3	Test sequence	6.3	Test Sequence
7.	Proprietary Data	3.5	Proprietary Data

In addition, this Test Plan is accompanied by the completed and corresponding EAC Certification Program Requirements Matrix (V.5.2).

Non-core hardware environmental testing is outside iBeta's test accreditation scope as a VSTL. Non-core hardware environmental assessments and testing are subcontracted to A2LA or NVLAP accredited laboratories as dictated in NIST Handbook 150-22. iBeta will verify that each and every environmental test lab retains current qualifications that they are accredited to perform the applicable *VSS 2002* identified environmental test methods. The accredited test methods are traced to the applicable *VSS 2002* requirement for:

Accredited Test Method	*VSS 2002* Vol.2 Requirement
MIL-Std 810 M 516 Transportation Shock	4.6.2 Bench Handling Test
MIL-Std 810 M 514 Road Transport (Bounce- Loose Cargo)	4.6.3 Vibration Test
MIL-Std 810 M 502 Low Temperature	4.6.4 Low Temperature Test 4.7.1 Temperature & Power Variation Test
MIL-Std 810 M 501 High Temperature	4.6.5 High Temperature Test 4.7.1 Temperature & Power Variation Test
MIL-Std 810 M 507 Humidity (Temperature /Humidity)	4.6.6 Humidity Test

Accredited Test Method	*VSS 2002* Vol.2 Requirement
EN 61000-4-11 Testing and Measurement Techniques-Section 11: Voltage Dips, Short Interruptions and Voltage Variations Immunity Test	4.8.1 Power Disturbance Disruption
FCC Class B Requirements per ANSI C63.4	4.8.2 Electromagnetic Radiation
EN 61000-4-2 Electrostatic Discharge Susceptibility	4.8.3 Electrostatic Disruption
EN 61000-4-3 Radiated Susceptibility, 80 MHz to 1 GHz, Electric Field	4.8.4 Electromagnetic Susceptibility
EN 61000-4-4 Conducted Susceptibility, Electrical Fast/Burst Transients, Signal and Power lines and Cables	4.8.5 Electrical Fast Transient Protection
EN 61000-4-5 Testing and Measurement Techniques-Section 5: Surge Immunity Test	4.8.6 Lightning Surge Protection
EN 61000-4-6 Conducted Susceptibility, Common Mode Cable Injection, 150 kHz to 80 MHz	4.8.7 Conducted RF Immunity
EN 61000-4-8 Testing and Measurement Techniques-Section 18: Power Frequency Magnetic Field Immunity Test	4.8.8 Magnetic Fields Immunity

A Physical Configuration Audit (PCA) of the Premier ASSURE™ voting system shall include a review of the documentation and source code submitted in the Technical Data Package (TDP) to the requirements of the *VSS 2002* in accordance with the guidance provided by the EAC in the reference 20 November 2008 Letter.

A Functional Configuration Audit (FCA) of the Premier ASSURE™ voting system shall include a review of the testing performed by Premier to:
- The requirements of *VSS 2002*;

- The ASSURE^{TM} voting system specifications of the Premier TDP; and
- The voting system requirements of section 301 of the Help American Vote Act (HAVA).

The FCA also includes identification of the scope of testing, a test plan, customization of test cases, system configuration management, test execution, and analysis of the test results

This test plan contains:
- The voting system and the scope of certification testing;
- The pre-certification test approach and methods;
- The certification test hardware, software, references and other materials for testing;
- The certification test approach and methods;
- The certification test tasks and prerequisite tasks; and
- The certification resource requirements.

As identified in the VSS2002 vol.1 section 4.1.2, software is excluded if it:
- Provides no support of voting system capabilities;
- Cannot function while voting system functionality is enabled; and
- Procedures are provided that confirm software has been removed, disconnected or switched.

The following functions are excluded from the ASSURE^{TM} 1.2 voting system and therefore not tested in this certification effort:

- Cumulative Voting;
- Ranked Order Voting;
- Use of Wireless Communications: There is no use of wireless communications; and
- Shared Operating Environment: ASSURE^{TM} 1.2 does not share an environment with other data processing functions
.
In addition, the submitted voting system does not have components that are used external to the voting functions.

1.1 Internal Documentation

The documents identified below are iBeta internal documents used in certification testing

Table 1 Internal Documents

Version #	Title	Abbreviation	Date	Author (Org.)
v1.0	Voting Certification Master Services Agreement	MSA contract	October 29, 2008	iBeta Quality Assurance
	Statement of Work 02	SOW 02	November 14, 2008	iBeta Quality Assurance
	Statement of Work 03	SOW 03	January 14, 2009	iBeta Quality Assurance
	Premier PCA Source Code Review Letter - Final		January 23, 2009	iBeta Quality Assurance
	Premier Environmental Test Review Letter		January 8, 2009	iBeta Quality Assurance
	Premier PCA Document Review Letter		January 7, 2009	iBeta Quality Assurance
	Premier Data Accuracy Test Review Letter		February 5, 2009	iBeta Quality Assurance
v2.0	Trusted Build Procedure		January 23, 2009	iBeta Quality Assurance

1.2 External Documentation

The documents identified below are external resources used in certification testing.

Table 2 External Documents

Version #	Title	Abbreviation	Date	Author (Org.)
	Help America Vote Act	HAVA	October 29, 2002	107th Congress
NIST Handbook 150 2006 Edition	NVLAP Voting System Testing	NIST 150	February 2006	National Voluntary Lab Accreditation Program
NIST Handbook 150-22	NVLAP Voting System Testing	NIST 150-22	October 2007	National Voluntary Lab Accreditation Program
	Federal Election Commission Voting System Standards	VSS	April 2002	Federal Election Commission
	EAC Decision on Request for Interpretation - Keypad	Interpretation 2007-01	May 23, 2007	Election Assistance Commission
	EAC Decision on Request for Interpretation - Single Character	Interpretation 2007-02	May 14, 2007	Election Assistance Commission
	EAC Decision on Request for Interpretation 2007-04, 2005 VVSG Vol. 1 Section 3.1.3	Interpretation 2007-04	October 29, 2007	Election Assistance Commission
	EAC Decision on Request for Interpretation 2007-05, 2005 VVSG Vol. 1 Section 4.2.1 (Testing Focus and Applicability)	Interpretation 2007-05	November 6, 2007	Election Assistance Commission
	EAC Decision on Request for Interpretation 2007-06, 2005 VVSG Vol. 1 Section 4.1.1, 2.1.2c &f, 2.3.3.3o and 2.4.3c&d. (Recording and reporting undervotes)	Interpretation 2007-06	November 7, 2007	Election Assistance Commission
	EAC Decision on Request for Interpretation 2008-01, 2002 VSS Vol. II, Section 4.7.1 & Appendix C 2005 VVSG Vol. II, Section 4.7.1 & Appendix C	Interpretation 2008-01	February 6, 2008	Election Assistance Commission
	EAC Decision on Request for Interpretation 2008-02, Battery Backup for Optical Scan Voting machines	Interpretation 2008-02	February 19, 2008	Election Assistance Commission
	EAC Decision on Request for Interpretation 2008-04, Ballot Production - Alternative languages	Interpretation 2008-04	May 19, 2008	Election Assistance Commission
	EAC Decision on Request for Interpretation 2008-05, Durability	Interpretation 2008-05	May 19, 2008	Election Assistance Commission
	EAC Decision on Request for Interpretation 2008-06 Battery Back Up for	Interpretation 2008-06	August 29, 2008	Election Assistance Commission

Version #	Title	Abbreviation	Date	Author (Org.)
	Central Count			
	EAC Decision on Request for Interpretation 2008-07 Zero Report	Interpretation 2008-07	August 27, 2008	Election Assistance Commission
	EAC Decision on Request for Interpretation 2008-08, Automatic Bar Code Reader	Interpretation 2008-08	August 1, 2008	Election Assistance Commission
	EAC Decision on Request for Interpretation 2008-09, Safety (NRTL)	Interpretation 2008-09	August 25, 2008	Election Assistance Commission
	EAC Decision on Request for Interpretation 2008-10 Electrical Fast Transient (EFT)	Interpretation 2008-10	August 26, 2008	Election Assistance Commission
	NOC 07-05: Voting System Test Laboratory (VSTL) responsibilities in the management and oversight of third party testing.	NOC 07-05	September 7, 2007	Election Assistance Commission
	NOC 08-001: Validity of Prior Non-core Hardware Environmental and EMC Testing	NOC 08-001	March 26, 2008	Election Assistance Commission
	NOC 08-002: EAC Mark of Certification Final	NOC 08-002	May 16, 2008	Election Assistance Commission
	NOC 08-003: Conformance Testing Requirements	NOC 08-003	July 30, 2008	Election Assistance Commission
	Voting System Testing and Certification Program Manual		January 1, 2007	Election Assistance Commission
	Voting System Test Laboratory Program Manual		July 21, 2008	Election Assistance Commission
	Letter to Premier on reuse of testing - final		November 20, 2008	Election Assistance Commission
	Approval Reuse of Testing FINAL Letter		January 16, 2009	Election Assistance Commission
	Approval Reuse of Testing source code FINAL		February 3, 2009	Election Assistance Commission
	Approval Reuse of Testing - Data Accuracy FINAL		February 10, 2009	Election Assistance Commission
V.5.2	Certification Program Requirements Matrix		25 August 2008	Election Assistance Commission

1.3 Technical Data Package Documents

The Technical Data Package Documents submitted for this certification test effort are listed in Appendix A.

1.4 Terms and Definitions

The Terms and Definitions identified below are used in this test report.

Table 3 Terms and Definitions

Term	Abbreviation	Definition
AccuView Printer Module	AVPM	Premier VVPAT designed to allow voters to print and review their selections in each race while voting their ballot on the AccuVote-TS unit.
AccuBasic	ABasic	Programming language designed to define ABasic reports. ABasic report files are used to format the content of reports and memory card labels that can be printed on AccuVote-OSX, AccuVote-OS Precinct Count and BallotStation units.
AccuFeed		Device that provides automated mulitsheet feeding capability
AccuVote® Optical Scan	AVOS, OS, AVOSX, and OSX	Mark-sense and scan image paper-ballot voting devices.
AccuVote®-OS	AVOS	AccuVote-OS (optical scan) mark-sense ballot scanner. May be installed with either AccuVote-OS Precinct Count or AccuVote-OS Central Count firmware.
AccuVote®-OSX	AVOSX	AccuVote-OSX image-scan ballot scanner. The AccuVote-OSX unit is pre-installed with custom AccuVote-OSX software running on the Windows CE operating system.
AccuVote® TS	AccuVote-TS	Generic term used to refer to Premier's DRE (Direct Recording Electronic) touch screen voting devices, the AccuVote®-TS R6 and the AccuVote®-TSX.
ASSURE™ Security Manager	ASM	Software application that provides an interface to the ASSURE Security Service. The ASSURE Security Manager is used to define and dynamically control application users, user rights and other security features from a central location. Premier Central Scan (PCS) requires the use of ASM.
BallotStation		Dedicated software application used in conjunction with the AccuVote-TS voting devices to display ballots, record votes, count and tally votes and make a report of election results.
Direction Recording Electronic	DRE	Touch screen voting device
Escrow Agency		EAC identified repository that retains the file signature of the trusted build
ExpressPoll® Card Writer		Precinct Election Management and card activator

Term	Abbreviation	Definition
Global Election Management System	GEMS®	Name of Premier Election Solutions' Election Management System (EMS) software
Help America Vote Act	HAVA	Legislation enacted in 2002 which includes creation of the EAC, federal voting standards and accreditation of test labs
Key Card Tool™	KCT	PC-based software application designed to enhance the security provided by the AccuVote-TS units.
Premier Central Scan	PCS	A software application designed for high-speed, AccuVote-OS batch-ballot processing.
Optical Scan Accumulator Adapter®	OSAA	Hardware adapter that allows the memory card from an AccuVote-OS unit to be used with the AccuVote-TS R6 or the AccuVote-TSX
Plain Old Telephone Service	POTS	Terminology used to refer to analog voice-quality telephone service used by some types of telecommunications. The abbreviation is used especially to distinguish it from any digital telephone system.
Political Subdivisions	PSD	A geopolitical unit whose voters vote for one or more offices. One or more precincts (or parts of precincts) are included in a PSD.
Post-election logic and accuracy testing	Post-LAT	Post-LAT mode is used after the election to confirm the vote recording accuracy results match Pre-election LAT results. Vote simulation can be used in Post-LAT mode. Post-LAT mode votes cannot be intermixed or accumulated with Official Mode results.
Pre-election logic and accuracy testing	Pre- LAT	Pre-LAT mode is used for validating accurate vote recording accuracy prior to an election. Vote simulation can be used in Pre-LAT mode. Pre-LAT mode votes cannot be intermixed or accumulated with Official Mode results.
Primary – Closed		Voters must declare a party affiliation in order to vote in the primary. The voter declares their party affiliation to the election official and receives a ballot containing only those party-specific contests, along with non-party-specific contests presented at the same election. Unaffiliated voters are permitted to vote only on non-party-specific contests.

Term	Abbreviation	Definition
Primary – Open (Selective or Pick-A-Party)		Voters do not have to declare a party affiliation in order to vote in the primary. Depending on state law, the voter can declare their party preference to the election official or make their choice of party within the privacy of the voting booth. The voter receives a ballot containing only those party-specific contests, along with non-party-specific contests presented at the same election. Unaffiliated voters are permitted to vote only on non-party-specific contests.
Primary – Open		Voters do not have to declare a party affiliation in order to vote in the primary. A primary election (aka Top Two) that allows voters to choose among all candidates running for each office. Candidates from all parties are listed under the same contest.
Sip & Puff device	Sip & Puff	A DRE ballot navigation and vote selection assistive device, used by individuals with dexterity challenges or limitations on the use of their hands
Smart Card		Same as Voter Card. Card issued by the poll worker to be used as a key to access the ballot on the DRE voting machines for voting purposes.
Technical Data Package	TDP	The documentation and code related to the voting system, submitted by the manufacturer for review by the VSTL.
U.S. Election Assistance Commission	EAC	U.S. agency established by the Help America Vote Act of 2002 to administer Federal elections.
Universal ADA Interface Device	UAID®	Hardware Interface Device that offers voters with accessibility issues the opportunity to vote on an unassisted basis
Visually Impaired Ballot Station	VIBS	The Visually Impaired Ballot Station feature of the AccuVote-TS, used by visually impaired voters.
Voter Assist Terminal	VAT	Used to mark the ballot selections of voters who are visually impaired, have a disability, or who are more comfortable using an alternative language.
Voter Card Encoder	VCE	Device used to create voter access cards to be used for voting on an AccuVote-TS unit.
Voter Card Programmer	VCProgrammer™	Program used to create voter access cards; may either run on stand-along basis, or interface with the jurisdiction's voting registration system.

Term	Abbreviation	Definition
Voluntary Voting System Guidelines	VVSG	Federal voting system test standard revision stipulated by HAVA.
Voter Access Card		Card issued by the poll worker to be used as a key to access a ballot on a DRE voting machines for voting purposes.
Voting System Standards	VSS	Federal voting system test standards, predecessor of the VVSG.
Voting System Test Lab	VSTL	Lab accredited by the EAC to perform certification testing of voting systems.
Voting Variations		Significant variations among state election laws incorporating permissible ballot content, voting options and associated ballot counting logic
Voter Verified Paper Audit Trail	VVPAT	A software independent printed record of the electronic DRE ballot cast which is to be confirmed by the voter as an accurate report of their vote

2. Pre-certification Tests

2.1 Pre-certification Test Activity

A review of the test documentation provided by Premier was performed to assess the scope of testing and conformance with the *VSS 2002* vol. 1 sect. 2, 3, 4.4, 4.5, 5 and 6 Functional, Usability, Accessibility, Hardware, Software, Telecommunication and Security requirements.

The *VSS 2002* vol.1 sect. 4.2 source code review criteria were customized to reflect the applicable programming languages (C, C#, C++, VB.Net, ABasic, VBA and Assembly languages - 8051, Z80, and DSP) and the Premier software coding standards and are provided as a Confidential Appendix A to this Test Plan. This customization included confirmation that the manufacturer specific coding standards were accepted best practices as documented by an industry recognized source. Due to the transfer of the certification test effort from another VSTL to iBeta, the documentation of a review and audit of the previous VSTL work product (as directed in the referenced EAC letter of 20 November 2008) is provided within an Appendix C.

An assessment of the hardware was initiated to determine the scope of environmental testing. As with the source code review, the documentation of the review and audit of the previous VSTL environmental testing was conducted and is provided as Appendix D to this Test Plan.

Premier provides a separate Technical Data Package for each component. These unique TDPs follow a consistent format addressing the requirements of the *VSS 2002* vol.2 sect. 2. Similar to the preceding tasks, the documentation of the review and audit of the previous VSTL's PCA TDP Documentation Review is provided as Appendix E to this Test Plan.

Review of Premier's Quality Assurance and Configuration Management documentation is part of the PCA Document Review. In addition to the build and installation process, iBeta observes the delivered materials, documents, hardware and software to confirm that Premier is consistent with their internal quality procedures and configuration management. The VSS tasks the VSTL with this observation during testing. Any inconsistencies identified by iBeta shall be noted on the discrepancy report as informational. iBeta shall deem that Premier follows their policies if no inconsistencies are identified during the test effort. It is additionally noted that Premier maintains a regional ISO 9001:2000 certification program.

In accordance with *VSS 2002* vol. 1 sect. 1.5, iBeta reviewed the body of knowledge deposited in the EAC's Voting System Reports Clearinghouse for impact to the Security Test Method submitted herein.

The results of the California Top-to-Bottom Review of the Premier system concluded that the vulnerabilities within the system depend almost entirely on the effectiveness of the election procedures. The *VSS 2002* vol. 1 sect. 2.2.1 states that "System security is achieved through a combination of technical capabilities and sound administrative practices". This testing is conducted as part of the FCA Security Review and no additional testing was determined as a result of review.

 Review of the Kentucky, Ohio, and Connecticut Reports resulted in no modifications to the Test Method as part of this Test Plan but did update the Security Test Case to verify that the Connecticut recommended tamper-resistant seals were incorporated into the Premier TDP. The review of the 3 March 2009 California Secretary of State report was also reviewed as well as the Premier Product Advisory Notices.

2.2 Pre-certification Test Results

A review of the test documentation provided by Premier was found to incorporate testing of the voting system to the requirements of the *VSS 2002* and the ASSURE[TM] 1.2 voting system requirements. In accordance with the Conformance Testing Requirements, the Telephony and Cryptographic Test Method (Section 7.5) contains the introduction of errors (out of order packets, duplication, and dropped packets, as examples) that will validate the voting system responses and reporting.

Customization of source code review criteria for the language and manufacture coding standards was completed. Documentation by an industry recognized source of applicable manufacturer specific coding standards was confirmed. The customized criteria were incorporated into the source code review sheets, where the acceptance or rejection of each reviewed module will be captured. In addition, during the 5.7% source code review, areas of focus within the vote cast and recording logic were reviewed in accordance with the iBeta Source Code Review Procedure and the EAC 20 November 2008 referenced letter. As this was a limited review, the items identified were provided to the EAC along with the iBeta assessment and recommendation (letter provided in Appendix C). The corresponding EAC letter approving the source code review re-use is provided as Appendix F.

In addition to the 5.7% review, iBeta incorporated the 162 open discrepancies remaining from the previous VSTL source code review and conducted the review of updated source code. All source code review discrepancies are closed and iBeta has performed a Trusted Build in accordance with the EAC Voting System Testing and Certification Program Manual Sections 5.5 and 5.6.

Similar to the Source Code Review reuse, the environmental hardware testing, iBeta completed the audit of the environmental testing and results reports submitted to the EAC. The documentation of that review as well as the results are provided in Appendix D and the corresponding EAC letter approving the results re-use is provided as Appendix G.

iBeta conducted a sampling review of the PCA TDP Documentation Review performed to assess compliance with the requirements of *VSS 2002* vol. 2 sect.2 to assess the full review conducted and documented by the previous VSTL. iBeta has found the sampling of the submitted TDP documents to be generally consistent and contained the overall *VSS 2002* required content. Results of the PCA TDP Documentation Review as well as the recommendation for re-use of the previous VSTL analysis are provided as Appendix E and the corresponding EAC letter directing re-use is provided as Appendix G.

The open PCA and FCA discrepancies from the previous VSTL test effort were incorporated into the iBeta discrepancy list provided as Appendix B (note that only the non-closed discrepancies are being reported within this Test Plan). Resolutions submitted by Premier and the validations by iBeta are documented in the PCA and FCA Discrepancy Report. This report will be included as an appendix in the final VSTL Certification Test Report. The remaining 60 document defects, listed in Appendix B, must be resolved and validated prior to the completion of certification testing. Also note that the discrepancy list includes the trusted build FCA discrepancies.

Informational issues are items noted during testing or review for items that do not contravene the standard. They may include cosmetic issues, typos, functional bugs, format errors, or concerns which impact use of the voting system. They are identified for the purpose of disclosure to the manufacturer, EAC, election officials and the public. It is the manufacturer's option to address them. They will also be included in the appendix of the final report.

3. Materials Required for Testing

The System Identification stipulates the following materials are required for testing of the ASSURE™ 1.2 voting system.

3.1 Voting System Software

The software listed in Table 4 is the baseline documented configuration of the ASSURE™ 1.2 voting system.

Table 4 Voting System Software

Application	Manufacturer	Version	Description (identify COTS)
EMS Related Software			Ballot preparation/Central Count
GEMS®	Premier Election Solutions	1.21.2	DRE ballot preparation, optical scanner programming & central count EMS software
ASSURE™ Security Manager	Premier Election Solutions	1.2.1	Software application that provides an interface to the ASSURE Security Service. The ASSURE Security Manager is used to define and dynamically control application users, users rights and other security features from a central location. Premier Central Scan requires the use of ASM/ASS.
ABasic Report Files	Premier Election Solutions	2.2.4	ABasic report files are used to format the content of reports and memory card labels that can be printed on AccuVote-OSX, AccuVote-OS Precinct Count and BallotStation units.
AutoMARK™ AIMS	AutoMARK	1.3 (P) (Build 1.3.552)	Software that prepares the ballots and the election database to be used by the VAT
Key Card Tool®	Premier Election Solutions	4.7.3	PC-based software application that allows the user to create a smart card encoded with user-defined security codes or keys
Polling Place Voting Software			
Accu-Vote® OS-PC	Premier Election Solutions	1.96.11	Precinct Count ballot counting firmware installed on an AccuVote-OS ballot scanner.
Accu-Vote® OSX	Premier Election Solutions	1.2.1	Optical-scan voting device application for paper ballots
BallotStation™	Premier Election Solutions	4.7.4	Software application used in conjunction with the AccuVote-TS touch screen voting devices
VCProgrammer™	Premier Election Solutions	4.7.3	Application to encode voter access cards with or without input from a voter registration system
Voter Card Encoder	Premier Election	1.3.3	Application to encode voter

Application	Manufacturer	Version	Description (identify COTS)
	Solutions		access cards for the purpose of activating ballots on the AccuVote-TSX and AccuVote-TS-R6 in an election
ExpressPoll® Card Writer	Premier Election Solutions	1.1.6	Application to encode voter access cards for the purpose of activating ballots on the AccuVote-TSX and AccuVote TS R6 in an election
AVPM	Premier Election Solutions	3.0.3	Firmware for the AVPM printer
WinCE 300	Premier Election Solutions	3.5	Operating System for AccuVote® TS R6 Models A and B
WinCE 410	Premier Election Solutions	3.10	Operating System for AccuVote® TSX Models A, B, C, and D
WinCE 500	Premier Election Solutions	4.1	Operating System for AccuVote® OSX Model A
BootLoader	Premier Election Solutions	1.3.10	Application that boots the hardware for the AccuVote® TS R6, AccuVote® TSX, and AccuVote® OSX
WinCE	AutoMARK	5.00.17	AutoMARK VAT Operating System
AutoMARK™ VAT PAVR	AutoMARK	1.3 PAVR (Build 1.3.3342)	Firmware for the AutoMARK VAT that supports audio only
AutoMARK™ VAT PVR	AutoMARK	1.3 PVR (Build 1.3.3342)	Firmware for the AutoMARK VAT that supports audio and visual
Central Count Voting Software			
Premier Central Scan	Premier Election Solutions	2.2.1	Central Count ballot counting software application
Accu-Vote® OS Central Count	Premier Election Solutions	2.0.13	Central Count ballot counting firmware installed on an AccuVote-OS ballot scanner

3.2 Voting System Hardware and Equipment

The equipment listed in Table 5 is the documented configuration of the Premier ASSURE™ 1.2 voting system.

Table 5 Voting System Hardware and other Equipment

Hardware or Equipment	Manufacturer	Version/Serial Number	Description (identify COTS)
Election Management System (GEMS® - Ballot Preparation and Central Count)			Ballot preparation & Central Count
AccuVote-OS-CC Model A	Premier Election Solutions	80787	Central Count ballot scanner or Central Count tabulator
AccuVote-OS-CC Model C	Premier Election Solutions	35265	Central Count Optical Scanner
AccuFeed Ballot Feeder Model A	Premier Election Solutions	50649	Central Count ballot feeder for the AccuVote®-OS-CC
Premier Central Scan PS900	DRS	PS900-2206	Central Count ballot scanner

Hardware or Equipment	Manufacturer	Version/Serial Number	Description (identify COTS)
iM2			(COTS)
Premier Central Scan PS960	DRS	900-2541-25	Central Count ballot scanner (COTS)
Model DCSM	Dell	89KSLB1	ASM COTS Server
PowerEdge 2900	Dell	CN-0DC391-71070-661-0751	GEMS® and AIMS COTS Server and also includes Key Card Tool™ and VCProgrammer™
AccuVote® -TSX and -TS R6			DREs & associated hardware
AccuVote®-TSX Model A	Premier Election Solutions	205176	Stand-alone touch screen DRE polling place voting device that incorporates a color LCD integral touchscreen, integrated (voter) privacy flaps, internal memory for storing ballot data and voting records, removable results cartridge, and protective & public counters.
AccuVote®-TSX Model A (non-AVPM)	Premier Election Solutions	201946	Polling Place DRE (see above)
AccuVote®-TSX Model A (AVPM)	Premier Election Solutions	203549	Polling Place DRE (see above)
AccuVote®-TSX Model B	Premier Election Solutions	225205	Polling Place DRE (see above)
AccuVote®-TSX Model C	Premier Election Solutions	278293	Polling Place DRE (see above)
AccuVote®-TSX Model C	Premier Election Solutions	264782	Polling Place DRE (see above)
AccuVote®-TSX Model D AVPM	Premier Election Solutions	203549	Polling Place DRE (see above)
AccuVote®-TSX Model D	Premier Election Solutions	246992	Polling Place DRE (see above)
AVPM	Premier Election Solutions	NA	TSX Stand Accessory
AVPM Base	Premier Election Solutions	None	AccuVote-TSX base
Non-AVPM Base	Premier Election Solutions	None	AccuVote-TSX base
AutoMARK A100	AutoMARK	AM0105430016	Polling Place Voter Assistance Device (auto ballot marking)
AutoMARK A200	AutoMARK	AM0206461989	Polling Place Voter Assistance Device (auto ballot marking)
AutoMARK A300	AutoMARK	AM0307420109	Polling Place Voter Assistance Device (auto ballot marking)
AccuVote-TS R6 Model A	Premier Election Solutions	102071	Polling Place or Early Voting DRE
AccuVote®-TS R6 Model B	Premier Election Solutions	133847	Polling Place or Early Voting DRE
AccuVote-TS R6 Model B	Premier Election Solutions	160495	Polling Place or Early Voting DRE
Precinct Count			Mark-sense, optical scanners & associated hardware
AccuVote-OS Model A	Premier Election Solutions	34360	Polling Place Optical Scanner
AccuVote-OS Model B	Premier Election Solutions	33844	Polling Place Optical Scanner
AccuVote-OS Model C	Premier Election Solutions	35100	Polling Place Optical Scanner
AccuVote-OS Model D	Premier Election Solutions	42889	Polling Place Optical Scanner
AccuVote-OS Model D	Premier Election Solutions	41407	Polling Place Optical Scanner
AccuVote-OS	Premier Election Solutions	42885	Polling Place Optical Scanner

Hardware or Equipment	Manufacturer	Version/Serial Number	Description (identify COTS)
Model D			
AccuVote-OS Ballot Box Unit	Premier Election Solutions	Model 33824	Polling place ballot bin for AccuVote-OS
AccuVote-OSX Model A	Premier Election Solutions	000038	Polling Place Paper Scanner
AccuVote-OSX Model A	Premier Election Solutions	000435	Polling Place Paper Scanner
AccuVote-OSX Ballot Box Unit	Premier Election Solutions	Model 01577	Ballot Box for AccuVote OSX Ballot Scanner
AccuVote-OSX Ballot Box Unit	Premier Election Solutions	Model 01574	Ballot Box for AccuVote OSX Ballot Scanner
AccuVote-OSX Ballot Box Unit	Premier Election Solutions	Model 01583	Ballot Box for AccuVote OSX Ballot Scanner
Other Hardware			
Optical Scan Accumulator Adapter (OSAA)	Premier Election Solutions	None	Allows results from AccuVote-OS memory cards to be accumulated on AccuVote-TS R6 and AccuVote-TSX devices
Visually Impaired Ballot Station (VIBS)	Various	None	A voter assistance accessory that can be used with AccuVote-TS R6 and AccuVote-TSX (touch screen voting terminals)
Universal ADA Interface Device (UAID) with ADA switch kit	Various	None	A voter assistance accessory that can be used with AccuVote-TS R6 and AccuVote-TSX (touch screen voting terminals)
Privacy Filter	3M	None	Fits on top of the touch screen and restricts the side viewing of the display
ExpressPoll 4000	ADVANTECH	AD2K0576739C	Polling Place Voter Card Creation (COTS)
ExpressPoll 5000	ADVANTECH	EPS68Z0M001156	Polling Place Voter Card Creation (COTS)
Voter Card Encoder	SPYRUS(tm)	P300116131	Polling Place Voter Card Creation (COTS)
Voter Card Encoder	SPYRUS(tm)	P300116603	Polling Place Voter Card Creation (COTS)
ST-100	SecureTech		Smart Card Reader (COTS)
ST-120	SecureTech		Smart Card Reader (COTS)

The configuration of the voting devices for the General and Primary functional test cases is provided below in Table 6.

Table 6 Premier ASSURE^{TM} 1.2 Voting Device Hardware Configuration for General and Primary Test Cases

HW / SW	GEN01	GEN02	GEN03	GEN04a-b	PRI01	PRI02
	Split Precincts: * 2 districts * 2 sub-districts * 1 Proposition District * 2 precincts * 3 splits per precinct **Vote 1 of N**	**Straight Party** * Party column oriented w/races in 1st column * Cross-over if no declared candidate Tally Settings * TS: Non-PA Straight Party * OS: Exclusive, Non-mandatory	**Multi-lingual Audio** * import * direct record **Accessibility** (Sip/Puff) **Single Precinct Vote 1 of N Vote N of M Slate & Group Voting Proposition/Qu**	**Split Precinct Vote 1 of N Vote N of M District rotation (**set during District creation) **Early Voting Provisional** **Repeatability Race**	**Open Primary:** • Open primary with private declaration (Selective Primary) • Party selection is first choice (preference, non-mandatory) • list nominees,	**Closed Primary:** * Same as open primary with public declaration * list delegates with nominees **Split Precincts:** * 5 districts * 7 precincts **Vote 1 of N**

HW / SW	GEN01	GEN02	GEN03	GEN04a-b	PRI01	PRI02
	Vote N of M Slate & Group Voting Proposition/Question Recall A - single Yes/No	**X-Party Endorse Non-Split Precincts: Vote 1 of N Vote N of M Slate & Group Voting Recall B** - options follow 'Yes'	**estion Ballot Text Report** * Export Rich Text * Import Rich Text	**Rotations** (set in Race Options): **GEN04a:** by precinct **GEN04b:** District	not delegates 2 Page Ballot **Single Precinct Vote 1 of N Vote N of M Proposition/Question Absentee**	**Vote N of M Write-In (registered) Recall D**- options follow either Yes or No
GEMS	X	X	X	X	X	X
BallotStation	X	X	X	X	X	X
Premier Central Scan (PCS)		X		X	X	
Key Card Tool	X	X		X		X
VCProgrammer						X
Assure Security Manager (ASM)		X		X	X	
AIMS		X	X	X	X	X
ABasic	X					
Voter Card Encoder (VCE)					X	
AccuVote-OS PC						
Model A, Low Profile						X
Model A, High Profile						
Model B, Low Profile						
Model B, High Profile					X	
Model C, Low Profile				X		
Model C, High Profile		X				
Model D, Low Profile	X					
Ballot Box for AccuVote-OS	X	X				
AccuVote-OS CC						
Model A, Low Profile		X				
Model A, High Profile						
Model B, Low Profile						
Model B, High Profile						
Model C, Low Profile					X	
Model C, High Profile						
Model D, Low Profile				X		
AccuFeed Model A		X				
AccuVote-OSX						
Model A	X	X		X	X	X
Ballot Box for AccuVote-OSX	X	X		X	X	X
AccuVote-TS R6						
Model A			X		X	
Model B				X		X
VIBS (keypad)			X			
Headphones			X			
AccuVote-TSX						
Model A	X (Early voting)					
Model B			X			
Model C		X				

HW / SW	GEN01	GEN02	GEN03	GEN04a-b	PRI01	PRI02
Model D					X	
AccuVote-TSX Base (AVPM)	X (w/barcode)				X	
AccuVote-TSX Base (Non-AVPM)		X	X			
AVPM Model A	X					
OSAA Model A	X					
UAID Model A			X			
VIBS (keypad)			X			
Headphones			X			
AutoMARK						
A100		X				
A200				X		
A300			X		X	X
Headphones			X			
UAID Model A			X			
PhotoScribe						
PS900 iM2		X		X		
PS960					X	
ExpressPoll						
4000					X	
5000			X			

3.3 Testing Software, Hardware and Materials

The software, hardware and materials listed in Table 7 are needed to support testing and in test simulations of elections using products in the Premier ASSURE™ 1.2 voting system.

Table 7 Testing Software, Hardware and Materials

Software, Hardware or Material	Description	Description of use in testing
Multiple desktop and laptop PCs	A variety of PCs running Microsoft operating systems	Supplied by iBeta: Preparation, management and recording of test plans, test cases, reviews and results
Repository servers	Separate servers for storage of test documents and source code, running industry standards operating systems, security and back up utilities	Supplied by iBeta: Documents are maintained on a secure network server. Source code is maintained on a separate data disk on a restricted server
Microsoft Office Professional Enterprise Edition 2003	Excel, Word and Visio software and document templates	Supplied by iBeta: The software used to create and record test plans, test cases, reviews and results
SharePoint Portal Server 2003	TDP and test documentation repository	Supplied by iBeta: TDP and test documentation repository and configuration management tool
Other standard business application software	Internet browsers, PDF viewers email	Supplied by iBeta: Industry standard tools to support testing, business and project implementation
Center 325 Mini Sound Level Meter	IEC 651 Type 2 handheld sound level meter	Supplied by iBeta: Measure decibel level
Visual Studio 2003 v.7.1.3808 (Microsoft)	Build and source code review Integrated Development Environment	Supplied by iBeta: View source code review
RSM v.7.40 (M Squared Technologies)	C, C++, Java & C# static analysis tool	Supplied by iBeta: identify line counts and cyclomatic complexity
Beyond Compare 2 v.2.5.1 (Scooter Software)	Comparison utility	Supplied by iBeta: used to compare file/folder differences
WinDiff 5.1 (Microsoft)	Comparison utility	Supplied by iBeta: used to compare

Software, Hardware or Material	Description	Description of use in testing
		file/folder differences
Hash.exe v.7.08.10.07.12 (Maresware)	Hash creation utility	Supplied by iBeta: used to generate hash signatures for Trusted Builds
NistNet -- version 2.0.12.c	Packet switching and network packet analysis tool	NIST tool used in testing Public Telecommunications Networking
Nessus v. 3.2.0	Network port scanner and vulnerability testing tool	Supplied by iBeta: used to scan ports of Public Telecommunications Networking for vulnerabilities
WireShark v. 1.0 (Formerly Ethereal v. 0.99.0)	An open source network packet capture and analysis tool	Supplied by iBeta: used to capture packets for later analysis of cryptography
LANForge CT970-16	Network-related testing and simulation tool	Supplied by iBeta: (FIRE) used to generate Public Telecommunications signals and (ICE) used to insert duplicate and reordered packets to test the receiving software
BartPE ghost32.exe (916 CD)	OS to boot to for ghosting	Disk image backups for testing repeatability.
Norton Symantec Ghost v.11	Tool to create and restore ghost images	Disk image backups for testing repeatability and for Trusted Build submission to the NSRL

3.4 Deliverable Materials

Premier delivered separate Technical Data Packages for each product. The documents are listed in the Appendix A - TDP Documents. The documents listed are delivered as part of the Premier ASSURE™ 1.2 voting system.

The materials listed in Table 8 are to be delivered as part of the ASSURE™ 1.2 voting system (see Tables 4 and 5 for hardware, software, and firmware versions).

Table 8 System Materials

Material	Material Description	Use in the Voting System
AccuVote®-OS PC	Mark sense-based ballot scanning device used in a polling place	AccuVote-OS ballot scanner used in a polling place
AccuVote®-OS CC	Mark sense-based ballot counting device used in a central count environment	AccuVote-OS ballot scanner used in a central count environment
AccuFeed	Ballot feeder used in conjunction with AccuVote-OS CC or the AccuVote-OS PC	Ballot processing device that mates with the AccuVote-OS, and can be used when counting large volumes of bulk AccuVote-OS ballots.
AccuVote®-OSX	Image based ballot scanning device used in a polling place	AccuVote-OS ballot scanner used in a polling place
AccuVote®-TS R6	DRE (Touch Screen) voting hardware	A Direct Recording Electronic (DRE) voting device that, when installed with BallotStation firmware, is capable of counting, tallying, reporting and uploading the results of voted ballots.
AccuVote®-TSX (AVPM compatible)	DRE (Touch Screen) voting hardware	A Direct Recording Electronic (DRE) voting device compatible with AVPM

Material	Material Description	Use in the Voting System
		(VVPAT) that, when installed with BallotStation firmware, is capable of counting, tallying, reporting and uploading the results of voted ballots.
AccuView Printer Module (AVPM)	VVPAT for AccuVote-TSX	A voter verifiable report printer (VVPAT) used on the AccuVote-TSX AVPM compatible touch screen voting devices.
AccuVote®-TSX (non-AVPM compatible)	DRE (Touch Screen) voting hardware	A Direct Recording Electronic (DRE) voting device that, when installed with BallotStation firmware, is capable of counting, tallying, reporting and uploading the results of voted ballots.
ASSURE Security Manager	Security Management application	Software application that provides an interface to the ASSURE Security Service. The ASSURE Security Manager is used to define and dynamically control application users, users rights and other security features from a central location. Premier Central Scan requires the use of ASM/ASS
Visually Impaired BallotStation (VIBS)	Voter assistance keypad device with headphone input	A voter assistance accessory that can be used with the AccuVote-TS R6 and AccuVote-TSX (touch screen voting terminals)
Automark™	Voter assistance ballot marking device	Voter Assist Terminal (VAT)
Universal American Disabilities Association Interface Device (UAID)	Voter assistance switching (Sip/Puff) device	A voter assistance accessory device used in conjunction with the AccuVote-TS R6 and -TSX
DRS PhotoScribe PS900 iM2/PS960	Central Count ballot scanning device	COTS Central Count image-based, AccuVote-OS ballot scanner workstation
ExpressPoll® EZRoster 4000/5000	Voter registration management device	Voter access card encoder
Voter Card Encoder (VCE)	Voter access card creation	A device designed to encode voter access cards for the purpose of activating ballots on AccuVote-TSX and AccuVote-TS R6 units
VCProgrammer	Voter access card programming software	Program used to create voter access cards; may either run on stand-along basis, or interface with the jurisdiction's voting registration system
Smart Card Terminal (ST-100/120)	Smartcards activation read/write	COTS device reading smart

Material	Material Description	Use in the Voting System
	hardware	cards
Memory Card	COTS SATA/PCMCIA Flash Memory	External/Detachable memory device used on AccuVote OSX and AccuVote TS/TSX for installing election data and capturing election ballot results and audit logs
Memory Card	COTS SRAM memory card	External/Detachable memory device used on AccuVote OS for installing election data and capturing election ballot results and audit logs
Premier Central Scan (PCS)	Central Count application software	A high-speed, batch-ballot counting application used to control the scanning and processing of AccuVote-OS ballots in a central count environment
Key Card Tool™	Smartcard creation software	PC-based software application designed to enhance the security provided by the AccuVote-TS units
Global Election Management System (GEMS®)	Election management application software	A comprehensive application software tool in composing an election, from the point of defining election configuration parameters, jurisdictional information, race and candidate ballot content and creating ballot artwork, through to the programming of all voting device memory cards with election and ballot information, receiving election results from uploaded memory cards, and issuing election results reports
Smart Card	COTS data card	Central count and polling place card to provide administration security and supervisory access to AccuVote voting/counting devices.
Optical Scan Accumulator Adapter (OSAA)	Polling place administration	Allows results on a memory card from an AccuVote-OS unit to be accumulated on either AccuVote-TS R6 or the AccuVote-TSX

3.5 Proprietary Data

All software, hardware, documentation and materials shall be considered by iBeta as proprietary to Premier. None of the elements submitted for certification testing may be used outside the scope of testing. No release or disclosure may occur without the written authorization of Premier. Authorization for release to the EAC is contained in the MSA contract.

4. Test Specifications

Certification testing of ASSURE™ 1.2 is to the configuration submitted in the EAC application #DBD0701 to the requirements of the VSS 2002. To ensure that ASSURE™ 1.2 conforms to the requirements of the VSS 2002 and *EAC Testing and Certification Program Manual,* in addition to a validation of test coverage, iBeta has traced the test plan to the ASSURE™ 1.2 *EAC Requirements Matrix.* The test methods in Section 7 of this test plan identify how testing to the VSS 2002 will be implemented and the organizations responsible for the testing. This implementation is then documented in a corresponding test case.

Testing for conformance to the *VSS 2002* shall be conducted as identified below. The test methods for the system level (functional, integration, security, volume, telephony and cryptographic), environmental, accuracy (accuracy, reliability, and availability), characteristics (recovery, usability, accessibility, and maintainability), and volume (stress and recovery) test cases are contained in Section 7. A test case shall be provided for each test method. Documentation of all test iterations shall be maintained with a separate record of the configuration and results of each test execution.

4.1 Hardware Configuration and Design

The baseline hardware configuration of the ASSURE™ 1.2 voting system submitted for testing is identified in Table 5. It is recorded in the PCA Configuration document. If during testing there is any change to the configuration of the system, the complete voting system configuration will be recorded on a new tab. The new tab will reflect the date upon which the new configuration was documented. All test cases identified in Tables 10 and 11 will include verification and documentation of the test environment against the applicable PCA Configuration tab.

4.2 Software System Functions

Testing of the software system functions defined in the *VSS 2002* include:
- Identification of the functional test scope based upon the PCA TDP Document Review (Vol. 2, Sect. 2) and FCA review of the ASSURE™ 1.2 voting system testing (Vol.2 Appendix A.2)
- PCA TDP Source Code Review of all new or changed code (Vol.2 Sect. 5.4)
- Complete the trusted build of the reviewed code for the baseline version of the system intended to be sold by the vendor and delivered to the jurisdiction. (Vol.2. Sect. 6.2)
- Development of a Certification Test Plan and Test Cases (Vol. 2, Appendix A.)
- Execution of Functional/System Integration Test Cases: General 1 thru General 4,Primary 1 thru Primary 2, and Accuracy DRE. (Vol. 2, Sect. 6)
- Testing of the performance and sequence of system hardware and software functions identified in System Operations, Maintenance and Diagnostic Testing Manuals: General 1 thru General 4, Primary 1 thru Primary 2, Accuracy DRE, Characteristics (AccuVote TS R6, TSX, OS, OSX, and AutoMARK VAT) (Vol. 2. Sec. 6.8)
- Verification of COTs software and completion of a trusted build by iBeta with the source code provided by SysTest Labs and any changes to source code resulting from testing. iBeta shall construct the build and record the file signature of the build environment and final build. The process follows. All section 5.7 of the Certification Program Manual specified deliverables shall be provided to the EAC stipulated escrow agency upon certification. iBeta staff shall follow the steps outlined in the iBeta *Trusted Build Procedure* to ensure compliance with the section 5.6 of the Certification Program Manual.

4.3 Test Case Design

4.3.1 Hardware Qualitative Examination Design

iBeta conducted a review of all submitted testing of the Premier Assure™ 1.2 voting system. The review was conducted in accordance with vol.2 Appendix A.4.3.1 of the *VSS 2002* and Section 301 of HAVA. As a result of this review it was determined that iBeta will conduct testing to determine the quality of the hardware design. This will be assessed in the Characteristic (Usability, Accessibility and Maintenance) and Security Test Cases. iBeta will also conduct tests to determine the quality of the overall voting

capabilities, pre-voting, voting and post voting functions of the Premier ASSURE^{TM} 1.2 voting system. These will be assessed in the General 1 through 4, Primary 1 through 2 Functional System Level Test Cases and the Accuracy Test Cases.

An examination of the Premier ASSURE^{TM} 1.2 voting system was conducted to confirm that it contains only COTS electronic dexterity equipment. As a result of this review it was determined that the voting system will be examined for all functionality listed within the *VSS 2002*.

4.3.2 Hardware Environmental Test Case Design

For the hardware environmental test case design, iBeta completed a full review of each component of the Premier voting system submitted for certification testing against the environmental testing conducted by the previous VSTL.   The results of the analysis (see Appendix D for the full results) are identified in Table 9.

Similarly, the Data Accuracy Testing by the previous VSTL was reviewed and documented (see Appendix H) with the corresponding EAC response letter provided as Appendix I.

Table 9 Environmental Hardware Test Matrix

Equipment	Summary of Testing Required	MIL-STD 810D						FCC	Power Disturbance 61000-4-11	Electrostatic Disruption 61000-4-2	Electromagnetic Susceptibility 61000-4-3	Electrical Fast Transit 61000-4-4	Lightening Surge 61000-4-5	RF Immunity 61000-4-6	Magnetic Fields Immunity 61000-4-8	OSHA	Data Accuracy Test
		516.3 Bench Handling	514.3 Category 1 Vibration	502 Low Temp	501 High Temp	507-2 Humidity	501 & 502 Temp & Power Variation With Accuracy & 163 hour Reliability Tests	Electromagnet Radiation Part 15 Class B								Safety Title 29, Part 1910	
AccuVote® TSX Model A non-AVPM	Per Appendix G, only ESD will be executed. Per Appendix I, Data Accuracy test results will be reused.									☑							
AccuVote® TSX Model A with AVPM	Per Appendix G, only ESD will be executed. Per Appendix I, Data Accuracy testing will be executed.									☑							☑
AccuVote® TSX Model B	Per Appendix I, Data Accuracy testing will be executed.																☑
AccuVote® TSX Model C	Per Appendix G, only ESD will be executed. Per Appendix I, Data Accuracy testing will be executed.									☑							☑
AccuVote® TSX Model D	Per Appendix G, only ESD will be executed. Per Appendix I, Data Accuracy testing will be executed.									☑							☑
Optical Scan Accumulator Adapter(OSAA)	NOTE 1: Per Appendix G, all previous environmental test results will be reused. Per Appendix I, Data Accuracy test results will be reused.																

Equipment	Summary of Testing Required	MIL-STD 810D						FCC								OSHA	
		516.3 Bench Handling	514.3 Category 1 Vibration	502 Low Temp	501 High Temp	507-2 Humidity	501 & 502 Temp & Power Variation With Accuracy & 163 hour Reliability Tests	Electromagnet Radiation Part 15 Class B	Power Disturbance 61000-4-11	Electrostatic Disruption 61000-4-2	Electromagnetic Susceptibility 61000-4-3	Electrical Fast Transit 61000-4-4	Lightening Surge 61000-4-5	RF Immunity 61000-4-6	Magnetic Fields Immunity 61000-4-8	Safety Title 29, Part 1910	Data Accuracy Test
AutoMARK VAT A100, A200, and A300	See NOTE 1 above.																
AccuVote® TS-R6 Model A and B	See NOTE 1 above.																
AccuVote® OS Model A, B, C, and D and Ballot Box	See NOTE 1 above.																
AccuVote® OSX Model A	See NOTE 1 above.																
AccuVote® OSX Ballot Box	Per Appendix G, only ESD will be executed.									☑							

4.3.3 Software Module Test Case Design and Data

Based upon the FCA Document Review of the Premier tests the iBeta standard test cases were customized to cover the applicable requirements of the *VSS 2002*.

These test cases cover the scope of Security, Accuracy, Integrity, System Audit, Error Recovery, Accessibility, Vote Tabulation, Ballot Counter, Telecommunications, Data Retention, and Reporting. The Pre and Post vote testing scope will include Ballot Preparation, Ballot Formatting, Ballot Production, Election Programming, Ballot and Program Installation and Control, Readiness Testing, Activating the Ballot (DRE Systems), DRE Standards for Accessibility, Casting Ballots, Consolidating Vote data, Vote tabulation and Reporting. Testing on Voting variables for the EMS will include Closed and Open Primary, Non-partisan Offices, Write-In Voting, Primary Presidential Delegation Nominations, Ballot Rotation, Straight Party Voting, Cross-Party Endorsement, Vote N of M, Recall Issues, with options, Provisional/Challenged Ballots, Overvotes, Undervotes, Blank Ballots, and Display/Printing of Multi-Lingual Ballots.

The customized test cases include the identification of the flow control parameters between the applications, user interfaces, and hardware interfaces with the capture of entry and exit data (see Table 10, Table 11 and Section 7.0 - Test Methods).

4.3.4 Software Functional Test Case Design

A review of the Premier functional test cases against the 2002 Voting System Standards and the ASSURE™ 1.2 voting system functional requirements has been performed. Tests covering system functional requirements are incorporated into a standard set of system level integration test cases. These test cases identify Accept/Reject performance criteria for certification based upon the VSS *2002* and the ASSURE™ 1.2 voting system software and hardware specifications

The Premier ASSURE™ 1.2 voting system functions and the iBeta Test Cases are identified in Table 10. Greater description of each Test Case is found in the Test Methods (see Section 7.0.) Detailed test steps and test data are found in the separate individual Test Case documents in accordance with the requirement of the EAC Laboratory Accreditation Program Manual Section 2.10.2 and shall be developed after approval of this Test Plan.

Table 10 System Function and Test Cases

System Function	Test Case
a. Ballot Preparation Subsystem	
1) Creation of Election Database: select election type, state and election parameters; set and assign user, roles and workstation; set tally types, precincts, voting location, voting machines and assignments; and Create offices and contests. 2) Setting up an election; assign candidates to offices and contests 3) Setting up a ballot; generate layouts and ballot styles; export paper ballot styles; generate and edit header masks; and view ballots for proofing. 4) Program memory cards, download election data to voting systems; perform Pre-Lat testing and verification.	General 1, 2, 3 & 4 Primary 1 & 2 Security Accuracy
b. Test operations performed prior to , during and after processing of ballots, including:	
1) Logic Test: Interpretation of Ballot Styles & recognition of precincts; displaying ballot styles correctly by election type, precinct, precinct splits and party.	General 1, 2, 3 & 4 Primary 1 & 2
2) Accuracy Tests: Clearly identifiable voting fields associated with candidates and measures; paper ballot reading accuracy on optical scanners and mark-sense; correctly mark and scan paper ballot; and correctly voted and recorded votes on DRE and with audio.	General 1, 2, 3 & 4 Primary 1 & 2 Accuracy (TSX only)
3) Status Tests: Initialize voting systems and card activators;	General 1, 2, 3 & 4

System Function	Test Case
confirm operational status of system and Ready mode; and check buttons, touch-panel ,scanner, display, and ballot.	Primary 1 & 2 Accuracy
4) Report Generation: Produce, view and print voting system (DREs and Scanners) reports; and produce consolidated central count reports.	General 1, 2, 3 & 4 Primary 1 & 2 Accuracy (TSX only)
5) Report Generation: Produce, view and print Voting system (DREs and Scanners) and central count (GEMS®) audit data reports.	General 1, 2, 3 & 4 Primary 1 & 2 Accuracy (TSX only)
c. Procedures applicable to equipment used in a Polling Place for:	
1) Opening the polls; print zero proof report; and activate for accepting ballots; display, vote and cast ballots.	General 1, 2, 3 & 4 Primary 1& 2 Security Accuracy (TSX only)
2) Monitoring equipment status ready and non-ready modes; and voting booths provide privacy.	General 1, 2, 3 & 4 Primary 1& 2 Accuracy(TSX only) Characteristics
3) Equipment response to commands; confirm voting enabled; fleeing voter enabled; audio and visual ballots activated; write-ins, review of votes, casting the ballot; activation of authorized ballot content (election information, election type, precinct, party, supported variations); usable and accessible generation/display of all voter facing messages and notifications.	General 1, 2, 3 & 4 Primary 1 & 2 Accuracy (TSX only) Characteristics
4) Generating real-time audit messages for election installation, equipment status, opening/closing polls, vote activations, poll worker interference, power fault and recovery; and report processing.	General 1, 2, 3 & 4 Primary 1 & 2 Security Accuracy (TSX only) Characteristics
5) Polls are closed; Ballot activation is disabled; visible indication of system status.	General 1, 2, 3 & 4 Primary 1 & 2 Security Accuracy (TSX only)
6) Generating election data reports; Vote consolidation via the PCMCIA memory cards, OSAA, or through ethernet at the central count location; and Post-Lat testing and verification.	General 1, 2, 3 & 4 Primary 1 & 2 Accuracy (TSX only)
7) Transfer ballot count to central counting location.	General 1, 2, 3 & 4 Primary 1 & 2 Security Accuracy (TSX only)
8) Electronic network transmission from AccuVote OS-PC, AccuVote TS-R6, AccuVote TSX, and AccuVote OSX via modem.	Telephony and Cryptography
d. Procedures applicable to equipment used in Central Count	
1) Read in PCMCIA memory cards for >1 precinct to GEMS® for tallying.	General 1, 2, & 4 Primary 2 Security Accuracy (TSX only)
2) Monitoring equipment status for ready and non-ready mode. PCMCIA memory cards are correctly connected to GEMS® and are ready to process results.	General 1, 2, 3 & 4 Primary 1 & 2 Accuracy (TSX only)
3) Equipment response to commands; GEMS® reads votes from PCMCIA memory cards or through ethernet; faulty cards (already read cards and tampered cards) rejected.	General 1, 2, 3 & 4 Primary 1 & 2 Security Accuracy (TSX only)
4) Integration with peripherals equipment or other data processing systems.	General 1, 2, 3 & 4 Primary 1 & 2 Security

System Function	Test Case
	Accuracy (TSX only)
5) Generating real-time audit messages: election installation, memory card creation, equipment status checks, power recovery, report processing; and result tally status.	General 1, 2, 3 & 4 Primary 1 & 2 Security Accuracy (TSX only)
6) Generating precinct-level election data reports: view and print reports with partial and complete precinct votes.	General 1, 2, 3 & 4 Primary 1 & 2 Accuracy (TSX only)
7) Generating summary election data reports: view and print zero proof reports; and view and print vote summary reports with partial and complete votes.	General 1, 2, 3 & 4 Primary 1 & 2 Accuracy (TSX only)

4.3.5 System Level Test Case Design

System Level Test Cases will be prepared to assess the response of the hardware and software to a range of conditions. Greater description of each Test Case is found in the Test Methods (see the Section 7.0). Detailed test steps and test data are found in the separate individual Test Case documents.

Table 11 System- Level Test Cases

	Test Cases
a. Volume Test	
During the Data Accuracy Test a minimum of 1,549,703 ballot positions will be exercised to confirm that this volume is handled by the voting system. AccuVote®-TSX with AVPM: • 4 units of DRE, running 13,500 ballots per unit (Total 54,000); • Total predicted volume of over 1,549,703 ballot positions; and • Voter selections are recorded, reported and available for consolidation; errors are correctly reported.	Data Accuracy and Volume Test Case
b. Stress Test	
Stresses for hardware-generated interrupts were initiated in the Environmental - Electrical Testing. Successful completion of the post electrical test Operational Status Checks provides validation (see Appendix E for hardware testing reuse). AccuVote®-OS-PC, AccuVote®-OSX, and PCS shall include processing of ballots at the equipment's maximum rate with an overvoted ballot injecting a hardware wait state and a mutilated ballot injecting a hardware interrupt. Accurate vote recording and reporting provides validation. AccuVote®-TSX and AccuVote®-TS R6 shall include processing of a voting session with a hardware interrupt. Appropriate error handling and voting recording provides validation when a VVPAT reaches the end of the role.	Post Environmental Electrical Testing Operational Status Checks Security Test Case Data Accuracy and Volume Test Case
c. Usability Tests:	
In the system level test cases election databases, DRE and paper ballots will be prepared, installed, voted and reported exercising the input controls, error content, and audit message content of the voting system. • A review will assess the content and clarity of instructions and processes.	General 1 through 4 Primary 1 through 2
d. Accessibility Tests:	
Audio and visual ballots will be programmed in the default language (English), a secondary language using a Western European font (Spanish), an ideographic languages (Chinese) and non-written audio	General 2 & 4, Primary 2 and Characteristics

	Test Cases

ballot. Votes will be cast to confirm:
    ● All ballot and instructions can be printed or displayed in supported languages;
    ● DRE ballots, instructions and voting system controls can be accessed visually, aurally or with non-manual dexterity aids in all supported languages; and
    ● DRE ballots and instructions can be accessed visually , aurally, and with non-manual controls adjusting screen contrast, ballot display settings (colors & text), and audio ballot controls within the ranges identified in the *VSS 2002*;
    ● DRE voter sound cues and alerts are accompanied by visual cues; and
    ● Precinct voting systems physical measurements of the voting systems will comply with Vol.1 Sect. 2.2.7.1 a through f.	

e. Security Tests:	

A PCA Security Document Review of each Voting System shall be executed to verify a means of implementing the following capabilities:
    ● Software/hardware access controls
    ● Effective password management
    ● Segregation of duties
    ● Individual Access Privileges
    ● Controlled System functions
    ● Safeguards to protect against tampering during system repair or interventions in system operations
During System Function testing steps will be incorporated into the pre-vote, vote, and post-vote election phases. These steps shall test:
    ● Security access controls that limit or detect access to critical system components (ballot preparation, opening/closing of polls, voter card activation, ballot activation, tallying of results, reading/transfer data, audit functions);
    ● System functions are executable only if the defined function predecessors are met; and
    ● Restoration of device to operating condition existing immediately prior to an error or non-catastrophic failure (power failure, memory device failure, voter card error). *See recovery test section g of this table for more recovery testing.*
 	
Security specific test cases shall include:
    ● Attempts to bypass or defeat voting system security including: changing vote data, copying voter cards, ability to bypass user passwords, modifying data in audit logs, and accessing controlled functions without appropriate validation;
    ● Voter denial of service attacks introduced via the voter card or results cartridges and memory cards.
    ● Attempts to circumvent physical security devices, without detection, including, destructible seals and system components locks for cartridge and memory card slots, polls switches, keypads, and hardware components; and
    ● Poll workers, voters, and operators as threat agents to access the ability of the voting system to resist or detect attacks, log and/or report attempts.
After defining language specific review criteria, a software source code review will be executed to confirm that:
    ● Audit logs report the date and time of normal and abnormal events;
    ● Data processing methods are verified through the use of
	General 1, 2, 3 & 4 Test Cases
	
	PCA Document Review: Security Specifications
	
	Source Code Review
	
	Security Test Case

	Test Cases
check-sums; • Modules have single entry/exit point; • There are no voter counter overflow; • There are no self modifying code; • Messages are encrypted; • There is separate and redundant ballot image, vote and audit recording; • There are no computer-generated passwords; and • Voting systems halt execution at the loss of critical systems.	
f. Performance Tests:	
During the system level and accuracy testing election databases will be programmed for the functions identified in Table 11. ASSURE™ 1.2 will be used to create the test election databases. These will include: • One or more DRE and one or more scanner; • Specific voting variations that are supported by the hardware and state specific election databases; and • Election setup and management reports. The voting equipment shall be programmed to verify: • Ballot instructions, formats, errors and status are presented to the appropriate voter (geographic, party, visual, audio, English, and/or multi-lingual); • Ballots can be viewed, voted, reviewed, cancelled, and votes modified and prior to casting; • Ballots can be cast in all voting modes (visual, audio, non-manual, English, and/or multi-lingual); • Votes can be accurately recorded and reported; • DRE optional/ required Voter Verified Paper Audit Trails can be viewed, modified, cancelled and cast; and • Optional/ required activation, accumulation, and transmission of votes. Election results shall be centrally complied to verify: • Accurate reporting at the required election, precinct and party level; and • Accurate reporting of optional Election Day and Post Election management reports.	General 1 through 4 Primary 1 through 2 Volume Test Cases
g. Recovery Tests:	
Test will be conducted to determine that the AccuVote®-TSX, AccuVote®-TS R6, AccuVote®-OS PC, and AccuVote®-OSX are able to: • Recover from power or other system failure, without loss of vote data; and • Be supported on back up power for a minimum of two hours. All applications were subjected to review to the error recovery requirements of *VSS* vol 1 Section 4.2.3e (see Appendix F for source code review reuse).	Characteristics Test Case Source Code Review

5. Test Data

5.1 Test Data Recording

The results of testing and review to the Premier ASSURE^{TM} 1.2 voting system to the *VSS 2002* are recorded in the test case and review forms prepared by iBeta. Environmental test data will be recorded in the manner appropriate to the test equipment with output reports detailing the results and analysis. Electronic copies of all testing and reviews will be maintained.

5.2 Test Data Criteria

The results of the voting system tests and reviews shall be evaluated against the documentation of the ASSURE^{TM} 1.2 voting system TDP, and the requirements of the *VSS 2002* The ASSURE^{TM} 1.2 voting system shall be evaluated for its performance against the standard and the expected results identified in each test case.

5.3 Test Data Reduction

Test data will be processed manually.

6. Test Procedures and Conditions

6.1 Facility Requirements

All software testing and review will be performed at iBeta laboratory in Aurora, Colorado

All Premier documentation, test documentation and results will be maintained in the Premier ASSURE™ 1.2 voting system project folder on the SharePoint server in the Voting. Only project assigned test personnel will have access to the Premier repository. Premier source code will be maintained on a separate server. Only project assigned test personnel will have access to the source code repository. Repositories are backed up daily using industry standard utilities.

6.2 Test Set-up

As part of the PCA, the Premier ASSURE™ 1.2 voting system test platform will be set-up in the manner identified in the system configuration identified in each component *Configuration Management Plan* (Premier has delivered a CM Plan within each TDP for each product). The test platform will be documented. Installation of the trusted build will be observed and documented. An inventory of any accessories or preloaded applications will be documented.

6.3 Test Sequence

There is no prescribed sequence for the testing of the voting system. The only sequence requirement is that predecessor tasks are completed prior to initiation of a task.

Table 12 –Sequence of Certification Test Tasks

Certification Test Task	Predecessor Task	Test Personnel
Identify scope of project for contract negotiation	Determination of voting system status (new or changed)	Gail Audette
Set up Project and Repositories	Contract Authority	Gail Audette Carolyn Coggins
Reporting of Discrepancies	Commencement of the project	All
PCA TDP Document Review	Project repository and TDP Documents received	Charles Cvetezar Ken Mathis
PCA TDP Source Code Review	Project repository and TDP Documents & Source Code received	Lauren Laboe Sri Jakileti Kevin Wilson David Mulderink
FCA Testing Review and Test Scope/ Requirements Identified	TDP Test Documents received	Ken Mathis Gail Audette
Certification Test Plan	Preliminary PCA TDP Document Review & FCA Testing Review	All
Test Readiness Review	Test Method development, Trusted Build, and Hardware Configuration	All
Test Method Validation	Completion of Test Methods	
FCA Test Case preparation	TDP Documentation received, FCA Testing Review, Identification of Test Scope and Requirements	Charles Cvetezar Sri Jakileti Ken Mathis Jeromey Patterson Kevin Wilson Gail Audette Carolyn Coggins
Test Method Validation	Completion of Test Methods	Gail Audette Charles Cvetezar Kevin Wilson
Test Tool Validation	Identification of tools; verify validations performed on earlier projects for standard tools	Ken Mathis Jeromey Patterson
PCA System Configuration	TDP Documentation, hardware and	All

Certification Test Task	Predecessor Task	Test Personnel
	software received	
Trusted Build	PCA Source Code Review	Kevin Wilson Lauren Laboe Sri Jakileti
Installation of Trusted Build	Review and validation of the installation procedure including user selections and configuration changes	Lauren Laboe Gail Audette Kevin Wilson
FCA Environmental Hardware Test Case Execution	FCA Test Case preparation & PCA System Configuration	Ken Mathis Gail Audette
FCA Accuracy Test Case	FCA Test Case preparation & PCA System Configuration	Carolyn Coggins Gail Audette
FCA Functional/System Level Test Case Execution	FCA Test Case preparation & PCA System Configuration	All
FCA Characteristics Test Case Execution	FCA Test Case preparation & PCA System Configuration	Jeromey Patterson
FCA Security Review & Testing	FCA Test Case preparation & PCA System Configuration	Kevin Wilson Sri Jakileti
FCA Telephony and Cryptography Review and Test Case	FCA Test Case preparation & PCA System Configuration	Kevin Wilson Sri Jakileti
Recovery/Error Handling Analysis	FCA Test Case preparation	Lauren Laboe
Volume, Stress and Recovery Test Case Execution	FCA Test Case preparation & PCA System Configuration	Charles Cvetezar Gail Audette Ken Mathis
Regression Testing of Discrepancy Fixes	Receipt of applicable fix or response from Premier and PCA Witness Build of reviewed code, if applicable	All
VSTL Certification Report	Successfully complete all FCA and PCA tasks	All
Document receipt of the System Identification Tools from the manufacturer	Receipt of the System Identification Tools from the manufacturer	TBD
Deliver the Certification Report for EAC Review	Completion of VSTL Certification Report	Gail Audette
Deposit Trusted Build and acknowledge delivery	Initial decision from the EAC and manufacturer letter	Gail Audette
Re-issue the Certification Report with the EAC Certification Number	Acceptance of the Certification Report by the EAC	Gail Audette

6.4 Test Operations Procedures

Test cases and review criteria are contained in separate documents. They are provided to the iBeta test staff and Environmental Hardware Subcontractor with step-by-step procedures for each test case or review conducted. Test and review instructions identify the methods for test or review controls. Results are recorded for each test or review step. Possible results include:

- **Accept:** the expected result of the test case is observed; an element of the voting system meets the *VSS 2002*
- **Reject:** the expected result of the test case is not observed; an element of the voting system did not meet the *VSS 2002*
- **Not Applicable (NA):** test or review steps that are not applicable to the scope of the current Certification are marked NA.
- **Not Testable (NT)**: rejection of a previous test step prevents execution of this and subsequent test steps.

Reject, Not Applicable and Not Testable results are marked with an explanatory note. The note for rejected results contains the discrepancy number.

Issues identified in testing or reviews are logged on the Discrepancy Report. Issue types include:

- Document Defects: a documentation element of the voting system did not meet the *VSS 2002.* Resolution of the defect is required for certification.
- Functional Defects: a hardware or software element of the voting system did not meet the *VSS 2002.* Resolution of the defect is required for certification.
- Informational: an element of the voting system which meets the *VSS 2002* but may be significant to either the vendor or the jurisdiction. Resolution of Informational issues is optional. Unresolved issues are disclosed in the certification report.

Test steps are numbered and a tabulation of the test results is reported in the test case. Test operation personnel and their assignments are identified in Table 12.

7. Test Methods

7.1 System Level Test Cases

The TDP documents utilized to create the following test methods are the most recent delivered as identified in Appendix A. The receipt and review of all TDP documents after the submittal of this test plan for approval will be recorded in the Test Method and in a Test Plan update.

7.1.1 General Elections

Method Detail	General Election Test Method 01	General Election Test Method 02	General Election Test Method 03	General Election Test Method 04
Test Case Name	GEN01	GEN02	GEN03	GEN04a-b
Scope - identifies the type of test	A general election system level test incorporating validations of the VSS 2002 required functionality. Testing includes validation of measurable performance including accuracy, processing rate, and ballot format handling capability of the ASSURE 1.2 voting system configured with: • AccuVote-TSX polling place DRE with AccuView Printer Module (VVPAT) with barcode. • AccuVote-OS Precinct Count (PC) precinct based paper ballot reader with AVOS ballot box. • AccuVote-OSX precinct based paper ballot reader with AVOSX ballot box. • Validation of the Key Card Tool used in conjunction with the AccuVote TSX voting device. • Validation of the AccuVote Memory Card Adapter (OSAA) used in conjunction with the AccuVote-OS PC and TSX voting devices. • Approved and non-approved Paper ballots. • Approved and non-approved marking devices. Functional aspects include error recovery, security, and usability of the hardware, software and procedures (manuals) in the pre-vote, voting, and post-voting operations of a voting system, logging and the Reports Module.	A repeatability general election system level test incorporating validations of the VSS 2002 required functionality. Testing includes validation of measurable performance including accuracy, processing rate, and ballot format handling capability of the ASSURE 1.2 voting system configured with: • AccuVote-TSX polling place DRE (non-AVPM) • Validation of the ExpressPoll 4000 used in conjunction with the AccuVote-TSX voting device • AccuVote-OS Central Count (CC) central count based paper ballot reader • Validation of the AccuFeed Model A used in conjunction with the AccuVote-OS CC voting device • AccuVote-OSX precinct based paper ballot reader with AVOSX ballot box • AutoMARK precinct based paper ballot marking device • PhotoScribe PS900 iM2 central count based paper ballot reader Functional aspects include error recovery, security, and usability of the hardware, software and procedures (manuals) in the pre-vote, voting, and post-voting operations of a voting system, logging and the Reports Module.	A general election system level test incorporating validations of the VSS 2002 required functionality. Testing includes validation of measurable performance including accuracy, processing rate, and ballot format handling capability of the ASSURE 1.2 voting system configured with: • AccuVote-TSX polling place DRE (non-AVPM) • AccuVote-TS R6 polling place DRE • Validation of the ExpressPoll 5000 used for Voter Card activation in conjunction with the AccuVote-TS/TSX voting devices • AccuVote-OS Precinct Count (PC) precinct based paper ballot reader with AVOS ballot box. • AccuVote-OSX precinct based paper ballot reader with AVOSX ballot box • AutoMARK precinct based paper ballot marking device Functional aspects include error recovery, security, and usability of the hardware, software and procedures (manuals) in the pre-vote, voting, and post-voting operations of a voting system, logging and the Reports Module.	A repeatability general election system level test incorporating validations of the VSS 2002 required functionality. Testing includes validation of measurable performance including accuracy, processing rate, and ballot format handling capability of the ASSURE 1.2 voting system configured with: • AccuVote-TSX polling place DRE (with AVPM) • AccuVote-OS Precinct Count (PC) precinct count based paper ballot reader • AccuVote-OS Central Count (CC) central count based paper ballot reader • AccuVote-OSX precinct based paper ballot reader with AVOSX ballot box • AutoMARK precinct based paper ballot marking device • PhotoScribe PS900 iM2 central count based paper ballot reader Functional aspects include error recovery, security, and usability of the hardware, software and procedures (manuals) in the pre-vote, voting, and post-voting operations of a voting system, logging and the Reports Module.
Test Objective	Validation of the ability to accurately and securely create, install, vote, count and report the results of a general election on the AccuVote-TSX DRE with attached AccuView Printer Module (AVPM) with barcode printing, AccuVote-OS Precinct Count and AccuVote-OSX paper ballot readers including the identified voting	Validation of the ability to accurately and securely create, install, vote, count and report the results of a general election on the AccuVote-TSX DRE, AccuVote-OS Central Count and AccuVote-OSX Precinct Count paper ballot readers, AutoMARK paper ballot marker and PhotoScribe PS900 iM2 (or	Validation of the ability to accurately and securely create, install, vote, count and report the results of a general election on the AccuVote-TS/TSX DRE's, AccuVote-OS/OSX Precinct Count paper ballot readers, AutoMARK paper ballot marker and ExpressPoll CardWriter including the identified voting variations.	Validation of the ability to accurately and securely create, install, vote, count and report the results of a general election on the AccuVote-TSX DRE with attached AccuView Printer Module (AVPM), AccuVote-OS Precinct Count, AccuVote-OS Central Count, AccuVote-OSX paper ballot readers, AutoMARK

Method Detail	General Election Test Method 01	General Election Test Method 02	General Election Test Method 03	General Election Test Method 04
	variations.	PhotoScribe PS960)central count paper ballot reader including the identified voting variations.		paper ballot marker and PhotoScribe PS900 iM2 (or PhotoScribe PS960) including the identified voting variations.

Test Variables: Voting Variations (as supported by the voting system)	General Election:
	Election Day voting
	Partisan/non-partisan offices
	Write-in votes (free for all)
	Split precincts
	Vote for 1
	Vote for N of M
	Slate/Group Voting
	Proposition/Question
	Recall A (no options)
	
	Manuals Testing (documents listed below are current in-house versions and testing will be conducted on the most recent delivered TDP):
	GEMS:
	  • GEMS 1.21.1 User's Guide v3.0
	  • GEMS 1.21.1 Reference Guide v3.0
	  • GEMS 1.20.2 Election Administrator's Guide v2.0
	  • GEMS 1.21.1 System Administrator's Guide v2.0
	AccuVote-OS PC:
	  • AccuVote-OS Precinct Count 1.96.11 User's Guide v.1.0
	  • AccuVote-OS Pollworker's Guide v.8.0
	  • GEMS AccuVote-OS Precinct Count Protocol v1.1
	AccuVote-OSX:
	  • AccuVote-OSX 1.2.1 User's Guide v2.0
	  • AccuVote-OSX Pollworker's Guide v4.0
	AccuVote-TSX (BallotStation):
	  • BallotStation 4.7.3 User's Guide v2.0
	  • BallotStation 4.7.3 System Administrator's Guide v1.0
	  • AccuVote-TSX Pollworker's Guide v10.0
	  • AccuView Printer Module Hardware Guide v6.0
	Key Card Tool:
	  • Key Card Tool 4.7.1 User's Guide v1.0
	AccuVote Memory Card Adapter (OSAA):
	  • OSAA Hardware Guide v5.0
		General Election:
		Election Day voting
		Straight Party (column oriented)
		  • Cross-party Endorsement
		Partisan/non-partisan offices
		Write-in votes (free for all)
		Vote for 1
		Vote for N of M
		Slate/Group Voting
		Proposition/Question
		Recall B (options follow :Yes")
		Tally Settings
		  • TS: Non-PA Straight Party
		  • OS: Exclusive, non-Mandatory
		Manuals Testing (documents listed below are current in-house versions and testing will be conducted on the most recent delivered TDP)**:**
		GEMS (for Straight Party rules):
		  • GEMS 1.21.1 User's Guide v3.0
		  • GEMS 1.21.1 Reference Guide v3.0
		AccuVote-OS CC Manuals:
		  • AccuVote-OS Central Count 2.0.13 User's Guide v3.0
		  • FEC 2002 AccuVote-OS Technical Data Package Appendix J: Ballot Processing v2.1
		AccuFeed Manuals:
		  • AccuFeed Hardware Guide v5.0
		AutoMARK (AIMS) Manuals:
		  • AIMS PREM Sect05 Election Officials Guide AQS-13-5001-208-R
		  • AIMS PREM Sect05 System Operations Procedures AQS-13-5011-200-R
		ExpressPoll 4000 Manuals:
		  • ExpressPoll 4000 EZRoster Pollworker's Guide v2.0
		  • ExpressPoll 4000 EZRoster User's Guide v3.0
		Premier Central Scan Manuals:
		  • Premier Central Scan 2.2.1 User's Guide v1.0
		  • DRS PhotoScribe PS900 iM2/PS960 Hardware Guide v6.0
			General Election:
			Election Day voting
			Single Precinct
			Vote 1 of N
			Vote N of M
			Slate & Group Voting
			Proposition/Question
			Multi-lingual
			Audio
			  • import
			  • direct record
			Accessibility (Sip/Puff)
			Ballot Text Report
			  • Export Rich Text
			  • Import Rich Text
				General Election:
				Election Day voting
				Multiple Districts (not all rotate)
				Single Split Precinct
				Partisan/non-partisan offices
				Write-in votes (free for all)
				Vote for 1
				Vote for N of M
				District rotation - set during District creation
				Early Voting
				Provisional Voting
				Race Rotations - set in Race Options:
				GEN04a: by precinct
				
				GEN04b: District
				
				Manuals Testing (documents listed below are current in-house versions and testing will be conducted on the most recent delivered TDP):
				GEMS (for Rotation rules):
				  • GEMS 1.21.1 User's Guide v3.0
				  • GEMS 1.21.1 Reference Guide v3.0

Method Detail	General Election Test Method 01	General Election Test Method 02	General Election Test Method 03	General Election Test Method 04
A description of the voting system type and the operational environment	Testing of the Premier Election Solutions ASSURE 1.2 voting system shall include: The GEMS 1.21 SW ballot preparation & central count SW installed on a Windows XP Professional SP2 OS PC. See "*g. environmental conditions required*" for specific HW, SW, FW revisions/versions Votes shall be cast and/or read on the: **AccuVote-TSX** DRE running BallotStation 4.7 FW • Ballot & election results transfer (internal copy) memory (CF) • Ballot & election results transfer Memory Card (ATA/PCMCIA) • Key Card Tool HW for ballot activation and Smartcards for ballot activation/transfer • AVPM HW for software independent vote validation **AccuVote-TS R6** DRE running BallotStation 4.7 FW • Ballot & election results transfer (internal copy) memory (CF) • Ballot & election results transfer Memory Card (ATA/PCMCIA) • Key Card Tool HW for ballot activation and Smartcards for ballot activation/transfer **AccuVote-OS PC** precinct based optical scanner • Serial port HW (on GEMS server) for transferring data to the Memory Card • Memory Card for ballot & election results transfer • AVOS ballot bin for ballot sorting **AccuVote-OSX** precinct count optical scanner • Ethernet network HW (on GEMS server) for transferring data to the Memory Card • Memory Card for ballot & election results transfer • AVOSX ballot bin for ballot sorting	Testing of the Premier Election Solutions ASSURE 1.2 voting system shall include: The GEMS 1.21 SW ballot preparation & central count SW installed on a Windows XP Professional SP2 OS PC. See "*g. environmental conditions required*" for specific HW, SW, FW revisions/versions Votes shall be cast and/or read on the: **AccuVote-TSX** DRE running BallotStation 4.7 FW • Ballot & election results transfer (internal copy) memory (CF) • Ballot & election results transfer Memory Card (ATA/PCMCIA) • ExpressPoll 4000 HW for Voter Card activation **AccuVote-OS CC** central count based optical scanner • TCP port HW (on GEMS server) for transferring data to the Memory Card • Memory Card for ballot & election results transfer • AccuFeed ballot feeder **AccuVote-OS PC** precinct based optical scanner • Serial port HW (on GEMS server) for transferring data to the Memory Card • Memory Card for ballot & election results transfer • AVOS ballot bin for ballot sorting **AccuVote-OSX** precinct count optical scanner • Ethernet network HW (on GEMS server) for transferring data to the Memory Card • Memory Card for ballot & election results transfer • AVOSX ballot bin for ballot sorting **PhotoScribe PS900 iM2** **AutoMARK** ballot marking device.	Testing of the Premier Election Solutions ASSURE 1.2 voting system shall include: The GEMS 1.21 SW ballot preparation & central count SW installed on a Windows XP Professional SP2 OS PC. See "*g. environmental conditions required*" for specific HW, SW, FW revisions/versions Votes shall be cast and/or read on the: **AccuVote-TSX** DRE running BallotStation 4.7 FW • Ballot & election results transfer (internal copy) memory (CF) • Ballot & election results transfer Memory Card (ATA/PCMCIA) • Accessibility: UAID Model A, VIBS, Headphones **AccuVote-TS R6** DRE running BallotStation 4.7 FW • Ballot & election results transfer (internal copy) memory (CF) • Ballot & election results transfer Memory Card (ATA/PCMCIA) • Accessibility: UAID Model A, VIBS, Headphones **AccuVote-OS PC** precinct based optical scanner • Serial port HW (on GEMS server) for transferring data to the Memory Card • Memory Card for ballot & election results transfer • AVOS ballot bin for ballot sorting **AccuVote-OSX** precinct count optical scanner • Ethernet network HW (on GEMS server) for transferring data to the Memory Card • Memory Card for ballot & election results transfer • AVOSX ballot bin for ballot sorting **AutoMARK** ballot marking device • Accessibility: UAID Model A, VIBS, Headphones	Testing of the Premier Election Solutions ASSURE 1.2 voting system shall include: The GEMS 1.21 SW ballot preparation & central count SW installed on a Windows XP Professional SP2 OS PC. See "*g. environmental conditions required*" for specific HW, SW, FW revisions/versions Votes shall be cast and/or read on the: **AccuVote-TS R6** (Early Voting) DRE running BallotStation 4.7 FW • Ballot & election results transfer (internal copy) memory (CF) • Ballot & election results transfer Memory Card (ATA/PCMCIA) • Key Card Tool for ballot activation and Smartcards for ballot activation/transfer **AccuVote-OS CC** central count based optical scanner • TCP port HW (on GEMS server) for transferring data to the Memory Card • Memory Card for ballot & election results transfer • AccuFeed ballot feeder **AccuVote-OS PC** precinct count optical scanner • Ethernet network HW (on GEMS server) for transferring data to the Memory Card • Memory Card for ballot & election results transfer **AccuVote-OSX** precinct count optical scanner • Ethernet network HW (on GEMS server) for transferring data to the Memory Card • Memory Card for ballot & election results transfer **PhotoScribe PS900 iM2** Votes shall be marked on the AutoMARK marking device. **AutoMARK** ballot marking device. **ExpressPoll 5000** Voter Card activation for AccuVote-TS/TSX
VSS 2002 vol. 1	2.2.1 thru 2.2.6, 2.2.8 thru 2.2.10, 2.3 thru 2.3.5, 2.4 thru 2.5.3.2	Same as GEN01	2.2.1 thru 2.2.6, 2.2.7.2. thru 2.2.10, 2.3 thru 2.5.3.2 HAVA a thru c2	Same as GEN01

Method Detail	General Election Test Method 01	General Election Test Method 02	General Election Test Method 03	General Election Test Method 04
VSS 2002 vol. 2	6.2 thru 6.4.1, 6.6, 6.7	Same as GEN01	6.2 thru 6.4.1, 6.5 thru 6.7	Same as GEN01
Hardware, Software voting system configuration and test location See Volume I Section 3 for detail of HW, SW & FW Version information is listed in Tables 4, 5 & 6	**EMS: ASSURE 1.2** SW: GEMS 1.21 OS: GEMS 1.21 Windows XP Pro SP2 (COTS) HW: COTS Windows PC Server/Workstation **DRE: AccuVote-TSX** FW: BallotStation 4.7 HW: AccuVote-TSX Model D DRE • Memory Card (PCMCIA, 128Mb) • Smartcards • AVPM base w/printer (Model A) **DRE: AccuVote-TS R6** FW: BallotStation 4.7 HW: AccuVote-TS Model A DRE • Memory Card (PCMCIA, 128Mb) • Smartcards **Paper: AccuVote-OS PC** FW: AccuVote-OS PC (1.96) HW: AccuVote-OS PC Model D Low Profile optical scanner • Memory Card (PCMCIA, 128Kb) • AVOS ballot box **Paper: AccuVote-OSX** FW: AccuVote-OSX (1.2) HW: AccuVote-OSX Model A optical scanner • Memory Card (PCMCIA, 128Mb) • AVOSX ballot box **Other** SW: Key Card Tool (4.7) HW: Smart-Card Terminal ST100/ST120 HW: OSAA Model A Manuals as per "d. Test Variables" Test Location: iBeta, Aurora, CO (Lab 25)	**EMS:** Same as GEN01 **DRE: AccuVote-TSX** FW: Same as GEN01 HW: AccuVote-TSX Model C DRE • Memory Card (PCMCIA, 128Mb) • Smartcards • Non-AVPM base **Paper: AccuVote-OS PC** FW: AccuVote-OS PC (1.96) HW: AccuVote-OS PC Model C High Profile optical scanner • Memory Card (PCMCIA, 128Kb) • AVOS ballot box **Paper: AccuVote-OS CC** FW: AccuVote-OS CC (2.0) HW: AccuVote-OS CC Model A Low Profile optical scanner • Memory Card (PCMCIA, 128Kb) • AccuFeed Model A **Paper: AccuVote-OSX** FW: Same as GEN01 HW: AccuVote-OSX Model A optical scanner • Memory Card (PCMCIA, 128Mb) • AVOSX ballot box **Paper: PhotoScribe PS900 iM2** • SW: Premier Central Scan (PCS 2.2) **DRE: AutoMARK** HW: AutoMARK Model A100 ballot marker SW: AIMS 1.3 Other manuals as per "d. Test Variables" Test Location: iBeta, Aurora, CO (Lab 25)	**EMS:** Same as GEN01 **DRE: AccuVote-TSX** FW: BallotStation 4.7 HW: AccuVote-TSX Model B DRE • Memory Card (PCMCIA, 128Mb) • Smartcards • Non-AVPM base • Accessibility: UAID Model A, VIBS, Headphones **DRE: AccuVote-TS R6** FW: BallotStation 4.7 HW: AccuVote-TS Model A DRE • Memory Card (PCMCIA, 128Mb) • Smartcards • Accessibility: UAID Model A, VIBS, Headphones **Paper: AccuVote-OS PC** FW: AccuVote-OS PC (1.96) HW: AccuVote-OS PC Model D Low Profile optical scanner • Memory Card (PCMCIA, 128Kb) • AVOS ballot box **Paper: AccuVote-OSX** FW: AccuVote-OSX (1.2) HW: AccuVote-OSX Model A optical scanner • Memory Card (PCMCIA, 128Mb) • AVOSX ballot box **DRE: AutoMARK** HW: AutoMARK Model A300 ballot marker • Accessibility: UAID Model A, VIBS, Headphones SW: AIMS 1.3 **Other: ExpressPoll 5000** FW: CardWriter 1.1 Manuals as per "d. Test Variables" Test Location: iBeta, Aurora, CO (Lab 25)	**EMS:** Same as GEN01 **DRE: AccuVote-TSX** FW: Same as GEN01 HW: AccuVote-TSX Model A DRE • Memory Card (PCMCIA, 128Mb) • Smartcards • AVPM base w/printer (Model A) **Paper: AccuVote-OS CC** FW: AccuVote-OS CC (2.0) HW: AccuVote-OS CC Model D Low Profile optical scanner • Memory Card (PCMCIA, 128Kb) **Paper: AccuVote-OS PC** FW: AccuVote-OS PC (1.96) HW: AccuVote-OS PC Model C Low Profile optical scanner • Memory Card (PCMCIA, 128Kb) • AVOS ballot box **Paper: AccuVote-OSX** FW: Same as GEN01 HW: AccuVote-OSX Model A optical scanner • Memory Card (PCMCIA, 128Mb) • AVOSX ballot box **Paper: PhotoScribe PS900 iM2 Same as GEN01** **DRE: AutoMARK** HW: AutoMARK Model A200 ballot marker SW: AIMS 1.3 Other manuals as per "d. Test Variables" Test Location: iBeta, Aurora, CO (Lab 25)

Method Detail	General Election Test Method 01	General Election Test Method 02	General Election Test Method 03	General Election Test Method 04
Pre-requisites and preparation for execution of the test case.	Complete the prerequisites; • Record the testers & date • System has been set up as identified in the user manual(s) • Gather any necessary materials or manuals. • Ensure customization of the test case template is complete • Use a Supervisory level access user and password for GEMS • Use Supervisory level access cards for AccuVote-TS/TSX and AccuVote-OSX • Use a Supervisory level access password for AccuVote-OS Test Method Validation: Technical review conducted by G. Audette; Approved 2/5/09. for validation of test method as defined in ISO/IEC 17025 clause 5.4.5.	Complete the prerequisites; • Record the testers & date • System has been set up as identified in the user manual(s) • Gather any necessary materials or manuals. • Ensure customization of the test case template is complete • Use a Supervisory level access user and password for GEMS • Use a Supervisory level access user and password for PCS • Use Supervisory level access cards for AccuVote-TSX/OSX • Use a Supervisory level access password for AccuVote-OS • Use a Supervisory level access password for AutoMARK • Use Supervisory level access cards for ExpressPoll 4000 Test Method Validation: Technical review conducted by G. Audette; Approved 2/11/09. for validation of test method as defined in ISO/IEC 17025 clause 5.4.5.	Complete the prerequisites; • Record the testers & date • System has been set up as identified in the user manual(s) • Gather any necessary materials or manuals. • Ensure customization of the test case template is complete • Use a Supervisory level access user and password for GEMS • Use Supervisory level access cards for AccuVote-TS/TSX and AccuVote-OSX • Accessibility: UAID Model A, VIBS, Headphones configuration for AccuVote-TS/TSX • Use a Supervisory level access password for AccuVote-OS • Use a Supervisory level access password for AutoMARK • Use Supervisory level access cards for ExpressPoll 5000 Test Method Validation: Technical review conducted by G. Audette; Approved 2/11/09. for validation of test method as defined in ISO/IEC 17025 clause 5.4.5.	Complete the prerequisites; • Record the testers & date • System has been set up as identified in the user manual(s) • Gather any necessary materials or manuals. • Ensure customization of the test case template is complete • Use a Supervisory level access user and password for GEMS • Use a Supervisory level access user and password for PCS • Use Supervisory level access cards for AccuVote-TSX/OSX/OS CC • Use a Supervisory level access password for AccuVote-OS Test Method Validation: Technical review conducted by G. Audette; Approved 2/11/09. for validation of test method as defined in ISO/IEC 17025 clause 5.4.5.
Getting Started Checks	Check the voting system to : • Verify the test environment and system configuration is documented in the PCA Configuration and vendor described configuration. • Validate installation of a witnessed build Testers understand that no change shall occur to the test environment without documentation in the test record and the authorization of the project manager.	Same as GEN01	Same as GEN01	Same as GEN01
Documentation of Test Data & Test Results	Test Data: • Record all programmed & observed election, ballot & vote data fields and field contents on the corresponding tabs to provide a method to repeat the test • Preserve all tabs for each instance the test is run. Test Results: • Enter Accept/Reject on the Test Steps • In Comments enter any deviations, discrepancies, or notable observations • Log discrepancies on the Discrepancy Report and insert the number in the Comments	Same as GEN01	Same as GEN01	Same as GEN01

Method Detail	General Election Test Method 01	General Election Test Method 02	General Election Test Method 03	General Election Test Method 04
Pre-vote: Ballot Preparation procedures verifications	Ballot Prep: • An election database can be accurately/securely defined & formatted. • A ballot (candidates & propositions) can be accurately/securely defined & generated. • Election media can be accurately/securely programmed & installed • The user manuals are sufficiently detailed for preparation of a General Election ballot as per "d. Test Variables"	Same as GEN01	Same as GEN01	Same as GEN01
Pre-vote: Ballot Preparation Security	Ballot Prep: • Security access controls limit or detect access to critical systems and the loss of system integrity, availability, confidentiality & accountability • Functions are only executable in the intended manner, order & under intended conditions • Prevents execution of functions if preconditions weren't met • Implemented restrictions on controlled functions • Documentation of mandatory administrative procedures. COTS: • Authentication is configured on the local terminal & external connection devices, • Operating systems are enabled for all session & connection openings, & closings, all process executions & terminations & for the alteration or detection of any memory or file object • Configure the system to only execute intended & needed processes during the execution election software. Processes are halted until termination of critical system processes (such as audit).	Same as GEN01	Same as GEN01	Same as GEN01

Method Detail	General Election Test Method 01	General Election Test Method 02	General Election Test Method 03	General Election Test Method 04

Readiness Testing and Poll Verification	Voting system is ready for the election:
	• Status & data reports are generated
	• The election is correctly installed
	• The voting system functions correctly
	• Test data is segregated from voting data, with no residual effect
	The polling place voting system functions properly including a formal record of:
	• Election, polling place, voting system & ballot format identification
	• Zero count report
	• A list of all ballot fields
	• Other information to confirm readiness & accommodate administrative reporting requirements
	Test confirmation that there are:
	• No hardware/software failures
	• The device is ready to be activated to accept votes
		Same as GEN01	Same as GEN01 with:
			• Confirmation testing of multi-lingual ballot availability for display and audio
			• Confirmation testing of Voting Accessibility
			  • UAID switching input device
			  • VIBS input device
			  • COTS headphones
				Same as GEN01

Pre- vote: Opening the Polls Verification	Precinct Count: • The system is disabled until the internal test is successfully completed. Paper based: • Means to verify ballot marking devices are properly prepared & ready for use • Activating & verifying the ballot counting device is correctly activated & functioning • Identification of any failures & corrective action • Test acceptability of approved (135 g/m2 paper, marked with any standard pen or pencil) and non-approved writing devices (bleed-through, red, orange, or yellow inks which are highly reflective or transparent to colors) DRE • Security seal, password, or data code recognition capability preventing inadvertent or unauthorized poll opening • Means to enforce the proper sequence of steps to open the polls • Means to verify correct activation • Identification of any failures & corrective action	Same as GEN01	Same as GEN01	Same as GEN01

Method Detail	General Election Test Method 01	General Election Test Method 02	General Election Test Method 03	General Election Test Method 04

Voting: Ballot Activation and Casting Verifications	Protects secrecy of ballot/vote
	 • Records selection/non-selection for each contest
	Paper-based:
	 • Allow voter to identify & mark candidates
	 • Mark 135 g/m2 paper ballots with approved standard pen or pencil
	 • Allow placement of voted ballots into a precinct ballot counter or secure receptacle
	 • Gives feedback & an opportunity to correct, before the ballot is counted (blank/under/overvotes)
	DRE:
	 • Voter can make selections based on ballot programming & indicate selection, cancellation, & non-selection (blanks/undervotes)
	 • Alert overvotes; permit review & change before casting
	 • Alert undervotes; permit review & change before casting
	 • Alert blank voted office; permit review & change before casting
	 • Alert selection's complete; prompt confirmation as casting is irrevocable,
	 • Alert successful/unsuccessful storage of cast ballot; give instruction to resolve unsuccessful casting
	 • Prevent modification of vote & access until the polls close
	 • Increment the ballot counter
	Fleeing voters (cast, canceled):
	 • with selection(s) made
	 • blank ballot
	Cast votes in Early Voting mode
	Provisional Voting
		Same as GEN01 (with no Early/Provisional voting)
		 • Make one selection to vote for all candidates of one party in a general election
		 • Verifies one candidate can be endorsed by multiple parties
		 • Cross endorsed candidates in an N of M contest can only receive a single vote
		 • When the voter selects a Yes response to the recall proposal, that voter will be allowed to cast a vote for a candidate in the recall linked office. An under/overvote will not allow a vote in the second contest to be counted.
			Same as GEN01 (with no Early/Provisional voting)
			 • Multi-lingual audio files and audio ballot using accessibility:
			   • UAID switching input device
			   • VIBS input device
			   • COTS headphones
				Same as GEN01 (with no Early/Provisional voting)
				 • Districts rotated as set
				 • Ballots rotated as set

Method Detail	General Election Test Method 01	General Election Test Method 02	General Election Test Method 03	General Election Test Method 04
Voting: Voting System Integrity, System Audit, Errors & Status Indicators	The system audit provides a time stamped, always available, report of normal/abnormal events that can't be turned off when the system is in operating mode. Status message are part of the real time audit record. • Critical status messages requiring operator intervention shall use clear indicators or text Error messages are: • Are generated, stored & reported as they occur • Errors requiring intervention by the voter or poll worker clearly display issues & action instructions in easily understood text language or with indicators • The text for any numeric codes is contained in the error or affixed to the inside of the voting system • Incorrect responses will not lead to irreversible errors. • Nested conditions are corrected in the sequence to restore the system to the state before the error occurred	Same as GEN01	Same as GEN01 • Errors requiring intervention by the voter or poll worker are clearly multi-lingual audible issues & multi-lingual action instructions in easily understood audible or with visual/audible indicators	Same as GEN01
Post-vote: Closing the Polls	Once the polls are closed the precinct count voting system • Prevents further casting of ballots or reopening of the polls • Internally tests and verifies that the closing procedures has been followed and the device status is normal • Visibly displays the status • Produces a test record that verifies the sequence of events and indicates the extraction of vote data is activated • Barcodes printed on AVPM	Same as GEN01: • no AVPM	Same as GEN01: • no AVPM	Same as GEN01: • no barcodes

Method Detail	General Election Test Method 01	General Election Test Method 02	General Election Test Method 03	General Election Test Method 04

Post-vote: Central Count	Vote Consolidation:
	Consolidated reported votes match predicted votes from polling places, & optionally other sources (absentee)
	Reports include:
	  • Geographic reports of votes; each contest by precinct & other jurisdictional levels
	  • Printed reports of ballots counted by tabulator, with votes, blank/undervotes/overvotes
	  • Report of system audit information printed or in electronic memory
	  • Report identifying overvotes
	  • Report identifying blank voted offices
	  • Prevent data from being altered or destroyed by report generation, transmission over telecommunication lines or extraction from portable media
	  • Permit extraction & consolidate votes from programmable memory services or data storage medium
	  • Consolidate the votes from multiple voting systems into a single polling place report
	DRE:
	  • Electronic ballot images of votes cast by each voter, extracted from a separate process & storage location, is reported in human readable form
	Paper Based:
	  • Test acceptability of approved (135 g/m2 paper ballots with approved standard pen or pencil) and non-approved writing devices (bleed-through, red, orange, or yellow inks which are highly reflective or transparent to colors)
		Same as GEN01	Same as GEN01	Same as GEN01

Method Detail	General Election Test Method 01	General Election Test Method 02	General Election Test Method 03	General Election Test Method 04
Post-vote: Security	The central count: • Security access controls limit or detect access to critical systems and the loss of system integrity, availability, confidentiality and accountability • Audit logs reflect all events even the events of where non authorized user of a function trying to gain access to a specific function of the system • Non authenticated voting machine results cannot be read by GEMS • Functions are only executable in the intended manner, order and under the intended conditions • Prevented execution of functions if preconditions were not met • Implemented restrictions on controlled functions • Provided documentation of mandatory administrative procedures. • Operation of vote tally continues when power gets restored, all unsaved data will be required to be re-added. • System can not be re-intialized after polls have been closed. • DRE device System Reset does not erase the memory card. • Only valid memory cards are accepted during vote tallying. • Password keys are computer generated and data cannot be read without having that key. COTS systems • Authentication is configured on the local terminal and external connection devices, • Operating systems are enabled for all session and connection openings, and closings, all process executions and terminations and for the alteration or detection of any memory or file object • Configure the system to only execute the intended and necessary processes during the execution of the election software. Election software process are halted until the termination of any critical system process, such as system audit.	The central count: • Security access controls limit or detect access to critical systems and the loss of system integrity, availability, confidentiality and accountability • Functions are only executable in the intended manner, order and under the intended conditions • Prevented execution of functions if preconditions were not met • Implemented restrictions on controlled functions • Provided documentation of mandatory administrative procedures. • Data on the Memory Cards are encrypted. • Memory Card can only be consolidated once • Error messages are displayed when trying to consolidating incorrect Memory Cards on the PCS. • Memory Cards need to be closed prior to being consolidated. • Interruption of power during consolidation requires consolidation of pervious memory devices. • Audit logs reflect all activities during post vote COTS systems: Same as GEN01	Same as GEN02	Same as GEN02

Method Detail	General Election Test Method 01	General Election Test Method 02	General Election Test Method 03	General Election Test Method 04
Post-vote: System Audit	The system audit provides a central count time stamped, always available, report of normal and abnormal events that cannot be turned off when the system is in operating mode. Status message are part of the real time audit record. DRE: barcodes printed on AVPM.	Same as GEN01 except: • applied to PCS • applied to AutoMARK • no AVPM	Same as GEN01 except: • applied to PCS • applied to AutoMARK • applied to AccuVote-TS R6 • applied to ExpressPoll 5000	Same as GEN01 except: • applied to PCS
Expected Results are observed	Review the test result against the expected result: • Accept: the expected result is observed • Reject: the expected result of the test case is not observed • Not Testable (NT): rejection of a previous test step prevents execution of this step, or tested in another TC. • Not Applicable (NA): not applicable to test scope	Same as GEN01	Same as GEN01	Same as GEN01
Record observations and all input/outputs for each election;	All inputs, outputs, observations, deviations and any other information impacting the integrity of the test results will be recorded in the test case. • Any failure against the requirements of the EAC guidelines will mean the failure of the system. and shall be reported as such. • Failures will be reported to the vendor as Defect Issues in the Discrepancy Report. • The vendor shall have the opportunity to cure all discrepancies prior to issuance of the Certification Report. • If cures are submitted the applicable test will be rerun. Complete information about the rerun test will be preserved in the test case. The cure and results of the retest will be noted in the - Discrepancy Report and submitted as an appendix of the Certification Report. • Operations which do not fail the requirements but could be deemed defects or inconsistent with standard software practices or election practices will be logged as Informational Issues on the Discrepancy Report. It is the vendor's option to address these issues. Open items will be identified in the report. DRE: barcodes printed on AVPM.	Same as GEN01 except: • no AVPM	Same as GEN01 except: • no AVPM	Same as GEN01 except: • no barcodes

7.1.2 Primary Elections

Method Detail	Primary Election 01	Primary Election 02
Test Case Name	PRI01 - Open Primary (Selective)	PRI02 - Closed Primary
Scope - identifies the type of test	An open primary election (Selective Primary) system level test incorporating validations of the VSS 2002 required functionality. Testing includes validation of measurable performance including accuracy, processing rate, and ballot format handling capability of the ASSURE 1.2 voting system configured with: • AccuVote-TS R6 polling place DRE. • AccuVote-OS Precinct Count (PC) precinct based paper ballot reader with AVOS ballot box. • AccuVote-OS Central Count (CC) based paper ballot reader. • AccuVote-OSX precinct based paper ballot reader with AVOSX ballot box. • AutoMARK precinct based paper ballot marking device • PhotoScribe PS960 central count based paper ballot reader • Validation of the ExpressPoll 4000 used for Voter Card activation in conjunction with the AccuVote-TS R6 voting device. Functional aspects include error recovery, security, and usability of the hardware, software and procedures (manuals) in the pre-vote, voting, and post-voting operations of a voting system, logging and the Reports Module.	A closed primary election system level test incorporating validations of the VSS 2002 required functionality. Testing includes validation of measurable performance including accuracy, processing rate, and ballot format handling capability of the ASSURE 1.2 voting system configured with: • AccuVote-TS R6 polling place DRE. • AccuVote-OS Precinct Count (PC) precinct based paper ballot reader with AVOS ballot box. • AccuVote-OSX precinct based paper ballot reader with AVOSX ballot box. • AutoMARK precinct based paper ballot marking device Functional aspects include error recovery, security, and usability of the hardware, software and procedures (manuals) in the pre-vote, voting, and post-voting operations of a voting system, logging and the Reports Module.
Test Objective	Validation of the ability to accurately and securely create, install, vote, count and report the results of a general election on the AccuVote-TS R6 DRE, AccuVote-OS CC/PC, AccuVote-OSX paper ballot readers and AutoMARK ballot marking device including the identified voting variations.	Validation of the ability to accurately and securely create, install, vote, count and report the results of a general election on the AccuVote-TS R6 DRE, AccuVote-OS PC, AccuVote-OSX paper ballot readers and AutoMARK ballot marking device including the identified voting variations.
Test Variables: Voting Variations (as supported by the voting system)	Primary Election: 2 Page Ballot Open Primary: • Open primary with private declaration (Selective Primary) • Party selection is first choice (preference, non-mandatory) • list nominees, not delegates Single Precinct Vote 1 of N Vote N of M Proposition/Question Absentee **Manuals Testing** (documents listed below are current in-house versions and testing will be conducted on the most recent delivered TDP): GEMS (for private selection Open Primary):	Primary Election: Closed Primary: * Same as open primary with public declaration * list delegates with nominees Split Precincts: * 5 districts * 7 precincts Vote 1 of N Vote N of M Write-In (registered) Recall D- options follow either Yes or No **Manuals Testing** (documents listed below are current in-house versions and testing will be conducted on the most recent delivered TDP): GEMS (for Closed Primary rules):

Method Detail	Primary Election 01	Primary Election 02

	• GEMS 1.21.1 User's Guide v3.0
	• GEMS 1.21.1 Reference Guide v3.0
	ExpressPoll 4000 Manuals:
	  • ExpressPoll 4000 EZRoster Pollworker's Guide v2.0
	  • ExpressPoll 4000 EZRoster User's Guide v3.0
	Premier Central Scan Manuals:
	  • Premier Central Scan 2.2.1 User's Guide v1.0
	  • DRS PhotoScribe PS900 iM2/PS960 Hardware Guide v6.0
		• GEMS 1.21.1 User's Guide v3.0
		• GEMS 1.21.1 Reference Guide v3.0
		VCProgrammer:
		  • VCProgrammer 4.7.2 User's Guide v1.0

A description of the voting system type and the operational environment	Testing of the Premier Election Solutions ASSURE 1.2 voting system shall include:
	The GEMS 1.21 SW ballot preparation & central count SW installed on a Windows XP Professional SP2 OS PC.
	
	Votes shall be cast and/or read on the:
	AccuVote-TS R6 DRE running BallotStation 4.7 FW
	  • Ballot & election results transfer (internal copy) memory (CF)
	  • Ballot & election results transfer Memory Card (ATA/PCMCIA)
	  • Key Card Tool HW for ballot activation and Smartcards for ballot activation/transfer
	AccuVote-OS PC precinct based optical scanner
	  • Serial port HW (on GEMS server) for transferring data to the Memory Card
	  • Memory Card for ballot & election results transfer
	  • AVOS ballot bin for ballot sorting
	AccuVote-OS CC central count based optical scanner
	  • TCP port HW (on GEMS server) for transferring data to the Memory Card
	  • Memory Card for ballot & election results transfer
	  • AccuFeed ballot feeder
	AccuVote-OSX precinct count optical scanner
	  • Ethernet network HW (on GEMS server) for transferring data to the Memory Card
	  • Memory Card for ballot & election results transfer
	  • AVOSX ballot bin for ballot sorting
	PhotoScribe PS960
	AutoMARK ballot marking device.
		Testing of the Premier Election Solutions ASSURE 1.2 voting system shall include:
		The GEMS 1.21 SW ballot preparation & central count SW installed on a Windows XP Professional SP2 OS PC.
		See "*g. environmental conditions required*" for specific HW, SW, FW revisions/versions
		
		Votes shall be cast and/or read on the:
		AccuVote-TS R6 DRE running BallotStation 4.7 FW
		  • Ballot & election results transfer (internal copy) memory (CF)
		  • Ballot & election results transfer Memory Card (ATA/PCMCIA)
		  • Key Card Tool HW for ballot activation and Smartcards for ballot activation/transfer
		AccuVote-OS PC precinct based optical scanner
		  • Serial port HW (on GEMS server) for transferring data to the Memory Card
		  • Memory Card for ballot & election results transfer
		  • AVOS ballot bin for ballot sorting
		AccuVote-OSX precinct count optical scanner
		  • Ethernet network HW (on GEMS server) for transferring data to the Memory Card
		  • Memory Card for ballot & election results transfer
		  • AVOSX ballot bin for ballot sorting
		AutoMARK ballot marking device.

VSS 2002 vol. 1	2.2.1 thru 2.2.6, 2.2.8 thru 2.2.10, 2.3 thru 2.3.5, 2.4 thru 2.5.3.2	Same as PRI01
VSS 2002 vol. 2	6.2 thru 6.4.1, 6.6, 6.7	Same as PRI01

Hardware, Software voting system configuration and test location
 	
See Section 3 for detail of HW, SW & FW
	EMS: ASSURE 1.2
	 SW: GEMS 1.21
	 OS: GEMS 1.21 Windows XP Pro SP2 (COTS)
	 HW: COTS Windows PC Server/Workstation
	DRE: AccuVote-TS R6
	 FW: BallotStation 4.7
	 HW: AccuVote-TS Model A DRE
	   • Memory Card (PCMCIA, 128Mb)
	   • Smartcards
		EMS: Same as PRI01
		DRE: AccuVote-TS R6
		 FW: BallotStation 4.7
		 HW: AccuVote-TS Model B DRE
		   • Memory Card (PCMCIA, 128Mb)
		   • Smartcards
		Paper: AccuVote-OS PC
		 FW: AccuVote-OS PC (1.96)
		 HW: AccuVote-OS PC Model A Low Profile optical scanner

Method Detail	Primary Election 01	Primary Election 02

Version information is listed in Tables 3, 4 & 5	**Paper: AccuVote-OS PC**
	FW: AccuVote-OS PC (1.96)
	HW: AccuVote-OS PC Model B High Profile optical scanner
	  • Memory Card (PCMCIA, 128Kb)
	  • AVOS ballot box
	Paper: AccuVote-OS CC
	FW: AccuVote-OS CC (2.0)
	HW: AccuVote-OS CC Model B High Profile optical scanner
	  • Memory Card (PCMCIA, 128Kb)
	  • AccuFeed Model A
	Paper: AccuVote-OSX
	FW: AccuVote-OSX (1.2)
	HW: AccuVote-OSX Model A optical scanner
	  • Memory Card (PCMCIA, 128Mb)
	  • AVOSX ballot box
	Paper: PhotoScribe 960
	  • SW: Premier Central Scan (PCS 2.2)
	DRE: AutoMARK
	HW: AutoMARK Model A300 ballot marker
	SW: AIMS 1.3
	Other
	HW: Voter Card Encoder
	ExpressPoll 5000 (FW: CardWriter 1.1)
	Manuals as per "d. Test Variables"
	Test Location: iBeta, Aurora, CO (Lab 25)
		• Memory Card (PCMCIA, 128Kb)
		  • AVOS ballot box
		Paper: AccuVote-OSX
		FW: Same as PRI01
		HW: AccuVote-OSX Model A optical scanner
		  • Memory Card (PCMCIA, 128Mb)
		  • AVOSX ballot box
		DRE: AutoMARK
		HW: AutoMARK Model A300 ballot marker
		SW: AIMS 1.3
		Other manuals as per "d. Test Variables"
		Test Location: iBeta, Aurora, CO (Lab 25)

Pre-requisites and preparation for execution of the test case.	Complete the prerequisites;
	  • Record the testers & date
	  • System has been set up as identified in the user manual(s)
	  • Gather any necessary materials or manuals.
	  • Ensure customization of the test case template is complete
	  • Use a Supervisory level access user and password for GEMS
	  • Use a Supervisory level access user and password for PCS
	  • Use Supervisory level access cards for AccuVote-TS/OSX/OS CC
	  • Use a Supervisory level access password for AccuVote-OS
	  • Use a Supervisory level access password for AutoMARK
	  • Use Supervisory level access cards for ExpressPoll 4000
	
	Test Method Validation: Technical review conducted by G. Audette; Approved 2/11/09. for validation of test method as defined in ISO/IEC 17025 clause 5.4.5.
		Complete the prerequisites;
		  • Record the testers & date
		  • System has been set up as identified in the user manual(s)
		  • Gather any necessary materials or manuals.
		  • Ensure customization of the test case template is complete
		  • Use a Supervisory level access user and password for GEMS
		  • Use Supervisory level access cards for AccuVote-TS/OSX
		  • Use a Supervisory level access password for AccuVote-OS
		  • Use a Supervisory level access password for AutoMARK
		
		Test Method Validation: Technical review conducted by G. Audette; Approved 2/11/09. for validation of test method as defined in ISO/IEC 17025 clause 5.4.5.

Getting Started Checks	Check the voting system to :
	  • Verify the test environment and system configuration is documented in the PCA Configuration and vendor described configuration.
	  • Validate installation of a witnessed build
	Testers understand that no change shall occur to the test environment without documentation in the test record and the authorization of the project
		Same as PRI01

Method Detail	Primary Election 01	Primary Election 02
	manager.	
Documentation of Test Data & Test Results	Test Data: • Record all programmed & observed election, ballot & vote data fields and field contents on the corresponding tabs to provide a method to repeat the test • Preserve all tabs for each instance the test is run. Test Results: • Enter Accept/Reject on the Test Steps • In Comments enter any deviations, discrepancies, or notable observations • Log discrepancies on the Discrepancy Report and insert the number in the Comments	Same as PRI01
Pre-vote: Ballot Preparation procedures verifications	Ballot Prep: • An election database can be accurately/securely defined & formatted. • A ballot (candidates & propositions) can be accurately/securely defined & generated. • Election media can be accurately/securely programmed & installed • The user manuals are sufficiently detailed for preparation of a General Election ballot as per "d. Test Variables"	Same as PRI01
Pre-vote: Ballot Preparation Security	Ballot Prep: • Security access controls limit or detect access to critical systems and the loss of system integrity, availability, confidentiality & accountability • Functions are only executable in the intended manner, order & under intended conditions • Prevents execution of functions if preconditions weren't met • Implemented restrictions on controlled functions • Documentation of mandatory administrative procedures. COTS: • Authentication is configured on the local terminal & external connection devices, • Operating systems are enabled for all session & connection openings, & closings, all process executions & terminations & for the alteration or detection of any memory or file object • Configure the system to only execute intended & needed processes during the execution election software. Processes are halted until termination of critical system processes (such as audit).	Same as PRI01
Readiness Testing and Poll Verification	Voting system is ready for the election: • Status & data reports are generated • The election is correctly installed • The voting system functions correctly • Test data is segregated from voting data, with no residual effect The polling place voting system functions properly including a formal record of: • Election, polling place, voting system & ballot format identification • Zero count report • A list of all ballot fields	Same as PRI01

Method Detail	Primary Election 01	Primary Election 02
	• Other information to confirm readiness & accommodate administrative reporting requirements Test confirmation that there are: • No hardware/software failures • The device is ready to be activated to accept votes	
Pre- vote: Opening the Polls Verification	Precinct Count: • The system is disabled until the internal test is successfully completed. Paper based: • Means to verify ballot marking devices are properly prepared & ready for use • Activating & verifying the ballot counting device is correctly activated & functioning • Identification of any failures & corrective action • Test acceptability of approved (135 g/m2 paper, marked with any standard pen or pencil) and non-approved writing devices (bleed-through, red, orange, or yellow inks which are highly reflective or transparent to colors) DRE • Security seal, password, or data code recognition capability preventing inadvertent or unauthorized poll opening • Means to enforce the proper sequence of steps to open the polls • Means to verify correct activation • Identification of any failures & corrective action	Same as PRI01
Voting: Ballot Activation and Casting Verifications	2 Page Ballot Protects secrecy of ballot/vote • Records selection/non-selection for each contest Paper-based: • Allow voter to identify & mark candidates • Make one selection to vote for one party in a primary election • Mark 135 g/m2 paper ballots with approved standard pen or pencil • Allow placement of voted ballots into a precinct ballot counter or secure receptacle • Gives feedback & an opportunity to correct, before the ballot is counted (blank/under/overvotes) DRE: • Voter can make selections based on ballot programming & indicate selection, cancellation, & non-selection (blanks/undervotes) • Alert overvotes; permit review & change before casting • Alert undervotes; permit review & change before casting • Alert blank voted office; permit review & change before casting • Alert selection's complete; prompt confirmation as casting is irrevocable, • Alert successful/unsuccessful storage of cast ballot; give instruction to resolve unsuccessful casting • Prevent modification of vote & access until the polls close • Increment the ballot counter Fleeing voters (cast, canceled):	Protects secrecy of ballot/vote • Records selection/non-selection for each contest • When the voter selects a Yes or No response to the recall proposal, that voter will be allowed to cast a vote for a candidate in the recall linked office. An under/overvote will not allow a vote in the second contest to be counted. Paper-based: • Allow voter to identify & mark candidates • Mark 135 g/m2 paper ballots with approved standard pen or pencil • Allow placement of voted ballots into a precinct ballot counter or secure receptacle • Gives feedback & an opportunity to correct, before the ballot is counted (blank/under/overvotes) DRE: • Voter can make selections based on ballot programming & indicate selection, cancellation, & non-selection (blanks/undervotes) • Alert overvotes; permit review & change before casting • Alert undervotes; permit review & change before casting • Alert blank voted office; permit review & change before casting • Alert selection's complete; prompt confirmation as casting is irrevocable, • Alert successful/unsuccessful storage of cast ballot; give instruction to resolve unsuccessful casting

Method Detail	Primary Election 01	Primary Election 02
	• with selection(s) made • blank ballot Absentee Voting	• Prevent modification of vote & access until the polls close • Increment the ballot counter Fleeing voters (cast, canceled): • with selection(s) made • blank ballot Allows to vote for Registered Write-ins
Voting: Voting System Integrity, System Audit, Errors & Status Indicators	The system audit provides a time stamped, always available, report of normal/abnormal events that can't be turned off when the system is in operating mode. Status message are part of the real time audit record. • Critical status messages requiring operator intervention shall use clear indicators or text Error messages are: • Are generated, stored & reported as they occur • Errors requiring intervention by the voter or poll worker clearly display issues & action instructions in easily understood text language or with indicators • The text for any numeric codes is contained in the error or affixed to the inside of the voting system • Incorrect responses will not lead to irreversible errors. • Nested conditions are corrected in the sequence to restore the system to the state before the error occurred	Same as PRI01
Post-vote: Closing the Polls	Once the polls are closed the precinct count voting system • Prevents further casting of ballots or reopening of the polls • Internally tests and verifies that the closing procedures has been followed and the device status is normal • Visibly displays the status • Produces a test record that verifies the sequence of events and indicates the extraction of vote data is activated	Same as PRI01
Post-vote: Central Count	Vote Consolidation: Consolidated reported votes match predicted votes from polling places, & optionally other sources (absentee) Reports include: • Geographic reports of votes; each contest by precinct & other jurisdictional levels • Printed reports of ballots counted by tabulator, with votes, blank/undervotes/overvotes • Report of system audit information printed or in electronic memory • Report identifying overvotes • Report identifying blank voted offices • Prevent data from being altered or destroyed by report generation, transmission over telecommunication lines or extraction from portable media • Permit extraction & consolidate votes from programmable memory services or data storage medium • Consolidate the votes from multiple voting systems into a single polling place report DRE:	Same as PRI01

Method Detail	Primary Election 01	Primary Election 02
	• Electronic ballot images of votes cast by each voter, extracted from a separate process & storage location, is reported in human readable form Paper Based: • Test acceptability of approved (135 g/m2 paper ballots with approved standard pen or pencil) and non-approved writing devices (bleed-through, red, orange, or yellow inks which are highly reflective or transparent to colors)	
Post-vote: Security	The central count: • Security access controls limit or detect access to critical systems and the loss of system integrity, availability, confidentiality and accountability • Functions are only executable in the intended manner, order and under the intended conditions • Prevented execution of functions if preconditions were not met • Implemented restrictions on controlled functions • Provided documentation of mandatory administrative procedures. • Data on the Memory Cards are encrypted. • Memory Card can only be consolidated once • Interruption of power during consolidation requires consolidation of pervious memory devices. • Audit logs reflect all activities during post vote COTS systems: • Authentication is configured on the local terminal and external connection devices, • Operating systems are enabled for all session and connection openings, and closings, all process executions and terminations and for the alteration or detection of any memory or file object • Configure the system to only execute the intended and necessary processes during the execution of the election software. Election software process are halted until the termination of any critical system process, such as system audit.	Same as PRI01: • No PCS
Post-vote: System Audit	The system audit provides a central count time stamped, always available, report of normal and abnormal events that cannot be turned off when the system is in operating mode. Status message are part of the real time audit record.	Same as PRI01
Expected Results are observed	Review the test result against the expected result: • Accept: the expected result is observed • Reject: the expected result of the test case is not observed • Not Testable (NT): rejection of a previous test step prevents execution of this step, or tested in another TC. • Not Applicable (NA): not applicable to test scope	Same as PRI01
Record observations and all input/outputs for each election;	All inputs, outputs, observations, deviations and any other information impacting the integrity of the test results will be recorded in the test case. • Any failure against the requirements of the EAC guidelines will mean the failure of the system. and shall be reported as such. • Failures will be reported to the vendor as Defect Issues in the Discrepancy	Same as PRI01

Method Detail	Primary Election 01	Primary Election 02
	Report. • The vendor shall have the opportunity to cure all discrepancies prior to issuance of the Certification Report. • If cures are submitted the applicable test will be rerun. Complete information about the rerun test will be preserved in the test case. The cure and results of the retest will be noted in the - Discrepancy Report and submitted as an appendix of the Certification Report. • Operations which do not fail the requirements but could be deemed defects or inconsistent with standard software practices or election practices will be logged as Informational Issues on the Discrepancy Report. It is the vendor's option to address these issues. Open items will be identified in the report.	

7.2 Environmental Test Method

Method Detail	Environmental Test Method
Test Case Name	Environmental Test
Scope - identifies the type of test	Execution and provision of test results identified in the *VSS 2002* hardware operating and non-operating environmental tests. This set of hardware environmental test cases is outside the scope of iBeta's VSTL accreditation. It is performed by: Criterion Laboratories iBeta coordinates and oversees subcontractor testing. iBeta shall review the test records, results and reports to confirm testing was performed under an appropriate mode as a voting system and to determine acceptance or rejection of some or all testing.
Test Objective	Validation of the polling place hardware to meet the Operating Environmental test standards of the EAC VSS.
Test Variables	Tests shall be conducted incompliance with the identified standard: Electrostatic disruption - IEC 61000-4-2 (1995-01).
A description of the voting system type and the operational environment	TSX Model A (Sharp DG11 LCD, Media Q graphics chip, without AVPM upgrade) TSX Model A (Sharp DG11 LCD, Media Q graphics chip, with AVPM upgrade) TSX Model C (Sharp LGN2 LCD, Media Q graphics chip) TSX Model D (Sharp LGN2A LCD, Silicon Motion graphics chip) OSX Ballot Box, Rev 4
VSS 2002 vol. 1	3.2.2 thru 3.2.2.14, 3.4.8, Interpretation 2007-05
VSS 2002 vol. 2	4.6.1.5 thru 4.7.1 & 4.8
Hardware, Software voting system configuration and test location	Test Location: Criterion Labs, Rollinsville CO • iBeta provides the test labs with the environmental hardware test case outlining methods, instructions to document the configuration, test environment, lab accreditations, tester qualifications, and operational status check performance. • iBeta personnel execute the operational status checks and operate the equipment as a voting system during the EMI/EMC test execution.
Pre-requisites and preparation for execution of the test case.	Complete the prerequisites; - Validation and documentation of the subcontractor test labs' A2LA or NVLAP accreditation in the specific test method identified in the Test Variables - Record the testers & date - System has been set up as identified in the user manual - Gather any necessary materials or manuals. - Ensure customization of the test case template is complete The iBeta approved Operational Status Check script is provided that includes: - Checking the operation of all buttons, switches and lights - Opening the polls & running a zero totals report - Checking appropriate error conditions for correct prompts or responses. (Error conditions will depend upon the type of equipment being tested.) - Accessibility features are operational. - Power off and on with no loss of function. - Close the polls and print all reports. (Totals & Audit Logs) Test Method Validation: Technical review conducted by G. Audette; Approved 2/11/09. for validation of test method as defined in ISO/IEC 17025 clause 5.4.5.
Getting Started Checks	Check the voting system to: - Verify the test environment and system configuration is documented in the PCA Configuration and matches the vendor described configuration. - Validate installation of the Trusted Build - Testers understand that no change shall occur to the test environment without documentation in the test record and the authorization of the project manager. - Confirm the tester understands the recording requirements of the iBeta test case. - Operational status check procedures is available and successfully run. - An automated script to loop system operation for use during the EMC operational tests exercises all necessary functionality.
Documentation of Test Data & Test Results	Test Results: - Enter Accept/Reject on the Test Steps - In Comments enter any deviations, discrepancies, or notable observations - Log discrepancies on the Discrepancy Report and insert the number in the Comments
Standard	Follow test method in the identified standard and Interpretation 2007-05

Method Detail	Environmental Test Method
Environmental Tests	
Expected Results are observed	Review the test result against the expected result: • Pass: meets the requirements • Fail: does not meet the requirements; document the failure in the comments and in the PCA/FCA Discrepancy Sheet • Not Testable (NT): not testable; provide a reason in the comments
Record observations and all input/outputs for each election;	All test results will be recorded in the test case. - Any failure against the requirements will mean the failure of the system and shall be reported as such. - Failures will be reported to the vendor as Defect Issues in the Discrepancy Report. - The vendor shall have the opportunity to cure all discrepancies prior to issuance of the Certification Report. - If cures are submitted the applicable test will be rerun. Complete information about the rerun test will be preserved in the test case. The cure and results of the retest will be noted in the - Discrepancy Report and submitted as an appendix of the Certification Report. - Operations which do not fail the requirements but could be deemed defects or inconsistent with standard software practices or election practices will be logged as Informational Issues on the Discrepancy Report. It is the vendor's option to address these issues. Open items will be identified in the report.

7.3 Characteristics (Recovery, Accessibility, Usability & Maintainability) Test Method

Method Detail	Characteristics
Test Case Name	Characteristics (Recovery, Accessibility, Usability & Maintainability)
Scope - identifies the type of test	Accessibility, usability and maintainability are characteristics of voting systems. • Accessible approach is applicable to DREs, Precinct Count Optical Scanners, and Electronic Ballot Markers (EBMs). • Audio and non-manual vote input methods are applicable to DREs • Maintainability is applicable to all voting systems These characteristics are performed as a single combined functional test. Validation of the integration of security and accuracy functions of the usability and accessibility features are tested in the system level tests.
Test Objective	The objective of characteristics testing is to verify the accessibility, usability and maintainability requirements of the guidelines and HAVA are met.
Test Variables: Voting Variations (as supported by the voting system)	An audio/visual straight party ballot with multi-lingual capabilities will be used. • One contest shall have a write-in vote. • One contest shall have more candidates or text than can be displayed on the screen. • Visual access to the ballot display/controls shall be restricted • The time out feature on the TSX and TS-R6 will be included in the ballot (vol 1 2.2.7.1.g).
A description of the voting system type and the operational environment	Testing of the Premier Election Solutions ASSURE 1.2 voting system shall include: Same as GEN01 for the AccuVote-TS R6, AccuVote-TSX, AccuVote-OS, AccuVote-OSX, and Premier Central Scan using PhotoScribe PS900 iM2 English and multilingual votes (visual, audio and paper ballots) cast with audio and non-manual inputs: Audio, non-manual input, and visual ballots Accessibility & Maintenance • DRE: AccuVote-TS R6 • DRE: AccuVote-TSX • EBM: AutoMARK Facility Accessibility only & Maintenance • Paper: AccuVote-OS • Paper: AccuVote-OSX Maintenance only • Paper: Premier Central Scan using PhotoScribe PS900 iM2
VSS 2002 vol. 1	2.2.7.1.a thru g, 2.2.7.2.a thru i, 2.4.3.1.a & e, 2.2.5.2.1 f.& g, 3.4.1 thru 3.4.2, 3.4.4.1 a thru d, 3.4.4.2, 3.4.5 c, 3.4.9.a thru e HAVA 301a.3 & 4
VSS 2002 vol. 2	4.7.2, 6.5, 6.7

Hardware, Software voting system configuration and	DRE: AccuVote-TSX
	  HW: AccuVote-TSX Model A DRE
	   • Memory Card (PCMCIA, 128Mb)
	   • Smartcards

Method Detail	Characteristics

test location	• UAID (Model A)
	• AVPM base w/printer (Model A)
	DRE: AccuVote-TSX
	 HW: AccuVote-TSX Model B DRE
	  • Memory Card (PCMCIA, 128Mb)
	  • Smartcards
	  • UAID (Model A)
	  • AVPM base w/printer (Model A)
	DRE: AccuVote-TSX
	 HW: AccuVote-TSX Model D DRE
	  • Memory Card (PCMCIA, 128Mb)
	  • Smartcards
	  • UAID (Model A)
	  • AVPM base w/printer (Model A)
	DRE: AccuVote-TS R6
	 HW: AccuVote-TS Model A DRE
	  • Memory Card (PCMCIA, 128Mb)
	  • Smartcards
	  • UAID (Model A)
	EBM: AutoMARK
	 HW: AutoMARK Model A300
	Paper: AccuVote-OS PC
	 HW: AccuVote-OS PC Model D Low Profile optical scanner
	  • Memory Card (PCMCIA, 128Kb)
	  • AVOS ballot box
	Paper: AccuVote-OSX
	 HW: AccuVote-OSX Model A optical scanner
	  • Memory Card (PCMCIA, 128Mb)
	  • AVOSX ballot box
	Paper: Premier Central Scan using PhotoScribe PS900 iM2

Pre-requisites and preparation for execution of the test case.	A test election is prepared and installed on the polling place device - During installation of the election confirm the operational readiness of the voting system. - System has been set up as identified in the user manual - Record the testers & date - Gather any necessary materials or manuals. - Ensure customization of the test case template is complete Test Method Validation: Technical review conducted by G. Audette; Approved 2/20/09. for validation of test method as defined in ISO/IEC 17025 clause 5.4.5.
Getting Started Checks	Check the voting system to : - Verify the test environment and system configuration is documented in the PCA Configuration and matches the vendor described configuration. - Validate installation of the witnessed build - Testers understand that no change shall occur to the test environment without documentation in the test record and the authorization of the project manager.
Documentation of Test Data & Test Results	Test Data: - Record all programmed & observed election & ballot data fields and field contents on the corresponding tabs to provide a method to repeat the test - Preserve all tabs for each instance the test is run. Test Results: - Enter Accept/Reject on the Test Steps - In Comments enter any deviations, discrepancies, or notable observations - Log discrepancies on the Discrepancy Report and insert the number in the Comments
Polling Place Hardware & Recovery	Validations of operations in the voting mode: - Adjust or magnify the font - Power supply interruption without corruption of data - Power supply interruption provide the voter the capability to complete casting a ballot, allow for graceful shutdown without loss or degradation of the voting and audit data - Permit additional voting session after a voting system has reverted to backup power without loss or degradation of the voting and audit data - Telecommunications interruption without corruption of data - Three second response time
Accessibility-	The voting station provides

Method Detail	Characteristics
Common Standards	• Forward reach w/ no obstruction: max high reach 48 in, min low reach 15 in. • Forward reach over an obstruction with knee space below; maximum level forward reach: 25 in. • Forward reach w/ obstruction >20 inches deep: max high forward: 48 in; obstructions >20 and <25 inches: 44 in. • Position of operable control is determined with respect to a vertical plan 48 in. in length, centered on the operable control, and at the maximum protrusion of the product within the 48 in. length. • Where any operable controls = or > 10 in. behind the reference plane, height is > 15 and <54 from the floor. • Where any operable control is >10 in. and < 24 in. behind the reference plane, height is >15 and <46 in. from the floor. • Operable controls are not >24 in. behind the reference plane.
DRE Standards	DRE voting systems shall provide the capability to provide access to voters with a broad range of disabilities. - Voters are not required to bring their own assistive technology to a polling place
DRE Standards - Audio information and stimulus	Audio information: • Provides complete content of the ballot is communicated to the voter • Provides instruction to the voter in operation of the voting device • Provides instruction so that the voter has the same vote capabilities and options as those provided by the system to individuals who are not using audio technology • Enable the voter to review the voter's write-in input, edit that input and confirm that the edits meet the voter's intent • Enable the voter to request repetition of any information provided by the system • Supports the use of headphones that may be discarded after each use • Provide the audio signal through an industry standard connector for private listening using a 1/8 inch stereo headphone jack and support personal headsets • Provide a volume control with and adjustable amplification up to a maximum of 105dB • Volume automatically resets to the default for each voter
DRE Accessibility - Telephone handset	No telephone style handset is use to provide audio information to the voter
DRE Accessibility-Wireless	No wireless device is used to provide audio information to the voter
DRE Accessibility-Electronic image displays	Voters are permitted to: • Adjust the contract settings • Adjust color settings, when color is used • Adjust the size of the text so that the height of the capital letters varies over a range of 3 to 6.3 millimeters
DRE Accessibility-Touch-screen or contact sensitive controls	The input method uses mechanically operated controls or keys: • Tactilely discernible without activating the controls or keys • Operable with one hand and not require tight grasping, pinching or twisting of the wrist • Require a force <5 lbs (22.2N) to operate • Provide no repeat function
DRE Accessibility-Response time	If the system is set to require a response by a voter in a specific period of time alert the voter before this time period expires and allow the voter additional time to indicate that more time is needed
DRE Accessibility-Biometric measures	If the system uses biometric measures for primary voter authentication, verify there is a secondary means of voter identification. This is not applicable for ASSURE™ 1.2
Physical Characteristics	Physical Characteristics • The size of each voting machine is compatible with its intended use and the location at which the equipment is to be used. • Physical Characteristics • The weight of each voting machine should be compatible with its intended use and the location at which the equipment is to be used.
Transport, Storage, Materials, & Durability	Transport & Storage of Precinct Systems - A means to safely handle, transport, and install voting equipment is provided. - The voting system provides a protective enclosure to withstand: impact, shock and vibration loads associated with surface and air transportation; stacking loads associated with storage Durability - The voting system is designed to withstand normal use without deterioration and without excessive

Method Detail	Characteristics
	maintenance cost for a period of ten years. Materials -The voting system is designed and constructed so that the frequency of equipment malfunctions and maintenance requirements are reduced to the lowest level consistent with cost constraints. - TDP includes an approved parts lists
Maintainability	Maintainability- The voting system and maintenance documentation include the: - Presence of labels and the identification of test points - Provision of built-in test and diagnostic circuitry or physical indicators of condition - Presence of labels and alarms related to failures - Presence of features that allow non-technicians to perform routine maintenance tasks (such as update of the system database) An assessment of the system maintenance attributes to confirm maintainability at an acceptable level for: - Ease of detecting that equipment has failed by a non-technician - Low false alarm rates (i.e., indications of problems that do not exist) - Ease of access to components for replacement - Ease with which adjustment and alignment can be performed - Ease with which database updates can be performed by a non-technician - Adjust, align, tune or service components
Availability	Availability- The vendor specifies the typical system configuration to be used to assess availability, and any assumptions made with regard to any parameters that impact the MTTR. The factors include at a minimum: - Recommended number and locations of spare devices or components to be kept on hand for repair purposes during periods of system operation - Recommended number and locations of qualified maintenance personnel who need to be available to support repair calls during system operation - Organizational affiliation (i.e., jurisdiction, vendor) of qualified maintenance personnel
Human Engineering - Controls and Displays	Controls and displays: Controls and displays: - Controls used by the voter or equipment operator are conveniently located - Control designs are consistent with their functions - Instruction plates are provided as needed to avoid ambiguity or incorrect actuation - Displays are large enough to be readable by voters and operators without disabilities - Displays are consistent with the DRE Accessibility requirements (above) - Status displays meet the same requirements as data displays - Green, blue or white are used to indicate normal status - Amber is used to indicate warnings or marginal status - Red is used to indicate error conditions, equipment states that may result in damage, or hazards to personnel - Equipment that is not designed to halt under conditions of damage or hazard provide an audible alarm - Color coding shall be selected to ASSURE correct perception by voter and operators with color blindness - Color shall not be the only means to convey information, indicate an action, prompt a response or distinguish a visual element - Systems display shall not use flashing or blinking text objects or other elements having a flash or blink frequency >2Hz and < 55Hz
Expected Results are observed	Review the test result against the expected result: • Accept: the expected result is observed • Reject: the expected result of the test case is not observed • Not Testable (NT): rejection of a previous test step prevents execution of this step, or tested in another TC. • Not Applicable (NA): not applicable to test scope
Record observations and all input/outputs for each election;	All inputs, outputs, observations, deviations and any other information impacting the integrity of the test results will be recorded in the test case. - Any failure against the requirements of the EAC guidelines will mean the failure of the system. and shall be reported as such. - Failures will be reported to the vendor as Defect Issues in the Discrepancy Report. - The vendor shall have the opportunity to cure all discrepancies prior to issuance of the Certification Report. - If cures are submitted the applicable test will be rerun. Complete information about the rerun test will be preserved in the test case. The cure and results of the retest will be noted in the Discrepancy Report and submitted as an appendix of the Certification Report. - Operations which do not fail the requirements but could be deemed defects or inconsistent with standard software practices or election practices will be logged as Informational Issues on the Discrepancy Report. It is the vendor's option to address these issues. Open items will be identified in the report.

7.4 Data Accuracy (TSX only) and Volume Test Method

Method Detail	Data Accuracy and Volume Test Method	Volume Test Method
Test Case Name	Data Accuracy (AccuVote-TSX only) and Volume, Stress, Performance and Recovery Test 1 - Primary Election	Volume, Stress, Performance, and Recovery Test 2 - General Election
Scope - identifies the type of test	Data Accuracy testing validates the individual ballot positions in terms of a maximum error rate while processing a specified volume of data. Volume testing crosses into several areas of voting system testing and is included in the PCA TDP Document Review, the PCA Source Code Review, and in System Level Tests. A review of the vendor documentation will be completed to identify the documented limits, assess the historical election data, assess the testing conducted by the vendor, and assess the testing conducted by end users (jurisdictions) to establish test parameters that reasonably represent the expected limits that the voting system components will be subjected to in use.	Same as Test 1

Test Objective	The objective of the data accuracy test is to validate the ability to reliably capture, record, store consolidate and report a predicted total of ballot vote selections and the absence of vote selection for a minimum of 1,549,703 ballot positions without error.
	
	The objective of the Volume tests are to validate the ability to process, store and report data using the allowed maximum number of voter groups categories, voter groups per voter group category, precincts and ballot styles (cards) within an election.
	
	Volume:
	- Total number of ballots processed by each precinct shall reflect the:
	    Maximum number of active voting positions
	    Maximum number of ballot styles
	- Process more than the expected number of ballots/voters per precinct
	- Process more than the expected number of precincts
	- Process the maximum number of Voter Group Categories and Voter Groups per Category
	- Process the maximum number of candidates per race
	- Process the maximum number of Precincts
	- Process the maximum number of Card Styles and number of cards cast per machine
	- Process the maximum number of memory cards per Polling Vote Center
	
	Stress:
	- Test the system's response to transient overload conditions.
	    • Polling place devices shall be subjected to ballot processing at the high volume rates at which the equipment can be operated.
	    • Central counting systems shall be subjected to similar overloads including continuous processing through all readers simultaneously.
		The objective is to validate the ability to process, store and report data using the allowed maximum number of voter groups categories, voter groups per voter group category, precincts and ballot styles (cards) within an election.
		
		Volume:
		- Total number of ballots processed by each precinct shall reflect the:
		    Maximum number of active voting positions
		- Process more than the expected number of races and the number of candidates per race
		- Process more than the expected number of total candidates in an election
		- Process the maximum number of races per precinct
		
		Performance
		- Verify accuracy, processing rate, ballot format handling capability, and other performance attributes claimed by the vendor
		
		Error Recovery
		- Verify the ability of the system to recover from hardware and data errors.

Method Detail	Data Accuracy and Volume Test Method	Volume Test Method
	Performance - Verify accuracy, processing rate, ballot format handling capability, and other performance attributes claimed by the vendor Error Recovery - Verify the ability of the system to recover from hardware and data errors.	
Test Variables: Volume Stress Performance Recovery	Test Variables will be established to test the following: - EMS: Election definition and accumulation of election results - Election Day: OS-PC, OSAA, A100, A200, and A300, as used on election day (traditional vote center). - Early voting devices: TSX, TS-R6, AVPM, and OSX which operate a longer time period and a higher volume of precincts and ballots. - Absentee/Early voting devices: PCS and OS-CC which handle a much higher volume of precincts and ballots.	Test Variables will be established to test the following: - EMS: Election definition and accumulation of election results - Election Day: AVOS-PC and A100 as used on election day (traditional vote center). - Early voting devices: TSX, TS-R6, AVPM, and AVOSX - Absentee voting devices: PCS and OS-CC
A description of the voting system type and the operational environment	The ASSURE 1.2 GEMS Ballot Preparation includes: - ASSURE Security Manager (ASM) All testing will be conducted in an office environment to simulate election day, early voting, and absentee voting environments.	Same as Test 1
VSS 2002 vol. 1	2.2.5.2.2 Audit/Error messages 2.2.3.2.3 Audit/Status messages 2.2.3 Error Recovery 2.2.2 thru 2.2.2.2, 2.2.5, 3.2.1, 3.2.5.2, 3.4.3, and 3.4.5 (TSX Data Accuracy)	2.2.5.2.2 Audit/Error messages 2.2.3.2.3 Audit/Status messages 2.2.3 Error Recovery
VSS 2002 vol. 2	6.2.3 Volume (maximum number of ballot styles) A4.3.5 Volume (maximum and exceeding more than the maximum number of precincts) A4.3.5 Volume/Stress (Processing, storing and reporting data when overloading the number of precincts and ballot styles) A4.3.5 Performance/Recovery (Ballot format handling capability-graceful shut down and recovery without loss of data) A4.3.5 Performance/Recovery (Processing rates-graceful shut down and recovery without loss of data) 4.7.1.1, 4.7.3 thru 4.7.4.d.i, 6.1, 6.2.3 (TSX Data Accuracy)	6.2.3 Volume A4.3.5 Performance/Recovery (Ballot format handling capability-graceful shut down and recovery without loss of data) A4.3.5 Performance/Recovery (Processing rates-graceful shut down and recovery without loss of data)
Hardware, Software voting system configuration and test location	The ASSURE 1.2 Voting System consist of the following: - GEMS application - ASM application - AutoMARK AIMS - AccuVote-OS Models A, B, C, and D with Precinct Count and Central Count software - AccuFeed Model A - AccuVote-OSX Model A and software - AccuVote-TS R6 Models A and B with BallotStation software - OSAA Model A - AccuVote-TSX Models A, B, C, and D with BallotStation software - AVPM - PhotoScribe PS900iM2 and PS960 with PCS software - AutoMARK A100, A200, and A300 with VAT PAVR	Same as Test 1

Method Detail	Data Accuracy and Volume Test Method	Volume Test Method
	and PVR application All testing will be perform by iBeta LLC located at 3131 S. Vaughn Way, Aurora, CO 80014.	
Pre-requisites and preparation for execution of the test case.	- Ensure customization of the test case template is complete. - Validate the automatic vote generation tool for the AccuVote-TSX input votes as identified in the script. Record the detail of the validation in the Test Tool Validation Log (Premier tab). - Validate the automatic vote generation tool for the PCS input votes as identified in the script. Record the detail of the validation in the Test Tool Validation Log (Premier tab). Confirm error logs and audit reports are enabled. Test Method Validation: Technical review to be conducted for validation of test method as defined in ISO/IEC 17025 clause 5.4.5. -	Same as Test 1
Getting Started Checks	Check the voting system to : - Verify the test environment and system configuration is documented in the PCA Configuration and vendor described configuration. - Validate installation of the trusted build - Testers understand that no change shall occur to the test environment without documentation in the test record and the authorization of the project manager. - Initiate an Operational Status Check to confirm the correct function of the voting system prior to initiation of Accuracy testing. Record the start time.	Same as Test 1
Documentation of Test Data & Test Results	Test Data: - Record all programmed & observed election, ballot & vote data fields and field contents on the corresponding tabs to provide a method to repeat the test - Preserve all tabs for each instance the test is run. Test Results: - Enter Accept/Reject on the Test Steps - In Comments enter any deviations, discrepancies, or notable observations - Log discrepancies on the Discrepancy Report and insert the discrepancy number in the Comments field of Test Step.	Same as Test 1
Volume: Voting Systems Processing	Ballot Prep: Scenario 1) Primary Election Day (values may be adjusted based on historical elections and TDP limits review) -An election database can be accurately/securely defined & formatted. -Ballots (candidates & propositions) can be accurately defined & generated. - Check GEMS® reports for election set up Election media on A100, A200, and A300, PCS, AVOS, AVOSX, and DREs can be installed with a Primary Election with 51 races: 1-9 Jurisdiction wide with 9 parties and candidates ranging from 1 to 5 10-29 Non-Partisan (NP), 2 districts, 5 candidates each 30-39 Questions, NP, yes/no 40 NP, precinct rotation, jurisdiction wide, 5	Ballot Prep: Scenario 2) General Election Day (values may be adjusted based on historical elections and TDP limits review) -An election database can be accurately/securely defined & formatted. -Ballots (candidates & propositions) can be accurately defined & generated. - Check GEMS® reports for election set up Election media on A100 and AVOS can be installed with a General Election with 250 races: 1-90 Jurisdiction wide and candidates ranging from 1 to 5 91-150 Non-Partisan (NP), 2 districts, 2 candidates each 151-240 Questions, NP, yes/no 241-249 NP, no rotation, jurisdiction wide, 2 candidates

Method Detail	Data Accuracy and Volume Test Method	Volume Test Method
	candidates 41-50 NP, no rotation, jurisdiction wide, 2 candidates 51 NP, no rotation, jurisdiction wide, 20 candidates - If there are any system errors that cause the EMS ballot preparation applications to crash then verify the applications recover without any loss of data.	250 NP, precinct rotation, jurisdiction wide, 5 candidates Election media on the PCS, AVOSX, and DREs can be installed with a General Election with 1000 races: 1-90 Jurisdiction wide and candidates ranging from 1 to 5 91-600 Non-Partisan (NP), 2 districts, 2 candidates each 601-899 Questions, NP, yes/no 900 NP, precinct rotation, jurisdiction wide, 5 candidates 901-999 NP, no rotation, jurisdiction wide, 2 candidates 1000 NP, no rotation, jurisdiction wide, 200 candidates (DRE only) - If there are any system errors that cause the EMS ballot preparation applications to crash then verify the applications recover without any loss of data.
Accuracy: Error Rate	Errors are from any source while testing the specific processing function and its related equipment. ● **Reject:** 1 error before counting 26,997 consecutive ballot positions correctly or 2 errors in any number ● **Accept:** 1,549,703 (or more) consecutive ballot positions read correctly. If there's 1 error with > 26,997 ballot positions but < 1,549,703, continue testing another 1,576,701 consecutive ballot positions; or 3,126,404 with 1 error	Not applicable.
Volume	System response to processing more than the expected number of precincts and maximum number of ballot styles. Maximum limit or capacity is successfully processed without errors for the following: - Maximum number of voting positions per Ballot Style - Maximum number of Ballot Styles per election - Maximum number of Ballot Styles per election day voting component - Maximum number of Ballot Styles per Absentee/early voting component - Maximum number of Precincts per election - Maximum number of Precincts per election day voting component - Maximum number of Precincts per Absentee/early voting component - Maximum number of Ballots (Cards) per election - Maximum number of Ballots (Cards) per election day voting component - Maximum number of Ballots (Cards) per Absentee/early voting component - Capacity limit of the data storage devices When importing over the allowed precincts and/or ballot styles into the GEMS errors are generated	System response to processing more than the expected number of precincts and maximum number of ballot styles. Maximum limit or capacity is successfully processed without errors for the following: - Maximum number of races in an election - Maximum number of candidates per election - Maximum number of candidates per race (DREs only) - Maximum number of races per precinct When importing over the allowed precincts and/or ballot styles into the GEMS errors are generated
Stress	System responses to overloading conditions: - Maximum rate (limit) of ballot processing for election day voting components - Maximum rate (limit) of ballot processing for Absentee/Early Voting components - Maximum limit of interconnected voting components simultaneously processing ballots - Maximum limit of number of voting components	Not a test attribute.

Method Detail	Data Accuracy and Volume Test Method	Volume Test Method
	downloading results simultaneously to GEMS	
Performance	No system degradation (ballot format handling capability and processing rates): - When importing large amount of data into the GEMS - When installing an election onto any device - The system will not slow down throughout the testing to the point where it takes 10 times longer to complete a function	Same as Test 1
Error Recovery	In the event that functional testing causes error recovery to trigger, the voting system gracefully shuts down (no crash) and recovers from errors caused by overloading the number of precincts and ballots styles. - Ballot format handling capabilities and processing capabilities-graceful shut down and recover without loss of data - Critical Status Messages The error recovery requirement is addressed also through the source code review of VSS vol 1: 4.2.3.e.	Same as Test 1
Readiness Testing and Poll Verification	Voting system is ready for the election: - The election is correctly installed (Election ID, polling place name, precincts) - Test data (run 2 different precincts to validate the system is ready) is segregated from voting data, with no residual effect' Test confirmation that there are: - No hardware/software failures - The device is ready to be activated to accept votes (No Identification of any failures & corrective action)	Same as Test 1
Pre- vote: Opening the Polls Verification	Precinct Count/ Paper based: - Zero count report (to verify no votes are on the components prior to starting precinct, early, and absentee voting)	Same as Test 1
Voting: Ballot Activation and Casting Verifications	Protects secrecy of ballot/vote - The AVOS-PC is set to Voting mode. - The AVOS (both CC and PC), if there are any system errors that cause the AVOS to shut down then the AVOS shall recover without any loss of data.	Same as Test 1
Voting: Voting System Integrity, System Audit, Errors & Status Indicators	The system audit provides a time stamped, always available, report of normal/abnormal events found. Error messages are: - Are generated, stored & reported as they occur - Errors requiring intervention by the voter or poll worker clearly display issues & action instructions in easily understood text language or with indicators - Incorrect responses will not lead to irreversible errors.	Same as Test 1
Post-vote: Closing the Polls	Once the polls are closed the voting system, obtain: - Printed reports of ballots counted by tabulator - Reported votes match predicted votes from tabulator with votes and undervotes.	Same as Test 1
Post-vote: Central Count	Election Day with 17 AVOS PCs, A100, A200, and A300 casting 15,000 cards on 1 AVOS-PC and using 20 memory cards in a vote center. Ballot has 50 card styles, with 16 precincts. Early Voting with AVOSX, 5 TS-R6s, and 4TSXs with AVPMs (data accuracy requirement is achieved with 54,000 ballots cast on the TSXs for over 1,549,703 ballot positions). The AVOSX processes 1000 votes on 6000 ballot cards. The ballot has 1000 precincts with 10 voter groups per category. The TS-R6 and	Election Day with 1 AVOS PCs and A100 casting 1 ballot each with the maximum number of races, candidates, and races per precinct. Early Voting with AVOSX, TS-R6, and TSX with AVPM. The AVOSX, TS-R6, and TSX process 1 vote each with the maximum number of races, candidates, and races per precinct. Absentee Voting with 1 AVOS-CC and 1 PCS to process 1 vote each with the maximum number of

Method Detail	Data Accuracy and Volume Test Method	Volume Test Method
	TSX will use the Logic and Accuracy automation (1 % voted manually). Absentee Voting with 1 AVOS-CC with AccuFeed and 10 PCS's to process over 1 million ballot cards. The number of card styles (50 for AVOS-CC and 6000 PCS) is within the ballot design as is the 16 and 1000 precincts respectively. PCS test will be executed using preprinted Logic and Accuracy test decks for the initial scan on 10 units then processed from captured images. - Zero count report (to verify no votes are on the prior to starting voting) - If there are any system errors that cause any component to shut down or crash then the component shall recover without any loss of data. Vote Consolidation: GEMS consolidated reports match the predicted votes. Reports include: - Printed reports of ballots counted by tabulator, with votes and undervotes - Printer Summary Report (containing all precincts) - View and Print Precinct by Precinct Reports	races, candidates, and races per precinct. - Zero count report (to verify no votes are on the prior to starting voting) - If there are any system errors that cause any component to shut down or crash then the component shall recover without any loss of data. Vote Consolidation: GEMS consolidated reports match the predicted votes. Reports include: - Printed reports of ballots counted by tabulator, with votes and undervotes - Printer Summary Report (containing all precincts) - View and Print Precinct by Precinct Reports
Expected Results are observed	Review the test result against the expected result: • Accept: the expected result is observed • Reject: the expected result of the test case is not observed • Not Testable (NT): rejection of a previous test step prevents execution of this step, or tested in another TC. • Not Applicable (NA): not applicable to test scope	Same as Test 1
Record observations and all input/outputs for each election;	All inputs, outputs, observations, deviations and any other information impacting the integrity of the test results will be recorded in the test case. - Any failure against the requirements of the EAC guidelines will mean the failure of the system. and shall be reported as such. - Failures will be reported to the vendor as Defect Issues in the Discrepancy Report. - The vendor shall have the opportunity to cure all discrepancies prior to issuance of the Certification Report. - If cures are submitted the applicable test will be rerun. Complete information about the rerun test will be preserved in the test case. The cure and results of the retest will be noted in the - Discrepancy Report and submitted as an appendix of the Certification Report. - Operations which do not fail the requirements but could be deemed defects or inconsistent with standard software practices or election practices will be logged as Informational Issues on the Discrepancy Report. It is the vendor's option to address these issues. Open items will be identified in the report.	Same as Test 1

7.5 Security and Telephony/Cryptographic Test Methods

Method Detail	Security Test	Telephony & Cryptographic
Test Case Name	Security	Telephony & Cryptographic
Scope - identifies the type of test	Security testing crosses into several areas of voting system testing and thus must be tested at the integrated system level. System Level Tests are customized for the specific voting system to test the security elements incorporated into the pre-vote, voting and post voting functions. Further examination is performed in Telephony and Cryptographic Tests. A review of the security documentation addresses Access Controls, Physical Security and Software Security. The security test generally functions as a gap test for the system and devices where access controls, physical security and software security are not covered by the functional testing and exercise of the system.	Telephony and Cryptographic testing validates/verifies that transferring of data through any means of telephony is correct and secured. As applicable is also tests any wireless data transport. This test includes the telecom capabilities of GEMS, AVTS, AVTSX, AVOS-PC, and AVOSX to transmit ballot definition files, accumulated vote counts, scanned ballot votes, and voter information through a dial-up modem as well as a LAN-wired connection. The target systems and devices are tested in their broadest sense. For example the GEMS/AVOS-PC, the data transport is limited to a RS-232 type connection. However because this connection may occur via modem/POTS telecommunications, it is tested in the Telephony test case in the latter configuration. The telecommunications capabilities of the devices are • AVOS-PC -- RS-232/modem • AVOSX -- modem/RAS/IP • AVTS -- modem/RAS/IP • AVTSX -- modem/RAS/IP
Test Objective	The objective of security testing is to minimize the risk of accidents, inadvertent mistakes and errors; protect from intentional manipulation, fraud or malicious mischief;	The object of the Telephony and Cryptographic testing is to validate the VSS additional security and cryptographic requirements due to the transmission of results via telecommunications. The overall objective is to confirm the security of election results and ASSURE 1.2 data are not compromised due to transmission via the public networks.

Method Detail	Security Test	Telephony & Cryptographic
Test Variables: Voting Variations (as supported by the voting system)	In the System Level Functional tests of general and primary elections validate the security of the pre-vote, voting, and post voting functions of the voting system by test incorporating overflow conditions, boundaries, password configurations, negative testing, inputs to exercise errors and status messages, protection of the secrecy in the voting process and identification of fraudulent or erroneous changes. Including unauthorized changes to system capabilities for: - Defining ballot formats, - Casting and recording votes, - Calculating vote totals consistent with defined ballot formats, - Reporting vote totals, - Alteration of voting system audit trails, - Changing or preventing the recording of a vote, - Introducing data not cast by an authorized voter, - Changing calculated vote totals, - Preventing access to vote data, including individual votes and vote totals, to unauthorized individuals, and - Preventing access to voter identification data and data for votes cast by the voter such that an individual can determine the content of specific votes cast by the voter.	Premier ASSURE 1.2 has two modes of public telephony capability built in. Both modes use a modem for POTS to digital conversion. In most cases a full IP protocol stack is constructed across the public connection. In other cases, only a bidirectional serial communication occurs over the public portion of the network, and that connection is converted to IP in the central count location. For those systems tests will be conducted that shall include: Injection of delays Dropping and reordering packets Modified packets Duplicate transmissions Transmission interruption Telephone outages Cryptographic approved software Symmetric encryption Digital signature Verification of the installation of COTS software to mitigate security threats and that the COTS software has the capability to mitigate the specific security threats described in the VSS including integrity of data, confirmation of data received, detecting any threats, removing the threats, prevention of storing the threats, finding any existing threats and logging any threats processed.

Method Detail	Security Test	Telephony & Cryptographic
A description of the voting system type and the operational environment	The voting system types and operational environments are the same as General 1, 2, 3 and 4, and Primary 1 Test Cases. General 01 will incorporate security testing of the: - GEMS 1.21.2 ballot preparation, access controls, central count, reporting - AVOS-PC(D), AVOSX, AVTS(A) (early voting), AVTSX(D) with AVPM, Voter Access Cards - Voter Card Encoder - Digikey serial/ethernet converter - Key Card Tool Central Admin Card, and Supervisor Card(s) General 02a will incorporate security testing of the: - GEMS 1.21.2 as needed - PCS, ASM, Key Card Tool (PCS/ASM related security) - AVOS-CC(A), Automark(A100), PhotoScribe - AIMS 1.3 General 03 will incorporate security testing of the: - GEMS 1.21.2 as needed - ExpressPoll 5000 Primary 01 will incorporate security testing of the: - GEMS 1.21.2 as needed - ExpressPoll 4000 As necessary to test differences in hardware models that are significant to security testing, the following models may be tested in the corresponding test case setup. - AVOS-PC - C General 02a, B Primary 01, A Primary 02 - AVOS-CC - D General 04, - AVTS - B Primary 02 - AVTSX - C General 02, B - General 03, A - General 04 - Automark - A200 General 04, A300 General 03	The voting system types and operational environments are the same as General 1, 2, 3 and 4, and Primary 1 Test Cases. The apparatus is the same as defined in the Security Test Method with the following exceptions General 01, General 03, Primary 01 - includes a RAS in the central count location - includes LanForge, an extra computer connected to the central count location housing Nessus and WireShark network analysis tools. - and real or simulated telephone lines in precinct locations General 01 - AVOS-PC ballot definitions are downloaded by modem - AVOSX ballot definitions are downloaded by modem - AVTSX ballot definitions are downloaded by modem - AVOS-PC vote counts are collected by modem - AVOSX vote counts are collected by modem - AVTSX vote counts are collected by modem General 03 - AVTS ballot definitions are downloaded by modem - AVTS vote counts are collected by modem
VSS 2002 vol. 1	2.2.1, 2.2.4 thru 2.2.5.2.3, 6.2 thru 6.4	2.2.10, 5.1 thru 5.2.7, 6.2 thru 6.2.2, 6.5 thru 6.6.2.2
VSS 2002 vol. 2	6.4 thru 6.4.2	6.3 thru 6.4.2
Hardware, Software voting system configuration and test location	Same as the appropriate General or Primary Test Case	Same as the appropriate General of Primary Test Case Some tests may involve real or simulated connections to public telecommunications equipment.

Method Detail	Security Test	Telephony & Cryptographic
Pre-requisites and preparation for execution of the test case.	- GEMS, PCS, Key Card Tool, VC Programmer -- Configure Windows environments as described in the vendor documentation. Compare the configurations of these Windows environments (Server 2003 R2 SP2, XP Professional SP3) to determine which one has the least-hardened configuration. Perform security testing against the least hardened OS. - All vendor security-related discrepancies are closed - Configure other systems as described in the vendor documentation. - Document the system under test. - Document the devices and device configurations under test. Test Method Validation: Technical review conducted by G. Audette; Approved 3/2/09. for validation of test method as defined in ISO/IEC 17025 clause 5.4.5.	- GEMS, PCS, Key Card Tool, VC Programmer -- Configure Windows environments as described in the vendor documentation. Compare the configurations of these Windows environments (Server 2003 R2 SP2, XP Professional SP3) to determine which one has the least-hardened configuration. Perform security testing against the least hardened OS. - All vendor security-related discrepancies are closed - Configure other systems as described in the vendor documentation. - Document the system under test. - Document the devices and device configurations under test. Test Method Validation: Technical review conducted by G. Audette; Approved 2/12/09. for validation of test method as defined in ISO/IEC 17025 clause 5.4.5.
Getting Started Checks	Same as the General or Primary test associated with each configuration.	Same as the General or Primary test associated with each configuration. Perform all readiness testing over public telecommunications links as configured prior to start of testing. Binary images and hashes are taken prior to any connection to public networks.
Documentation of Test Data & Test Results	Same as General or Primary test case. Record security information in the Security test case.	Same as General or Primary test case, but record security related information in the Telephony test case.

Authorization	- Authorization privileges are not allowed to be exceeded and Administrator or Supervisor privileges are required to modify such authorization (v1:6.2.1)
	
	 - In Windows, access control limits user access to election-sensitive data such as voter PII, vote counts or reports.
	
	 - Voters are only allowed to vote and cast a single ballot.
	 - Fraudulent or unauthorized ballots are not counted
	
	 - Voting equipment acccess is limited to to the appropriate role. Keys, passwords or tokens limit access to critical system functions. (v1:6.2.1)
	    - Opening the polls,
	    - Closing the polls
	    - Authorizing voter access
		- attempts to bypass security protection systems as a non-administrator to lower the effective security of data transmitted over public networks. Attempt to spoof, tamper with keys or key material, break non-repudiation subsytems, turn off encryption systems, deny service, deny service from specific precincts, install/replace certificates with compromised private keys, add/modify CRL's to deny service (potentially from specific precincts) (v1:6.6.2.1)
		
		 - At least two election officials activate any processing of ballots that are transmitted over the public network (v1:6.6.1.c)

Method Detail	Security Test	Telephony & Cryptographic

Access	- Physical or logical access controls on voting equipment prevent unauthorized access. (v1:6.3.1.a)
	  - ports access is controlled
	  - validation of vendor supplied tamper-resistant seals
	  - access to critical system components such as the audit log are protected (v1:6.2.2)
	
	- Physical or logical access controls on ballot preparation, vote counting and reporting equipment (v1:6.2, v1:2.2.4.1.f, v1:6.5.5.c)
	  - test password and/or token access
	  - test additional 3-factor authentication techniques
	  - port access is controlled
	  - default passwords are changeable after initial login
	  - minimal password strength constraints are imposed by the vendor or settable by the jurisdiction
	  - audit logs cannot be modified
	
	- Computer-generated password keys are unpredictable and random (v1:6.2.2.e)
	
	- Access controls limit the capability of non-authorized users to install and run non-authorized software. (v1:2.2.5.3)
	
	- Interactive queries have no write-back access to any GEMS database (v1:6.5.6)
		- Cryptographic key and hashes have sufficient cryptographic strengths (v1:6.5.2, 6.5.3, 6.6.1.a) (SP800-57 or equivalent best practice documentation)
		- Transmitted data is protected with a digital signature (v1:6.6.1.b)
		- Dial-in systems are accessible only after authentication (v1:2.2.1.a)
		- distributed keys are protected (v1:2.2.1.a, v1:6.2.2) (SP800-57 or equivalent best practice documentation)

Method Detail	Security Test	Telephony & Cryptographic

Integrity	- Failure of a critical component such as the audit log halts further processing (v1:2.2.5.3)
	
	 - Checksums, CRCs or better integrity checks are utilized on transmitted data (v1:2.2.2.1.d)
	
	- Pre-conditions are verified prior to execution of critical processes or functions. (v1:2.2.1.d)
	
	 - Cast ballots and vote counts are protected from tampering (v1:6.3.1.a)
	
	 - Protection of systems against threats such as viruses, worms, trojan horses and logic bombs. (v1:6.4.2)
	
	 - Transmission of data ensures the receipt of valid vote records at the receiving station (v1:6.5.2)
	
	 - Unauthorized attempts to boot to an alternate device (v1:2.2.1, v1:2.2.5.3, v1:6.4.2)
	    - which could allow unauthorized access to audit and system logs in an undetectable manner
	    - as well as installation of unauthorized software
	
	 - Modification of the system and application audit log is prevented. (v1:2.2.1)
		- Systems detect and remove threats at the receiving end of a public network.
		 - Duplicate, modified or corrupted ballot definition records, vote count records, and as applicable vote records are rejected and the sender is informed and guided in handling the situation.
		 - Duplicates of packets in transmissions do not alter ballot definition or vote counts.
		 - All vote data transmitted over public networks is protected by a digital signature. (v1:6.6.1.b)
		 - All data transmitted over public networks is protected from modifications and errors at the application level (v1:6.5.2)
		 - All vote counts summaries of data transmitted over simulated or real public networks are correct at the receiving station

Availability	- Recover from non-catastrophic failure of a device (v1:2.2.3) -	- Failure of transmission capabilities for ballot definition files or vote count records does not cause a total loss of voting capabilities at the polling place. - Users are notified of successful or failed transmissions, and when unsuccessful, the user is provided with an action to perform.
Confidentiality	- Tested under access control and authorization	- Systems that transmit votes or vote counts prior to the close of polls utilize an encryption technique approved by the federal government (v1:6.5.3). - Verify through source code review after the voter chooses to cancel,print or cast the ballot erase the selections from the display and all other storage
System Log	- Verification of System Log Activity is performed to ensure: - Error activity provided by the system is complete (v1:2.2.4.1.f, v1:4.4.3)	- Transmission errors, and intrusion rejections are logged
Software Security	- Software security validation ensures that the election specific programming is inaccessible to unauthorized activation or control (v1:6.4.1.c) - Verification that separation of operating system firmware and election specific programming (v1:6.4.1.d)	- Systems that transmit votes over public networks are protected with an IDS system. (v1:6.5.3)

Method Detail	Security Test	Telephony & Cryptographic

Documentation	- All vendor documentation is reviewed to validate vendor access control policies pertaining to
	  - General, software and hardware access controls
	  - Communications
	  - Effective Password management
	  - Protection abilities of a particular operating system
	  - General characteristics of supervisory access privileges
	  - Segregation of duties
	  - Vendor's access privileges
	  - Access control measures
	  - Physical security measures
	  - Polling place security
	  - Central count location security
	  - Software security
	  - Software and firmware installation
	  - Protection against malicious software
	  - Telecommunications and data transmission
	  - Data integrity
	  - Data interception prevention
	  - Protection against external threats
	  - Use of protective software
	  - Monitoring and responding to external threats
	  - Shared operating environment
	  - Access to incomplete election returns and interactive queries
	  - Security for transmission of official data over public communications networks
	  - General security requirements for systems transmitting data over public networks
	  - Voting process security for casting individual ballots over a public telecommunications networks
	  - Documentation of mandatory security activities
	  - Any other relevant characteristics
		- All vendor documentation is reviewed to validate vendor access control policies pertaining to
		  - Communications
		  - Effective Password management
		  - Protection abilities of a particular operating system
		  - Telecommunications and data transmission
		  - Data integrity
		  - Data interception prevention
		  - Protection against external threats
		  - Use of protective software
		  - Monitoring and responding to external threats
		  - Shared operating environment
		  - Access to incomplete election returns and interactive queries
		  - Security for transmission of official data over public communications networks
		  - General security requirements for systems transmitting data over public networks
		  - Voting process security for casting individual ballots over a public telecommunications networks
		  - Documentation of mandatory security activities
		  - Capabilities to operate during interruption of telecommunications capabilities
		  - Public and jurisdictional control boundaries are documented
		  - Any other relevant characteristics

Expected Results are observed	Security Review Criteria: - Accept meets the guideline - Reject does not meet the guideline - NA the guideline does not apply	Security Review Criteria: - Accept meets the guideline - Reject does not meet the guideline - NA the guideline does not apply
Record observations and all input/outputs for each election;	All inputs, outputs, observations, deviations and any other information impacting the integrity of the test results will be recorded in the Security Review Test Case. A separate statement will be prepared addressing the results from the security perspective. It will provide the results of the testing and review required in vol. 1 section 7.	All inputs, outputs, observations, deviations and any other information impacting the integrity of the test results will be recorded in the Telephony & Cryptographic Test Case. A separate statement will be prepared addressing the results from the security perspective. It will provide the results of the testing and review required in vol. 1 section 7.

Appendix A - TDP Documents

Premier delivered a separate TDP for each product. The documents listed are delivered as part of the Premier ASSURE^{TM} 1.2 voting system and are the version numbers and dates of the documents used to complete this Test Plan.

Table A-1 Premier ASSURE^{TM} 1.2 Technical Data Package Documents

Document Title	Version	Date	Author
ABasic TDP			
ABasic 2.2 Build Process	6.0	02/12/08	Premier Election Solutions
ABasic 2.2 Build Process	7.1	08/29/08	Premier Election Solutions
AccuBasic 2.2 User's Guide	1.1	09/11/08	Premier Election Solutions
ABasic 2.2.4 Reports Guide	3.0	07/07/08	Premier Election Solutions
AccuVote-OS PC TDP			
AccuVote-OS Pollworker's Guide	8.0	09/29/07	Premier Election Solutions
AccuVote-OS Precinct Count 1.96 Build Process	4.0	02/12/08	Premier Election Solutions
AccuVote-OS Precinct Count 1.96 Build Process	4.1	08/29/08	Premier Election Solutions
FEC 2002 AccuVote-OS Precinct Count 1.96.11 TDP Introduction	1.0	07/08/08	Premier Election Solutions
FEC 2002 AccuVote-OS Precinct Count 1.96.11 TDP System Overview	1.0	07/08/08	Premier Election Solutions
FEC 2002 AccuVote-OS Precinct Count 1.96.11 TDP System Functionality	1.0	07/08/08	Premier Election Solutions
FEC 2002 AccuVote-OS Precinct Count 1.96.11 TDP System Hardware Specification	1.0	07/08/08	Premier Election Solutions
FEC 2002 AccuVote-OS Precinct Count 1.96.11 TDP Software Design and Specification	1.0	07/08/08	Premier Election Solutions
FEC 2002 AccuVote-OS Precinct Count 1.96.11 TDP System Security Specification	1.0	07/08/08	Premier Election Solutions
FEC 2002 AccuVote-OS Precinct Count 1.96.11 TDP System Test and Verification	1.0	07/08/08	Premier Election Solutions
FEC 2002 AccuVote-OS Precinct Count 1.96.11 TDP System Operations Procedures	1.0	07/08/08	Premier Election Solutions
FEC 2002 AccuVote-OS Precinct Count 1.96.11 TDP System Maintenance	1.0	07/08/08	Premier Election Solutions
FEC 2002 AccuVote-OS Precinct Count 1.96.11 TDP Personnel Deployment and Training Requirements	1.0	07/08/08	Premier Election Solutions
FEC 2002 AccuVote-OS Precinct Count 1.96.11 TDP Configuration Management	1.0	07/08/08	Premier Election Solutions
FEC 2002 AccuVote-OS Precinct Count 1.96.11 TDP Quality Assurance Program	1.0	07/08/08	Premier Election Solutions
FEC 2002 AccuVote-OS Precinct Count 1.96.11 TDP System Change Notes	1.0	07/08/08	Premier Election Solutions
FEC 2002 AccuVote-OS Precinct Count 1.96.11 TDP Telecommunications	1.0	07/08/08	Premier Election Solutions
FEC 2002 AccuVote-OS Precinct Count 1.96.11 TDP Appendix A: Software Specifications	1.0	07/08/08	Premier Election Solutions
FEC 2002 AccuVote-OS Precinct Count 1.96.11 TDP Appendix B: Program Structure and Flow	1.0	07/08/08	Premier Election Solutions
FEC 2002 AccuVote-OS Precinct Count 1.96.11 TDP Appendix C: Data Organization and Flow	1.0	07/08/08	Premier Election Solutions
FEC 2002 AccuVote-OS Precinct Count 1.96.11 TDP Appendix G: System and Data Integrity	1.0	07/08/08	Premier Election Solutions
FEC 2002 AccuVote-OS Precinct Count 1.96.11 TDP Appendix H: Performance Metrics	1.0	07/08/08	Premier Election Solutions
AccuVote-OS Precinct Count 1.96.11 User's Guide	1.0	07/07/08	Premier Election Solutions
AccuVote-OS Precinct Count Download Message Format 1.0	1.1	08/20/07	Premier Election Solutions
AccuVote-OS Precinct Count Election Data Format 1.0	1.1	08/20/07	Premier Election Solutions
AccuVote-OS Precinct Count Upload Message Format 1.0	1.1	08/20/07	Premier Election Solutions
FEC 2002 AccuVote-OS TDP Introduction	4.0	02/16/08	Premier Election Solutions
FEC 2002 AccuVote-OS TDP System Overview	2.1	10/04/07	Premier Election Solutions

FEC 2002 AccuVote-OS TDP System Functionality Description	2.1	10/04/07	Premier Election Solutions
FEC 2002 AccuVote-OS TDP System Hardware Specifications	2.1	10/04/07	Premier Election Solutions
FEC 2002 AccuVote-OS TDP System Security Specifications	2.1	10/04/07	Premier Election Solutions
FEC 2002 AccuVote-OS TDP System Test and Verification Specifications	2.1	10/04/07	Premier Election Solutions
FEC 2002 AccuVote-OS TDP System Maintenance Procedures	2.1	10/04/07	Premier Election Solutions
FEC 2002 AccuVote-OS TDP Personnel Deployment and Training Requirements	2.1	10/04/07	Premier Election Solutions
FEC 2002 AccuVote-OS TDP Configuration Management Plan	3.0	10/04/07	Premier Election Solutions
FEC 2002 AccuVote-OS TDP Quality Assurance Program	2.1	10/04/07	Premier Election Solutions
FEC 2002 AccuVote-OS TDP System Change Notes	4.0	02/16/08	Premier Election Solutions
FEC 2002 AccuVote-OS Precinct Count 1.96 TDP Telecommunications	1.1	10/04/07	Premier Election Solutions
FEC 2002 AccuVote-OS TDP Appendix A: Hardware Specifications	2.1	10/04/07	Premier Election Solutions
FEC 2002 AccuVote- OS TDP Appendix D: Materials Specifications	1.2	10/04/07	Premier Election Solutions
FEC 2002 AccuVote-OS TDP Appendix J: Ballot Processing	2.1	10/04/07	Premier Election Solutions
FEC 2002 AccuVote-OS TDP Appendix L: Administrative Test Plans	2.1	10/04/07	Premier Election Solutions
FECVSS 2002 Trace to Vendor Testing and TDP	N/A	N/A	Premier Election Solutions
Configuration Management	7.1	09/02/08	Premier Election Solutions
GEMS AccuVote-OS Precinct Count Protocol 1.0	1.1	08/20/07	Premier Election Solutions
AccuVote-OS CC TDP			
AccuFeed Hardware Guide	5.0	09/29/07	Premier Election Solutions
AccuVote-OS Central Count 2.0 Build Process	3.1	08/29/08	Premier Election Solutions
AccuVote-OS Central Count 2.0.13 User's Guide	3.0	11/19/07	Premier Election Solutions
FEC 2002 AccuVote-OS TDP Introduction	4.0	02/16/08	Premier Election Solutions
FEC 2002 AccuVote-OS TDP System Overview	2.1	10/04/07	Premier Election Solutions
FEC 2002 AccuVote-OS TDP System Functionality Description	2.1	10/04/07	Premier Election Solutions
FEC 2002 AccuVote-OS TDP System Hardware Specifications	2.1	10/04/07	Premier Election Solutions
FEC 2002 AccuVote-OS TDP System Security Specifications	2.1	10/04/07	Premier Election Solutions
FEC 2002 AccuVote-OS TDP System Test and Verification Specifications	2.1	10/04/07	Premier Election Solutions
FEC 2002 AccuVote-OS TDP System Maintenance Procedures	2.1	10/04/07	Premier Election Solutions
FEC 2002 AccuVote-OS TDP Personnel Deployment and Training Requirements	2.1	10/04/07	Premier Election Solutions
FEC 2002 AccuVote-OS TDP Configuration Management Plan	3.0	10/04/07	Premier Election Solutions
FEC 2002 AccuVote-OS TDP Quality Assurance Program	2.1	10/04/07	Premier Election Solutions
FEC 2002 AccuVote-OS TDP System Change Notes	4.0	02/16/08	Premier Election Solutions
FEC 2002 AccuVote-OS Precinct Count 1.96 TDP Telecommunications	1.1	10/04/07	Premier Election Solutions
FEC 2002 AccuVote-OS TDP Appendix A: Hardware Specifications	2.1	10/04/07	Premier Election Solutions
FEC 2002 AccuVote- OS TDP Appendix D: Materials Specifications	1.2	10/04/07	Premier Election Solutions
FEC 2002 AccuVote-OS TDP Appendix J: Ballot Processing	2.1	10/04/07	Premier Election Solutions
FEC 2002 AccuVote-OS TDP Appendix L: Administrative Test Plans	2.1	10/04/07	Premier Election Solutions
FECVSS 2002 Trace to Vendor Testing and TDP	N/A	N/A	Premier Election Solutions
AccuVote-OS Hardware Guide	14.0	06/10/08	Premier Election Solutions
AccuVote-OSX TDP			
AccuVote-OSX 1.2 Build Process	3.0	09/26/08	Premier Election Solutions

FEC 2002 AccuVote-OSX 1.2.1 TDP Introduction	2.0	09/26/08	Premier Election Solutions
FEC 2002 AccuVote-OSX 1.2.1 TDP System Overview	1.1	09/25/08	Premier Election Solutions
FEC 2002 AccuVote-OSX 1.2.1 TDP System Functionality Description	2.0	09/25/08	Premier Election Solutions
FEC 2002 AccuVote-OSX 1.2.1 TDP System Hardware Specification	1.1	09/25/08	Premier Election Solutions
FEC 2002 AccuVote-OSX 1.2.1 TDP Software Design and Specification	2.0	09/25/08	Premier Election Solutions
FEC 2002 AccuVote-OSX 1.2.1 TDP System Security Specification	2.0	09/25/08	Premier Election Solutions
FEC 2002 AccuVote-OSX 1.2.1 TDP System Test and Verification Specification	1.1	09/25/08	Premier Election Solutions
FEC 2002 AccuVote-OSX 1.2.1 TDP System Operations Procedures	1.1	09/25/08	Premier Election Solutions
FEC 2002 AccuVote-OSX 1.2.1 TDP System Maintenance Procedures	1.1	09/25/08	Premier Election Solutions
FEC 2002 AccuVote-OSX 1.2.1 TDP Personnel Deployment and Training	1.1	09/25/08	Premier Election Solutions
FEC 2002 AccuVote-OSX 1.2.1 TDP Configuration Management Plan	2.0	09/26/08	Premier Election Solutions
FEC 2002 AccuVote-OSX 1.2.1 TDP Quality Assurance Program	1.1	09/25/08	Premier Election Solutions
FEC 2002 AccuVote-OSX 1.2.1 TDP System Change Notes	2.0	09/26/08	Premier Election Solutions
FEC 2002 AccuVote-OSX 1.2.1 TDP Telecommunications	1.1	09/25/08	Premier Election Solutions
FEC 2002 AccuVote-OSX 1.2.1 TDP Appendix A: Software Specifications	2.0	09/26/08	Premier Election Solutions
AccuVote-OSX 1.2.1 TDP Appendix B: Program Specifications	1.1	09/25/08	Premier Election Solutions
FEC 2002 AccuVote-OSX 1.2.1 TDP Appendix E: Redundant Storage Logic	1.1	09/25/08	Premier Election Solutions
FEC 2002 AccuVote-OSX 1.2.1 TDP Appendix H: System and Data Integrity	2.0	09/25/08	Premier Election Solutions
FEC 2002 AccuVote-OSX 1.2.1 TDP Appendix I: Performance Metrics	1.1	09/25/08	Premier Election Solutions
FEC 2002 AccuVote-OSX 1.2.1 TDP Appendix K: Administrative Test Plans	2.0	09/25/08	Premier Election Solutions
FECVSS 2002 Trace to Vendor Testing and TDP	N/A	N/A	Premier Election Solutions
AccuVote-OSX Election Data Format 1.0	1.1	09/03/08	Premier Election Solutions
AccuVote-OSX Hardware Guide	3.0	02/12/08	Premier Election Solutions
AccuVote-OSX Pollworker's Guide	4.0	02/14/08	Premier Election Solutions
AccuVote-OSX 1.2.1 System Administrator's Guide	1.0	06/24/08	Premier Election Solutions
AccuVote-OSX 1.2.1 User's Guide	3.0	02/06/08	Premier Election Solutions
Windows CE 5.0 Build Process	8.0	09/30/08	Premier Election Solutions
ASSURE 1.2 TDP			
Assure 1.2 System Overview	6.0	No date	Premier Election Solutions
ASSURE 1.2 Product Overview Guide	9.0	07/09/08	Premier Election Solutions
ASSURE 1.2 TDP Appendix F: Surface Specification Standard	2.2	10/02/08	Premier Election Solutions
ASSURE 1.2 TDP Appendix J: File Management	1.5	10/02/08	Premier Election Solutions
ASSURE 1.2 TDP Appendix J: File Management	1.5	10/02/08	Premier Election Solutions
ASSURE 1.2 TDP Appendix Q: System Acquisition	1.6	10/02/08	Premier Election Solutions
ASSURE 1.2 TDP Appendix X: System Initiation	1.0	10/02/08	Premier Election Solutions
ASSURE 1.2 TDP Introduction	12.0	10/02/08	Premier Election Solutions
Premier Election Solutions ASSURE™ 1.2 Matrix Rev 4.0	4.0	02/10/09	Premier Election Solutions
Course List	2.2	None	Premier Election Solutions
Diebold Election Systems- Help Desk Charter	1.0	10/05/04	Premier Election Solutions
Help Desk BridgeTrak Quick Reference	None	None	Premier Election Solutions
Help Desk - Business Work Flow	None	None	Premier Election Solutions
Premier's Client Security Policy	3.0	06/18/08	Premier Election Solutions
Premier's Windows Configuration Guide	4.0	09/10/08	Premier Election Solutions
Premier's Windows® Security Updates Policy and Procedures	2.0	06/13/08	Premier Election Solutions
QEPB0001 Certification Process	1.0	N/A	Premier Election Solutions

QMIMM002 EC Flow for Manufacturing	1.1	05/19/04	Premier Election Solutions
Product and Project Management	1.0	N/A	Premier Election Solutions
QSI0A019 Supplier Part Approval Process S/PAP	2.2	12/18/03	Premier Election Solutions
"Conformance-of-Ten" Part Evaluation	1.0	08/06/02	Premier Election Solutions
QSM00001 Quality Systems Manual	15.0	08/01/03	Premier Election Solutions
QSP00001 Management Responsibilities	7.1	08/04/09	Premier Election Solutions
QSP00023 Development & Manufacturing Standards	6.0	01/30/03	Premier Election Solutions
Product Appearance Standard	6.0	N/A	Premier Election Solutions
Quality Assurance Methodology	3.1	09/02/08	Premier Election Solutions
The SSL Protocol	3.0	09/02/04	Premier Election Solutions
Assure Security Manager TDP			
FEC 2002 ASM 1.2.1 TDP Introduction	1.0	06/23/08	Premier Election Solutions
FEC 2002 ASM 1.2.1 TDP System Overview	1.0	06/23/08	Premier Election Solutions
FEC 2002 ASM 1.2.1 TDP System Functionality Description	1.0	06/23/08	Premier Election Solutions
FEC 2002 ASM 1.2.1 TDP System Hardware Specification	1.0	06/23/08	Premier Election Solutions
FEC 2002 ASM 1.2.1 TDP Software Design and Specification	1.0	06/23/08	Premier Election Solutions
FEC 2002 ASM 1.2.1 TDP System Security Specification	1.0	06/23/08	Premier Election Solutions
FEC 2002 ASM 1.2.1 TDP System Test and Verification Specification	1.0	06/23/08	Premier Election Solutions
FEC 2002 ASM 1.2.1 TDP System Operations Procedures	1.0	06/23/08	Premier Election Solutions
FEC 2002 ASM 1.2.1 TDP System Maintenance Procedures	1.0	06/23/08	Premier Election Solutions
FEC 2002 ASM 1.2.1 TDP Personnel Deployment and Training Requirements	1.0	06/23/08	Premier Election Solutions
FEC 2002 ASM 1.2.1 TDP Configuration Management Plan	1.0	06/23/08	Premier Election Solutions
FEC 2002 ASM 1.2.1 TDP Quality Assurance Program	1.0	06/23/08	Premier Election Solutions
FEC 2002 ASM 1.2.1 TDP System Change Notes	1.0	06/23/08	Premier Election Solutions
FEC 2002 ASM 1.2.1 TDP Telecommunications	1.0	06/23/08	Premier Election Solutions
FEC 2002 ASM 1.2.1 TDP Appendix A: Software Specifications	1.0	06/23/08	Premier Election Solutions
ASM 1.2.1 TDP Appendix B: Program Specifications	1.0	06/23/08	Premier Election Solutions
FEC 2002 ASM 1.2.1 TDP Appendix G: System and Data Integrity	1.0	06/23/08	Premier Election Solutions
FEC 2002 ASM 1.2.1 TDP Appendix H: Performance Metrics	1.0	06/23/08	Premier Election Solutions
FEC 2002 ASM 1.2.1 TDP Appendix J: Administrative Test Plans	1.0	06/23/08	Premier Election Solutions
FECVSS 2002 Trace to Vendor Testing and TDP	None	None	Premier Election Solutions
ASSURE Security Manager Election Data Format 1.0	1.0	10/10/07	Premier Election Solutions
ASSURE Security Manager Smart Card Format 1.0	1.0	10/10/07	Premier Election Solutions
ASSURE Security Service 1.2 Build Procedure	2.1	08/29/08	Premier Election Solutions
ASSURE Security Manager 1.2.1 User's Guide	1.0	06/23/08	Premier Election Solutions
AutoMARK VAT TDP			
ATS Configuration Management Policy	3.0	12/01/08	Automark Technical Systems, Inc.
Corrective Action Control Log	2.0	N/A	Automark Technical Systems
DESIGN REVIEW ATTENDANCE SHEET	2.0	N/A	Automark Technical Systems
DESIGN REVIEW MINUTES	2.0	N/A	Automark Technical Systems
ATS DOCUMENT CHANGE ORDER	2.0	N/A	Automark Technical Systems
Document Change Control Form	2.0	N/A	Automark Technical Systems
ATS Employee Training Procedure	3.0	12/01/08	Automark Technical Systems
Engineering Change Order/Change Request Form	2.0	N/A	Automark Technical Systems
ATS Software and Hardware Release Process	4.0	12/01/08	Automark Technical Systems
System Bug Report Form	2.0	N/A	Automark Technical Systems

AutoMARK™ Ballot Scanning and Printing Specification	3.0	12/01/08	Automark Technical Systems
AutoMARK PREM Configuration Management Plan	4.0	12/01/08	Automark Technical Systems
AutoMARK Driver API Specification	3.0	12/01/08	Automark Technical Systems
AutoMARK™ Embedded Database Interface Specification	4.0	12/01/08	Automark Technical Systems
AutoMARK Graphical User Interface	4.0	12/01/08	Automark Technical Systems
Initial Software Installation Procedure	2.0	12/01/08	Automark Technical Systems
AutoMARK Operating Software (AMOS) Design Specifications	3.0	12/01/08	Automark Technical Systems
Personnel Deployment and Training Requirements	3.0	12/01/08	Automark Technical Systems
AutoMARK PREM Poll Workers Guide	7.0	02/09/08	Automark Technical Systems
AutoMARK Programming Specifications Details	3.0	12/01/08	Automark Technical Systems
ATS Quality System Procedures (QSP) Master List	3.0	12/01/08	Automark Technical Systems
ATS Quality System Master Audit Schedule	3.0	12/01/08	Automark Technical Systems
AutoMARK Rapid Application Development Methodology (RAD)	4.0	12/01/08	Automark Technical Systems
AutoMARK PREM VAT Release Notes	13.0	12/01/08	Automark Technical Systems
AutoMARKTM Requirements Trace Matrix	3.0	12/01/08	Automark Technical Systems
AutoMARK Software Design Specifications	3.0	12/01/08	Automark Technical Systems
AutoMARK Software Diagnostics Specification	3.0	12/01/08	Automark Technical Systems
Software Standards Specification	3.0	12/01/08	Automark Technical Systems
AutoMARK System Change Notes	72.0	12/01/08	Automark Technical Systems
AutoMARK System Functionality	3.0	12/01/08	Automark Technical Systems
AutoMark System Installation and Maintenance Guide	7.0	02/12/08	Automark Technical Systems
AutoMARK System Introduction	3.0	12/01/08	Automark Technical Systems
AutoMARK System Security Specifications	3.0	12/01/08	Automark Technical Systems
AutoMARK System Overview	6.0	12/01/08	Automark Technical Systems
AutoMark TDP Table of Contents	N/A	12/01/08	Automark Technical Systems
AutoMark Voter's Guide	6.0	02/09/08	Automark Technical Systems
AutoMARK System Hardware Specification	4.0	12/01/08	Automark Technical Systems
AutoMARK VAT Software and Firmware Compilation Instructions	9.0	02/03/09	Automark Technical Systems
Automark Technical Systems Integration & Testing Bug Report	2.0	N/A	Automark Technical Systems
Ballot Image Processing Specifications	4.0	12/01/08	Automark Technical Systems
AutoMARK Software Development	4.0	12/01/08	Automark Technical Systems
System Security Test Cases	3.0	12/01/08	Automark Technical

			Systems
System Security Test Procedure	3.0	12/01/08	Automark Technical Systems
AIMS TDP			
AIMS TDP Cover Page	N/A	N/A	Automark Technical Systems
AIMS TDP Table of Contents	N/A	12/01/08	Automark Technical Systems
AIMS Requirements Trace Matrix	4.0	12/01/08	Automark Technical Systems
AIMS Release Notes	8.0	12/01/08	Automark Technical Systems
AutoMARK Information Management System (AIMS) System Overview	3.0	12/01/08	Automark Technical Systems
AutoMARK Information Management System (AIMS) System Functionality	4.0	12/01/08	Automark Technical Systems
AIMS Hardware Specifications	3.0	12/01/08	Automark Technical Systems
AIMS Compact Flash Memory Card Design Specifications	3.0	12/01/08	Automark Technical Systems
AutoMARK Information Management System (AIMS) Programming Specifications Details	4.0	12/01/08	Automark Technical Systems
AutoMARK Information Management System (AIMS) Software Design Specifications	6.0	12/01/08	Automark Technical Systems
AIMS Election Official's Guide	12.0	02/21/08	Automark Technical Systems
AutoMARK Information Management System (AIMS) Operations Procedures	3.0	12/01/08	Automark Technical Systems
AutoMARK Information Management System (AIMS) System Security Specifications	3.0	12/01/08	Automark Technical Systems
AIMS Quality Assurance Policy & Procedures	4.0	12/01/08	Automark Technical Systems
AIMS Quality Assurance Test Cases	4.0	12/01/08	Automark Technical Systems
AIMS Quality Assurance Test Procedures	3.0	12/01/08	Automark Technical Systems
AIMS Configuration Management Plan	3.0	12/01/08	Automark Technical Systems
AIMS Personnel Deployment and Training Requirements	2.0	12/01/08	Automark Technical Systems
AIMS System Change Notes	25.0	12/01/08	Automark Technical Systems
AVPM TDP			
AccuView Printer Module Hardware Guide	6.0	02/11/08	Premier Election Solutions
AccuView Printer Module 3.0 Build Process	3.0	09/04/08	Premier Election Solutions
Updating AVPM Firmware	1.1	11/09/04	Premier Election Solutions
BallotStation TDP			
AV-OS to AV-TS Accumulation Product Specification	0.1	04/01/04	Premier Election Solutions
Ballot Station 4.7.3 TDP Appendix B: Program Specifications	1.1	09/26/08	Premier Election Solutions
Ballot Station Election Data Format 4.7	1.1	09/03/08	Premier Election Solutions
Ballot Station Smart Card Format 1.0	1.1	08/20/07	Premier Election Solutions
Ballot Station Smart Card Format 1.0	2.1	09/03/08	Premier Election Solutions
BallotStation 4.7 Build Process	4.0	09/26/08	Premier Election Solutions
FEC 2002 BallotStation 4.7.3 TDP Introduction	2.0	09/26/08	Premier Election Solutions
FEC 2002 BallotStation 4.7.3 TDP System Overview	1.1	09/26/08	Premier Election Solutions
FEC 2002 BallotStation 4.7.3 TDP System Functionality Description	2.0	09/26/08	Premier Election Solutions
FEC 2002 BallotStation 4.7.3 TDP System Hardware Specification	1.1	09/26/08	Premier Election Solutions
FEC 2002 BallotStation 4.7.3 TDP Software Design and Specification	2.0	09/26/08	Premier Election Solutions
FEC 2002 BallotStation 4.7.3 TDP System Security	2.0	09/26/08	Premier Election Solutions

Specification			
FEC 2002 BallotStation 4.7.3 TDP System Test and Verification Specification	1.1	09/26/08	Premier Election Solutions
FEC 2002 BallotStation 4.7.3 TDP System Operations Procedures	1.1	09/26/08	Premier Election Solutions
FEC 2002 BallotStation 4.7.3 TDP System Maintenance Procedures	2.0	09/26/08	Premier Election Solutions
FEC 2002 BallotStation 4.7.3 TDP Personnel Deployment and Training Requirements	1.1	09/26/08	Premier Election Solutions
FEC 2002 BallotStation 4.7.3 TDP Configuration Management Plan	2.0	09/26/08	Premier Election Solutions
FEC 2002 BallotStation 4.7.3 TDP Quality Assurance Program	1.1	09/26/08	Premier Election Solutions
FEC 2002 BallotStation 4.7.3 TDP System Change Notes	2.0	09/26/08	Premier Election Solutions
FEC 2002 BallotStation 4.7.3 TDP Telecommunications	1.1	09/26/08	Premier Election Solutions
FEC 2002 BallotStation 4.7.3 TDP Appendix A: Software Specifications	2.0	09/26/08	Premier Election Solutions
FEC 2002 BallotStation 4.7.3 TDP Appendix C: Data Organization and Flow	1.1	09/26/08	Premier Election Solutions
FEC 2002 BallotStation 4.7.3 TDP Appendix F: Redundant Storage Logic	1.1	09/26/08	Premier Election Solutions
FEC 2002 BallotStation 4.7.3 TDP Appendix I: Performance Metrics	1.1	09/26/08	Premier Election Solutions
FEC 2002 BallotStation 4.7.3 TDP Appendix J: System and Data Integrity	2.0	09/26/08	Premier Election Solutions
FEC 2002 BallotStation 4.7.3 TDP Appendix L: Administrative Test Plans	2.0	09/26/08	Premier Election Solutions
FECVSS 2002 Trace to Vendor Testing and TDP	N/A	N/A	Premier Election Solutions
BallotStation 4.7.3 System Administrator's Guide	1.0	06/25/08	Premier Election Solutions
BallotStation 4.7.3 User's Guide	2.0	07/09/08	Premier Election Solutions
GEMS AVServer BallotStation Download Message Format 1.0	2.0	09/24/08	Premier Election Solutions
GEMS AVServer BallotStation Upload Message Format 1.0	2.0	09/17/08	Premier Election Solutions
GEMS AVServer BallotStation Protocol 1.0	3.0	09/17/08	Premier Election Solutions
OSAA Hardware Guide	5.0	01/30/08	Premier Election Solutions
UAID Hardware Guide	2.1	08/22/07	Premier Election Solutions
Windows CE 3.0 Build Process	5.0	09/30/08	Premier Election Solutions
Windows CE 4.1 Build Process	5.0	09/30/08	Premier Election Solutions
ExpressPoll TDP			
Express Poll Administrator's Guide	1.2.0	03/05/07	Premier Election Solutions
Emulator and Resource Guide	2.0	01/18/07	Premier Election Solutions
Express Poll User's Guide	2.0	01/19/07	Premier Election Solutions
ExpressPoll 4000 EZRoster User's Guide	3.0	02/08/08	Premier Election Solutions
ExpressPoll 4000 EZRoster Pollworker's Guide	2.0	02/08/08	Premier Election Solutions
ExpressPoll 4000 EZRoster System Administrator's Guide	4.0	02/08/08	Premier Election Solutions
ExpressPoll 4000 EZRoster User's Guide	3.0	02/08/08	Premier Election Solutions
ExpressPoll Administrator's Guide for Version 2.0. and 2.1	3.0	02/08/08	Premier Election Solutions
ExpressPoll CardWriter 1.1 Build Process	9.0	02/19/09	Premier Election Solutions
FEC 2002 ExpressPoll CardWriter 1.1.6 TDP Introduction	3.0	02/19/08	Premier Election Solutions
FEC 2002 ExpressPoll CardWriter 1.1.6 TDP System Overview	1.1	01/31/08	Premier Election Solutions
FEC 2002 ExpressPoll CardWriter 1.1.6 TDP System Functionality Description	1.0	10/11/07	Premier Election Solutions
FEC 2002 ExpressPoll CardWriter 1.1.6 TDP System Hardware Specification	2.0	01/31/08	Premier Election Solutions
FEC 2002 ExpressPoll CardWriter 1.1.6 TDP Software Design and Specification	2.0	01/31/08	Premier Election Solutions
FEC 2002 ExpressPoll CardWriter 1.1.6 TDP System Security Specification	2.0	01/31/08	Premier Election Solutions
FEC 2002 ExpressPoll CardWriter 1.1.6 TDP System Test and Verification	1.1	01/31/08	Premier Election Solutions
FEC 2002 ExpressPoll CardWriter 1.1.6 TDP System Operations Procedures	1.1	01/31/08	Premier Election Solutions

FEC 2002 ExpressPoll CardWriter 1.1.6 TDP System Maintenance Procedures	2.0	01/31/08	Premier Election Solutions
FEC 2002 ExpressPoll CardWriter 1.1.6 TDP Personnel Deployment and Training	1.1	01/31/08	Premier Election Solutions
FEC 2002 ExpressPoll CardWriter 1.1.6 TDP Configuration Management Plan	2.0	01/31/08	Premier Election Solutions
FEC 2002 ExpressPoll CardWriter 1.1.6 TDP Quality Assurance Program	2.0	01/31/08	Premier Election Solutions
FEC 2002 ExpressPoll CardWriter 1.1.6 TDP System Change Notes	3.0	02/19/08	Premier Election Solutions
FEC 2002 ExpressPoll CardWriter 1.1.6 TDP Telecommunications	1.0	10/11/07	Premier Election Solutions
FEC 2002 ExpressPoll CardWriter 1.1.6 TDP Appendix A: Software Specifications	1.1	01/31/08	Premier Election Solutions
FEC 2002 ExpressPoll CardWriter 1.1.6 TDP Appendix B: Program Structure and	1.0	10/11/07	Premier Election Solutions
FEC 2002 ExpressPoll CardWriter 1.1.6 TDP Appendix C: Data Organization and	1.0	10/11/07	Premier Election Solutions
FEC 2002 ExpressPoll CardWriter 1.1.6 TDP Appendix F: Installation Procedures	1.0	10/11/07	Premier Election Solutions
FEC 2002 ExpressPoll CardWriter 1.1.6 TDP Appendix G: Performance Metrics	1.0	10/11/07	Premier Election Solutions
FEC 2002 ExpressPoll CardWriter 1.1.6 TDP Appendix H: System and Data Integrity	1.0	10/11/07	Premier Election Solutions
FEC 2002 ExpressPoll CardWriter 1.1.6 TDP Appendix K: Administrative Test Plans	1.0	10/11/07	Premier Election Solutions
FECVSS 2002 Trace to Vendor Testing and TDP	None	None	Premier Election Solutions
ExpressPoll Emulator and Resource Guide for Versions 1.2 to 2.1	3.0	02/08/08	Premier Election Solutions
ExpressPoll User's Guide for Versions 2.0 and 2.1	3.0	02/08/08	Premier Election Solutions
GEMS® TDP			
Ballot Specifications Guide	7.0	06/24/08	Premier Election Solutions
GEMS 1.20 Results Server File Format 1.1	2.1	08/21/07	Premier Election Solutions
GEMS 1.20.2 Election Administrator's Guide	3.0	02/08/08	Premier Election Solutions
GEMS 1.21 Build Process	4.0	02/06/09	Premier Election Solutions
GEMS 1.21.1 Election Administrator's Guide	2.0	10/01/08	Premier Election Solutions
GEMS 1.21.1 Reference Guide	3.0	07/09/08	Premier Election Solutions
GEMS 1.21.1 User's Guide	3.0	07/09/08	Premier Election Solutions
GEMS AccuVote-OS Central Count Protocol 1.0	1.1	08/20/07	Premier Election Solutions
GEMS AccuVote-OS Precinct Count Protocol 1.0	1.1	08/20/07	Premier Election Solutions
GEMS Audio Import Format 1.0	2.1	08/21/07	Premier Election Solutions
GEMS AVServer Ballot Station Download Message Format 1.0	1.1	08/20/07	Premier Election Solutions
GEMS AVServer Ballot Station Protocol 1.0	2.1	08/20/07	Premier Election Solutions
GEMS AVServer Ballot Station Upload Message Format 1.0	1.1	08/20/07	Premier Election Solutions
GEMS AVServer CTS Download Message Format 1.0	1.1	08/20/07	Premier Election Solutions
GEMS AVServer Download Message Format 2.0	1.0	11/21/07	Premier Election Solutions
GEMS AVServer Vote Center List Message Format 1.0	1.1	08/20/07	Premier Election Solutions
GEMS AVServer Vote Center Queue Message Format 1.0	1.1	08/20/07	Premier Election Solutions
GEMS BCWin Results Export Format 1.0	1.1	08/20/07	Premier Election Solutions
GEMS California Results Export Format 1.0	1.1	08/20/07	Premier Election Solutions
GEMS Card Data Export Format 1.1	1.1	08/20/07	Premier Election Solutions
GEMS Comma Delimited Export Format 1.0	1.0	12/06/07	Premier Election Solutions
GEMS Delaware Import Format 1.0	1.1	08/20/07	Premier Election Solutions
GEMS Delaware Results Export Format 1.0	1.1	08/20/07	Premier Election Solutions
GEMS DIMS Results Export Format 1.0	1.1	08/20/07	Premier Election Solutions
GEMS Election Database Format 1.21	1.0	02/01/08	Premier Election Solutions
GEMS Florida Results Export Format 1.0	1.1	08/21/07	Premier Election Solutions
GEMS L.A. Import Format 1.0	1.1	08/21/07	Premier Election Solutions
GEMS Michigan Results Export Format 1.0	1.1	08/21/07	Premier Election Solutions
GEMS Minnesota Results Export Format 1.0	1.1	08/21/08	Premier Election Solutions
GEMS Mississippi Results Export Format 1.0	1.1	08/21/07	Premier Election Solutions
GEMS Ohio Results Export Format 1.0	1.1	08/21/08	Premier Election Solutions

GEMS Region Server Upload Message Format 1.0	1.1	08/21/07	Premier Election Solutions
GEMS Region Server Upload Message Format 2.0	1.1	08/21/07	Premier Election Solutions
GEMS Standard Import Format 1.5	5.1	08/21/07	Premier Election Solutions
GEMS Standard Results Export Format 1.0	3.1	08/21/07	Premier Election Solutions
GEMS Voter Card Data Export Format 2.1	3.0	08/21/07	Premier Election Solutions
GEMS Voter Card Data Export Format 2.2	2.0	08/21/07	Premier Election Solutions
GEMS Voter Registration Import Format 1.0	1.1	08/21/07	Premier Election Solutions
GEMS Wisconsin Results Export Format 1.0	1.1	08/21/07	Premier Election Solutions
GEMS 1.21.1 System Administrator's Guide	2.0	06/24/08	Premier Election Solutions
GEMS RTF Export-Import Format 1.0	3.0	05/05/08	Premier Election Solutions
GEMS Voted Ballots Results Export Format 1.0	1.0	05/13/08	Premier Election Solutions
Key Card Tool^{TM} TDP			
Ballot Station Smart Card Format 1.0	1.1	08/20/07	Premier Election Solutions
Key Card Tool 4.7 Build Process	3.0	11/07/07	Premier Election Solutions
Key Card Tool 4.7 Build Process	5.0	09/04/08	Premier Election Solutions
FEC 2002 Key Card Tool 4.7.2 TDP Introduction	1.0	07/07/08	Premier Election Solutions
FEC 2002 Key Card Tool 4.7.2 TDP System Overview	1.0	07/07/08	Premier Election Solutions
FEC 2002 Key Card Tool 4.7.2 TDP System Functionality Description	1.0	07/07/08	Premier Election Solutions
FEC 2002 Key Card Tool 4.7.2 TDP System Hardware Specification	1.0	07/07/08	Premier Election Solutions
FEC 2002 Key Card Tool 4.7.2 TDP Software Design and Specification	1.0	07/07/08	Premier Election Solutions
FEC 2002 Key Card Tool 4.7.2 TDP System Security Specification	1.0	70/07/08	Premier Election Solutions
FEC 2002 Key Card Tool 4.7.2 TDP System Test and Verification Specification	1.0	07/07/08	Premier Election Solutions
FEC 2002 Key Card Tool 4.7.2 TDP System Operations Procedures	1.0	07/07/08	Premier Election Solutions
FEC 2002 Key Card Tool 4.7.2 TDP System Maintenance Procedures	1.0	07/07/08	Premier Election Solutions
FEC 2002 Key Card Tool 4.7.2 TDP Personnel Deployment and Training	1.0	07/07/08	Premier Election Solutions
FEC 2002 Key Card Tool 4.7.2 TDP Configuration Management Plan	1.0	07/07/08	Premier Election Solutions
FEC 2002 Key Card Tool 4.7.2 TDP Quality Assurance Program	1.0	07/07/08	Premier Election Solutions
FEC 2002 Key Card Tool 4.7.2 TDP System Change Notes	1.0	07/07/08	Premier Election Solutions
FEC 2002 Key Card Tool 4.7.2 TDP Telecommunications	1.0	07/07/08	Premier Election Solutions
FEC 2002 Key Card Tool 4.7.2 TDP Appendix A: Software Specifications	1.0	07/07/08	Premier Election Solutions
FEC 2002 Key Card Tool 4.7.2 TDP Appendix B: Program Structure and Flow	1.0	07/07/08	Premier Election Solutions
FEC 2002 Key Card Tool 4.7.2 TDP Appendix E: System and Data Integrity	1.0	07/07/08	Premier Election Solutions
FEC 2002 Key Card Tool 4.7.2 TDP Appendix F: Performance Metrics	1.0	07/07/08	Premier Election Solutions
FEC 2002 Key Card Tool 4.7.2 TDP Appendix H: Administrative Test Plans	1.0	07/07/08	Premier Election Solutions
FECVSS 2002 Trace to Vendor Testing and TDP	None	None	Premier Election Solutions
Key Card Tool 4.7.1 User's Guide	1.0	07/07/08	Premier Election Solutions
Key Card Tool Test Specifications	1.0	07/07/08	Premier Election Solutions
Premier Central Scan (PCS) TDP			
FEC 2002 PCS 2.2.1 TDP Introduction	1.0	06/24/08	Premier Election Solutions
FEC 2002 PCS 2.2.1 TDP System Overview	1.0	06/24/08	Premier Election Solutions
FEC 2002 PCS 2.2.1 TDP System Functionality Description	1.0	06/24/08	Premier Election Solutions
FEC 2002 PCS 2.2.1 TDP System Hardware Specification	1.0	06/24/08	Premier Election Solutions
FEC 2002 PCS 2.2.1 TDP Software Design and Specification	1.0	06/24/08	Premier Election Solutions
FEC 2002 PCS 2.2.1 TDP System Security Specification	1.0	06/24/08	Premier Election Solutions
FEC 2002 PCS 2.2.1 TDP System Test and Verification Specification	1.0	06/24/08	Premier Election Solutions
FEC 2002 PCS 2.2.1 TDP System Operations Procedures	1.0	06/24/08	Premier Election Solutions

FEC 2002 PCS 2.2.1 TDP System Maintenance Procedures	1.0	06/24/08	Premier Election Solutions
FEC 2002 PCS 2.2.1 TDP Personnel Deployment and Training Requirements	1.0	06/24/08	Premier Election Solutions
FEC 2002 PCS 2.2.1 TDP Personnel Deployment and Training Requirements	1.0	06/24/08	Premier Election Solutions
FEC 2002 PCS 2.2.1 TDP Quality Assurance Program	1.0	06/24/08	Premier Election Solutions
FEC 2002 PCS 2.2.1 TDP System Change Notes	1.0	06/24/08	Premier Election Solutions
FEC 2002 PCS 2.2.1 TDP Telecommunications	1.0	06/24/08	Premier Election Solutions
FEC 2002 PCS 2.2.1 TDP Appendix A: Software Specifications	1.0	06/24/08	Premier Election Solutions
2002 FEC PCS 2.2.1 TDP Appendix B: Program Specifications	1.0	06/24/08	Premier Election Solutions
FEC 2002 PCS 2.2.1 TDP Appendix G: System and Data Integrity	1.0	06/24/08	Premier Election Solutions
FEC 2002 PCS 2.2.1 TDP Appendix I: Performance Metrics	1.0	06/24/08	Premier Election Solutions
FEC 2002 PCS 2.2.1 TDP Appendix K: Administrative Test Plans	1.0	06/24/08	Premier Election Solutions
FECVSS 2002 Trace to Vendor Testing and TDP	None	None	Premier Election Solutions
Premier Central Scan Election Data Format 3.0	2.0	02/01/08	Premier Election Solutions
Premier Central Scan 2.2.1 System Administrator's Guide	1.0	06/24/08	Premier Election Solutions
Premier Central Scan 2.2.1 User's Guide	1.0	06/25/08	Premier Election Solutions
DRS PhotoScribe PS900 iM2/PS960 Hardware Guide	7.0	02/09/09	Premier Election Solutions
Premier Central Scan 2.2 Build Process	2.1	08/29/08	Premier Election Solutions
VCProgrammer TDP			
VCProgrammer 4.7 Build Process	5.1	08/29/08	Premier Election Solutions
VCProgrammer 4.7.2 System Administrator's Guide	1.0	07/09/08	Premier Election Solutions
FEC 2002 VCProgrammer 4.7.2 TDP Introduction	1.0	07/08/08	Premier Election Solutions
FEC 2002 VCProgrammer 4.7.2 TDP System Overview	1.0	07/08/08	Premier Election Solutions
FEC 2002 VCProgrammer 4.7.2 TDP System Functionality Description	1.0	07/08/08	Premier Election Solutions
FEC 2002 VCProgrammer 4.7.2 TDP System Hardware Specification	1.0	07/08/08	Premier Election Solutions
FEC 2002 VCProgrammer 4.7.2 TDP Software Design and Specification	1.0	07/08/08	Premier Election Solutions
FEC 2002 VCProgrammer 4.7.2 TDP System Security Specification	1.0	07/08/08	Premier Election Solutions
FEC 2002 VCProgrammer 4.7.2 TDP System Test and Verification Specification	1.0	07/08/08	Premier Election Solutions
FEC 2002 VCProgrammer 4.7.2 TDP System Operations Procedures	1.0	07/08/08	Premier Election Solutions
FEC 2002 VCProgrammer 4.7.2 TDP System Maintenance Procedures	1.0	07/08/08	Premier Election Solutions
FEC 2002 VCProgrammer 4.7.2 TDP Personnel Deployment and Training	1.0	07/08/08	Premier Election Solutions
FEC 2002 VCProgrammer 4.7.2 TDP Configuration Management Plan	1.0	07/08/08	Premier Election Solutions
FEC 2002 VCProgrammer 4.7.2 TDP Quality Assurance Program	1.0	07/08/08	Premier Election Solutions
FEC 2002 VCProgrammer 4.7.2 TDP System Change Notes	1.0	07/08/08	Premier Election Solutions
FEC 2002 VCProgrammer 4.7.2 TDP Telecommunications	1.0	07/08/08	Premier Election Solutions
FEC 2002 VCProgrammer 4.7.2 TDP Appendix A: Software Specifications	1.0	07/08/08	Premier Election Solutions
FEC 2002 VCProgrammer 4.7.2 TDP Appendix B: Program Structure and Flow	1.0	07/08/08	Premier Election Solutions
FEC 2002 VCProgrammer 4.7.2 TDP Appendix C: Data Organization and Flow	1.0	07/08/08	Premier Election Solutions
FEC 2002 VCProgrammer 4.7.2 TDP Appendix G: System and Data Integrity	1.0	07/08/08	Premier Election Solutions
FEC 2002 VCProgrammer 4.7.2 TDP Appendix H: Performance Metrics	1.0	07/08/08	Premier Election Solutions
FEC 2002 VCProgrammer 4.7.2 TDP Appendix J: Administrative Test Plans	1.0	07/08/08	Premier Election Solutions
FECVSS 2002 Trace to Vendor Testing and TDP	None	None	Premier Election Solutions

Document	Version	Date	Vendor
VCProgrammer 4.7.2 User's Guide	1.0	07/07/08	Premier Election Solutions
VCProgrammer Voter Data Import Format 1.0 Revision 2.0	2.0	7/9/2008	Premier Election Solutions
VCProgrammer Voter Data Import Format 2.0	1.0	09/14/07	Premier Election Solutions
Voter Card Encoder TDP			
FEC 2002 Voter Card Encoder 1.3.3 TDP Introduction	3.0	02/19/08	Premier Election Solutions
FEC 2002 Voter Card Encoder 1.3.3 TDP System Overview	1.1	01/31/08	Premier Election Solutions
FEC 2002 Voter Card Encoder 1.3.3 TDP System Functionality Description	2.0	01/31/08	Premier Election Solutions
FEC 2002 Voter Card Encoder 1.3.3 TDP System Hardware Specification	2.0	01/31/08	Premier Election Solutions
FEC 2002 Voter Card Encoder 1.3.3 TDP Software Design and Specification	2.0	01/31/08	Premier Election Solutions
FEC 2002 Voter Card Encoder 1.3.3 TDP System Security Specification	2.0	01/31/08	Premier Election Solutions
FEC 2002 Voter Card Encoder 1.3.3 TDP System Test and Verification Specification	1.1	01/31/08	Premier Election Solutions
FEC 2002 Voter Card Encoder 1.3.3 TDP System Operations Procedures	1.1	01/31/08	Premier Election Solutions
FEC 2002 Voter Card Encoder 1.3.3 TDP System Maintenance Procedures	2.0	01/31/08	Premier Election Solutions
FEC 2002 Voter Card Encoder 1.3.3 TDP Personnel Deployment and Training	1.1	01/31/08	Premier Election Solutions
FEC 2002 Voter Card Encoder 1.3.3 TDP Configuration Management Plan	2.0	01/31/08	Premier Election Solutions
FEC 2002 Voter Card Encoder 1.3.3 TDP Quality Assurance Program	2.0	01/31/08	Premier Election Solutions
FEC 2002 Voter Card Encoder 1.3.3 TDP System Change Notes	3.0	02/19/08	Premier Election Solutions
FEC 2002 Voter Card Encoder 1.3.3 TDP Telecommunications	1.1	01/31/08	Premier Election Solutions
FEC 2002 Voter Card Encoder 1.3.3 TDP Appendix A: Software Specifications	1.1	01/31/08	Premier Election Solutions
FEC 2002 Voter Card Encoder 1.3.3 TDP Appendix B: Program Structure and Flow	1.1	01/31/08	Premier Election Solutions
FEC 2002 Voter Card Encoder 1.3.3 TDP Appendix C: Data Organization and Flow	1.1	01/31/08	Premier Election Solutions
FEC 2002 Voter Card Encoder 1.3.3 TDP Appendix G: System and Data Integrity	1.1	01/31/08	Premier Election Solutions
FEC 2002 Voter Card Encoder 1.3.3 TDP Appendix H: Performance Metrics	1.1	01/31/08	Premier Election Solutions
FEC 2002 Voter Card Encoder 1.3.3 TDP Appendix J: Administrative Test Plans	2.0	01/31/08	Premier Election Solutions
FECVSS 2002 Trace to Vendor Testing and TDP	None	None	Premier Election Solutions
Voter Card Encoder 1.3.3 User's Guide	5.0	02/12/08	Premier Election Solutions
Voter Card Encoder Build Process	5.1	08/29/08	Premier Election Solutions

Appendix B - TDP Documents

Table B-1 PCA and FCA Discrepancies

#	Type	Location	Issue Description	Guideline
1	Doc Disc	FEC 2002 PCS 2.2.1 Technical Data Package System Maintenance Procedures v1.0 DRS PhotoScribe PS900 iM2/PS960 Hardware Guide v6.0	The Hardware Guide listed (referenced by the System Maintenance Procedures listed) does not address parts by size, manufacturer's designation or individual quantities needed.	v.2: 2.9.4.1 Common Standards- The vendor shall provide a complete list of approved parts and materials needed for maintenance. This list shall contain sufficient descriptive information to identify all parts by: b. Size; d. Manufacturer's designation; e. Individual quantities needed;
2	Doc Disc	ASSURE/GEMS/ AIMS/Automark TDP	Reference is made to an "Automark Technical Systems VPN" in "AutoMARK PREM Ballot Scanning and Printing Specification AQS-13-5002-007-S.doc" (Rev. 4) and "AutoMARK PREM Embedded Database Interface Specifications AQS-13-5002-005-S.doc" (Rev. 4). We can find no other references to a VPN in the documentation. The usage of a VPN must be fully described in the documentation in order that we assess the applicability and security testing of these two sections in particular and possibly other sections related to telecommunications and data transmission over public networks. The appearance of the word VPN in the Automark documentation conflicts with the "N/A" that appears in numerous subsections of section 6.5 and 6.6 of the documents "AIMS PREM Sect00C Requirements Trace Matrix AQS-13-5000-203-R.doc" and "AutoMARK PREM Requirement Trace Matrix AQS-13-5000-003-F.doc"	VSS Volume 1 Section 6.6.1 All systems that transmit data over public telecommunications networks shall: ... and Section 6.6.2 Systems designed for transmission of telecommunications over public networks shall meet security standards that address the security risks attendant with the casting of ballots from poll sites controlled by election officials using voting devices configured and installed by election officials and/or their vendor or contractor, and using in-person authentication of individual voters.
3	Doc Disc	Security Review - ExpressPoll (appears in I:2.2.2.1.e, because that is where it was observed)	ExpressPoll, EZRoster "ExpressPoll CardWriter 1.1.6 TDP Appendix A Software Specifications.pdf Rev 1.1" states that the C# application, ExPollCardWriter, and the C++ application, PcmCardDll, are "console" applications running on Windows CE (Our code review concurs). The documents "ExpressPoll 2000 EZRoster System Administrators Guide Revision 4.0.pdf" Rev 4.0 and "ExpressPoll 4000 EZRoster Pollworkers Guide Revision 2.0.pdf" Rev. 2.0 show a user interface. We cannot find the source code to this user interface application and also cannot find a reference to it in "ASSURE1 2MatrixRev4 0Nov1708.xls" (Matrix). We do not have any source code for a user interface application that looks like EZRoster nor do we have anything labelled EZRoster, ExPoll or ExPollLauncher. The latter two are referred to in a documents delivered to Systest on 3/23/2007: "ExpressPoll EZRoster 1.0 Build Process Revision 2.0.pdf" and "ExpressPoll EZRoster 2.0 Build Process Revision 1.0.pdf" However we are not sure if these two documents are a part of the current TDP because they do not appear in the Matrix spreadsheet. All three devices, 5000, 4000, 2000 are included in the Systest test plan but marked "(COTS)." The user interface figures in the documentation shows such words as "Diebold Election Systems", "Manage Polls,", "Ballots." Please clarify. Furthermore, the document "ExpressPoll CardWriter 1.1.6 TDP Appendix F Installation Procedures.pdf" states that there is both a Boot Rev 4.7 and CE OS 2.56. We do not have the configuration or source files for either one of these.	I: 9.4.1.3 The software qualification tests encompass a number of interrelated examinations, involving assessment of application source code for its compliance with the requirements spelled out in Volume I, Section 4
4	Doc Disc	ASM - TDP	A) No procedure whereby jurisdictional level certificates are created and signed by the root certificate. ASM 1.2.1 TDP Appendix B Program Specifications.pdf contains a Use case entitled "Issue new certificates." However	I: 2.2.1.f - If access to a system function is to be restricted or controlled, the system shall incorporate a means of implementing

#	Type	Location	Issue Description	Guideline
			ASSURE_Security_Manager_1.2_Users_Guide.pdf contains no such use case. (Nor can it be found in the application). Without this procedure the jurisdiction cannot generate its own certificates, the private key of which it owns. B) Related but also applicable to 6.2.1.f The test application submitted by Premier has a "Premier Root Certificate Authority" which is signing other certificates to provide trust chains. Cannot find any documentation of Premier's internal security policy relating to the physical protection of this root certificate's private key, separation of duties in terms of its usage, or methods to notify the EAC or jurisdictions if the private key is compromised. The security trade-offs associated with the usage of the "Premier Root Certificate Authority" are not discussed in the vendor documentation. The design of the system requires that the jurisdiction install this root certificate as trusted, and thus the procedures associated with its security are appropriate to the EAC and the jurisdictions.	this capability. I:6.2.1.f - General characteristics of supervisory access privileges;
5	Doc Disc	AutoMARK PREM System Security Specification AQS-13-5002-001-S	No referred section 5 in" AutoMARK PREM System Security Specification AQS-13-5002-001-S",No documentation for mandatory administrative procedures (Vol 1 Sec 2.2.2.1 is complete, Vol 1 sec 2.2.3 is incomplete, Vol 1 Sec 6.2.1.1 is in complete), and no documentation is provided for effective password management.	Vol 1 :2.2.1e:Provide security provisions that are compatible with the procedure and administrative tasks involved in equipment preparation, testing, and operation. Vol 1 :2.2.1g:Provide documentation of mandatory administrative procedures for effective system security. Vol 1 :2.2.3a:Restoration of the device to the operating condition existing immediately prior to the error or failure, without loss or corruption of voting data previously stored in the device; Vol 1 :2.2.3b:Resumption of normal operation following the corrections of a failure in a memory component, or in a data processing component, including the central processing unit; Vol 1 :6.2.1d:Effective password management;
6	Doc Disc	AccuVote-TSX with AVPM TDP Appendix D: COTS Component Specifications	Not finding referenced document "AccuVote-TSX with AVPM TDP Appendix D: COTS Component Specifications" in 08062008 delivery	Vol 1 2.2.4.1e: Protect against the failure of any data input or storage device;
7	Doc Disc	AccuVote-OS Central Count TDP	Documented as recording normal and abnormal events as out of scope and address by the controlling application(when no connection to the host has been established, where the events are logged)	vol1 2.2.4.1g:Record and report the date and time of normal and abnormal events; vol1 2.2.4.1i: Detect and record every event, including the occurrence of an error condition that the system cannot overcome, and time-dependent or programmed events that occur without the intervention of the voter or a polling place operator;
8	Doc Disc	AccuVote-OS Precinct Count TDP	No protection procedures are provided against the failure of any data input or storage device(Documented as out of scope, but storing the data on the memory card)	vol1 2.2.4.1e: Protect against the failure of any data input or storage device;
9	Doc Disc	Security review-AccuVote-AVOSX TDP	No procedures are provided for protection against the failure of any input data or storage device(Documented as out of scope, but storing the data on the memory card).	vol1 2.2.4.1e: Protect against the failure of any data input or storage device;
10	Doc Disc	Premiers Client Security Policy.pdf Rev 3.0	Premiers Client Security Policy.pdf Rev 3.0 -- Document does not contain a description in sufficient detail to allow an unskilled user to set the password history (2.3.1) or password aging (2.3.2) requirements in the COTS OS. Reject: Doc P: Document does not contain a description	v1: 2.1.1.a Provide security access controls that limit or detect access to critical system components to guard against loss of system integrity, availability, confidentiality, and

#	Type	Location	Issue Description	Guideline
			in sufficient detail to allow an unskilled user to set the audit log security policies of a COTS OS.	accountability.
11	Doc Disc	Premiers Client Security Policy.pdf Rev 3.0	Premiers Client Security Policy.pdf Rev 3.0 -- Document contradicts itself. In section 3.1.1 it recommends that passwords should not be shared among users. But in section 3.4.2 it recommends that only a single administrator account exist. If the single administrator does not share the password then in the event that the single administrator is unavailable the system might become inaccessible. 3.1.1 is correct, all users must be individually audited for their actions.	v1: 2.1.1.a Provide security access controls that limit or detect access to critical system components to guard against loss of system integrity, availability, confidentiality, and accountability.
12	Doc Disc	VCProgrammer TDP	VCProgrammer - Neither "VCProgrammer User's Guide Revision 1.0" nor "VCProgrammer 4.7.2 System Administrator's Guide Revision 1.0" describe the activity which the document VCProgrammer 4.7.2 Technical Data Package Appendix G: System and Data Integrity Revision 1 refers to in section 5.3 (bullet item 5). When does the described activity occur?	v1: 2.2.1.c Use the system's control logic to prevent a system function from executing if any preconditions to the function have not been met.
13	Doc Disc	VCProgrammer TDP	VCProgrammer -- Documentation does not address parity or checksums protecting Configuration files accepted from the Voter Card Data File accepted from the external voter registration system.	v1:2.1.2.e Provide software that monitors the overall quality of data read-write and transfer quality status, checking the number and types of errors that occur in any of the relevant operations on data and how they were corrected.
14	Doc Disc	VCProgrammer TDP	VCProgrammer -- Documentation does not describe the authentication of the file or system inputting the file "Voter Registration File" The system inputting this information is outside the boundary of the ASSURE 1.2 certified system, but this external system apparently has access to the VCProgrammer computer with the ability to at least place the file onto the system at an appropriate time. This placement appears to occur dynamically at the time of the voter obtaining a vote access card over a network connection.	v1: 6.2.1 The vendor shall specify the general features and capabilities of the access control policy recommended to provide effective voting system security.
15	Doc Disc	GEMS 1.21.1 Election Administrator's Guide	The first paragraph of section 12.3 states that each task falls within corresponding personnel categories and lifecycle component. However the document does not tie each task with any particular personnel category or lifecycle component. It likewise does not address how the personnel categories in section 12.1 overlap or intersect with the roles imposed by the Key Card Tool. (see also 6.2.1.f) This is important information from a security policy perspective (Premier Client Security Policy document reference)	v1: 6.2.1.2.b Specify whether an individual's authorization is limited to a specific time, time interval or phase of the voting or counting operations
16	Doc Disc	VCProgrammer 4.7.2 TDP 2.06 System Security Specification.pdf	VCProgrammer --As this device may be connected to an untrusted networked device (Voter Registration System) it must be protected by security kernels such as antivirus software and firewalls.	v1: 6.4.2 Voting systems shall deploy protection against the many forms of threats to which they may be exposed such as file and macro viruses, worms, Trojan horses, and logic bombs. Vendors shall develop and document the procedures to be followed to ensure that such protection is maintained in a current status.
17	Doc Disc	VCProgrammer 4.7.2 TDP 2.06 System Security Specification.pdf	VCProgrammer, ASSURE Security Manager, Key Card Tool, PCS Workstation, GEMS -- Documentation does not cover the required antivirus, firewall or other software and/or security kernels used to protect the system. Consequently it does not provide any published standards used to accept this software. In regards to statements made regarding the usage of the "Microsoft Malicious Software Removal Tool," Microsoft documentation (http://support.microsoft.com/kb/890830) states: "The Microsoft Malicious Software Removal Tool does not replace an antivirus product" so this tool (standing alone) does not meet the "proven commercial security software requirement."	v2: 6.4 The ITA may meet these testing requirements by confirming proper implementation of proven commercial security software. In this case, the vendor must provide the published standards and methods used by the US Government to test and accept this software, or it may provide references to free, publicly available publications of these standards and methods, such as government web sites.
18	Doc Disc	VCProgrammer, ASSURE	VCProgrammer -- The only documentation found is the AVValidator documentation, which describes a System	v2:6.4 At its discretion, the ITA may conduct or simulate attacks on the

#	Type	Location	Issue Description	Guideline
		Security Manager, Key Card Tool, PCS Workstation, GEMS (all PC based devices) TDP	Identification Tool relevant to section 5.8 of the Program Manual, but this tool does not address the VCProgrammer, ASSURE Security Manager, Key Card Tool, PCS Workstation or GEMS host computer systems.	system to confirm the effectiveness of the system's security capabilities, employing test procedures approved the NASED Voting Systems Board.
19	Doc Disc	VCEncoder TDP	VCEncoder -- Documentation does not address tampering during system repair, or interventions in system operations in response to system failure per the VSS Requirements.	v1: 2.2.1d Provide safeguards to protect against tampering during system repair, or interventions in system operations, in response to system failure.
20	Doc Disc	VCEncoder TDP	VCEncoder - Documentation states that communications is not applicable, but the device contains a serial port and as such security must be addressed. It also communicates with a smart card and communication needs to be addressed.	v1: 6.2.1.c Communications
21	Doc Disc	VCEncoder TDP	VCEncoder -- Unable to find the document "Appendix C: Installing the Firmware in the Voter Card Encoder User's Guide" referred to in "VCE 1.3.3 TDP Appendix A Software Specifications.pdf"	v1: 6.2.1.e Protection abilities of a particular operating system;
22	Doc Disc	VCEncoder TDP	VCEncoder -- Unable to find the information appropriate to make a determination that an off-the-shelf COTS Spyrus PAR 2 cannot be used to program smart cards to allow unregistered ballots to be cast or that (6.4.1.c) no Spyrus firmware is operational in the absence of the Premier code.	v1: 6.2.1.f General characteristics of supervisory access privileges;
23	Doc Disc	VCEncoder TDP	VCEncoder -- Cannot find a description of the protocol used to program ballots or the protocol used to download new firmware. "VCE 1.3.3 TDP 2.06 System Security Specification.pdf" states that "Special Protocols" is N/A.	v1: 6.2.2.f Special protocols
24	Doc Disc	VCEncoder TDP	VCEncoder -- "VCE 1.3.3 TDP 2.06 System Security Specification.pdf" does not address this requirement	v1: 6.4.1.c The election-specific programming may be installed and resident as firmware, provided that such firmware is installed on a component (such as computer chip) other than the component on which the operating system resides; and
25	Doc Disc	ExpressPoll TDP	ExpressPoll - Documentation does not address 2.2.1.d which would include the possibility that the device contains Poll of voters at the time of failure.	2.2.1.d Provide safeguards to protect against tampering during system repair, or interventions in system operations, in response to system failure.
26	Doc Disc	Premiers Client Security Policy.pdf Rev 3.0	Premier Client Security Document - Document does not use the word "mandatory" for any administrative procedures relating to effective system security but instead uses the word "should" which is not the same intent as the requirement "mandatory"	v1: 2.2.1.g Provide documentation of mandatory administrative procedures for effective system security.
27	Doc Disc	ExpressPoll CardWriter 1.1.6 TDP 2.06 System Security Specification.pdf	Document states that Communications is N/A which is incorrect. The ExpressPoll units contain USB ports, and Ethernet ports, so communications over these ports must be described.	v1: 6.2.1.c Communications
28	Doc Disc	ExpressPoll CardWriter 1.1.6 TDP Appendix F Installation Procedures.pdf	The requirement is to validate the ROM. The document does not describe validating the ROM. It only validates functionality or a version number. AVValidator does not currently address these devices (4000 or 5000)	v1: 6.4.1.a If software is resident in the system as firmware, the vendor shall require and state in the system documentation that every device is to be retested to validate each ROM prior to the start of elections operations;
29	Doc Disc	ExpressPoll CardWriter 1.1.6 TDP 2.06 System Security Specification.pdf	Requirement not addressed.	v1: 6.4.1.c The system bootstrap, monitor, and device-controller software may be resident permanently as firmware, provided that this firmware has been shown to be inaccessible to activation or control by any means other than by the authorized initiation and execution of the vote-counting program, and its associated

#	Type	Location	Issue Description	Guideline
				exception handlers; and v1: 6.4.1.d The election-specific programming may be installed and resident as firmware, provided that such firmware is installed on a component (such as computer chip) other than the component on which the operating system resides; and and v1: 6.4.1.e After initiation of election day testing, no source code or compilers or assemblers shall be resident or accessible.
30	Doc Disc	ASM 1.2.1 TDP 2.03 System Functionality Description.pdf	ASM 1.2.1 TDP 2.03 System Functionality Description.pdf section 2.3.2.1.5 contains all "should perform" procedures not mandatory procedures per the VSS requirement.	v1: 2.2.1.g Provide documentation of mandatory administrative procedures for effective system security.
31	Doc Disc	ASM 1.2.1 TDP Appendix G System and Data Integrity.pdf	Document does not state what files, folders, and databases the ASM subsystem and/or PCS require for jurisdictions to archive or backup from an election.	v1: 2.2.1.g Provide documentation of mandatory administrative procedures for effective system security.
32	Doc Disc	ASM 1.2.1 TDP Appendix G System and Data Integrity.pdf	Section 5.4 refers to integrity supported by OpenGroup DCOM. However the build document "ASSURE Security Service 1.2 Build Process Revision 1.0.pdf" does not include any such COTS subsystem. If system utilizes Microsoft DCOM then Microsoft references are required to support any integrity, confidentiality or authenticity claims.	v1: 2.2.1.d 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, and
33	Doc Disc	ASM 1.2.1 TDP 2.03 System Functionality Description.pdf	ASM 1.2.1 TDP 2.03 System Functionality Description.pdf states that this requirement is N/A. It is the responsibility of the software to determine the degree of operability of the hardware upon which it relies for functionality and may include 1) ability to verify operability of the write/read audit log file 2) ability to verify operability of DCOM and/or other systems communications 3) ability to verify operability of a biometric security device	v1: 2.2.4.1.j Include built-in measurement, self-test, and diagnostic software and hardware for detecting and reporting the system's status and degree of operability.
34	Doc Disc	ASM 1.2.1 TDP Appendix A Software Specifications.pdf	ASM 1.2.1 TDP Appendix A Software Specifications.pdf states that the ASM software runs on "Windows NT." What versions of NT are supported? Other documents imply the possibility that it can run on XP, Windows Server 2000, Windows Server 2003. (also 6.2.1.b) The EAC Application is only for Windows XP.	v1:6.2.1.a Software Access Controls
35	Doc Disc	Premier's Windows Configuration Guide Rev 4.0Draft.pdf	Premier's Windows Configuration Guide Rev 4.0Draft.pdf does not delineate what systems need to have the configuration performed on them and this document is not addressed in all Windows platform software security documentation.	v1:6.2.1.b Hardware access controls
36	Doc Disc	ASM 1.2.1 TDP 2.04 System Hardware Specification.pdf	ASM 1.2.1 TDP 2.04 System Hardware Specification.pdf does not address the fingerprint scanners that are compatible with ASM or their interoperability.	v1:6.2.1.b Hardware access controls
37	Doc Disc	ASM 1.2.1 TDP 2.04 System Hardware Specification.pdf	ASM 1.2.1 TDP 2.04 System Hardware Specification.pdf (as in 6.2.1.a) No hardware or COTS platform is specified. Running this software on a peer-to-peer network creates security problems not addressed in vendor documentation. See http://support.microsoft.com/kb/266625. (Authentication of DCOM utilizing a peer-to-peer network).	v1: 6.2.1.d Effective password management;
38	Doc Disc	ASSURE_Security_Manager_1.2_Users_Guide.pdf	ASSURE_Security_Manager_1.2_Users_Guide.pdf has the supervisor creating a new user with a password (3.3.5.10). Cannot find here or in PCS_2.2.1_Users_Guide_Rev_1.0.pdf any way for the new user to change their password. Unless there is biometric enrollment, the supervisor can impersonate any other user on the system.	v1: 6.2.1.d Effective password management;

#	Type	Location	Issue Description	Guideline
39	Doc Disc	ASSURE Security Manager TDP	Unable to find any reference to what fingerprint scanner/readers are compatible with ASM and PCS.	v1: 6.2.1.2.a Identify each person to whom access is granted, and the specific functions and data to which each person holds authorized access
40	Doc Disc	ASM 1.2.1 TDP 2.06 System Security Specification.pdf	ASM 1.2.1 TDP 2.06 System Security Specification.pdf states that this requirement is N/A. In fact the documentation needs to address such things as a) underlying security kernels associated with the SSL claimed to be in operation between the workstations and ASM (is this OpenSSL, Windows or some other kernel?) b) security kernels associated with the smart card security. c) this would be a good place to address the biometric security kernel which would include its default or not default operational settings and such things as the FRR and FAR and/or if this is under jurisdictional control somewhere.	v1: 6.2.1.2.d Security Kernels
41	Doc Disc	ASM 1.2.1 TDP 2.06 System Security Specification.pdf	ASM 1.2.1 TDP 2.06 System Security Specification.pdf states that encryption is used but provides no details.	v1: 6.2.1.2.g Message encryption and
42	Doc Disc	Key Card Tool 4.7.2 TDP 2.03 System Functionality Description.pdf	Key Card Tool 4.7.2 TDP 2.03 System Functionality Description.pdf refers to Premiers Windows Configuration Guide which in turn is not clear or specific about allowing or not allowing Key Card Tool to be connected to a network. Use of the wording "not intended to be used on a network" is not mandatory. As there does not appear to be a Key Card Tool Administrators guide, this information might appear in the Users Guide but cannot be found there either. (also pertinent to I:6.5.4.2 where it does not appear specifically in Premier's Client Security Policy or Gems 1.21.1 Election Administrator Guide Rev 2.0, and these are referred to in Key Card Tool 4.7.2 TDP 2.06 System Security Specification.pdf section 2.6.6)	v1: 2.2.5.3 COTS General Purpose Computer System Requirements
43	Doc Disc	Key Card Tool 4.7.2 TDP 2.06 System Security Specification.pdf	Utilization of the smart cards is a security kernel and the security of the entire operation depends on the security within the smart card.	v1: 6.2.2.d Security kernels
44	Doc Disc	Key Card Tool 4.7.2 TDP 2.06 System Security Specification.pdf	Key Card Tool 4.7.2 TDP 2.06 System Security Specification.pdf states requirement is N/A. Computer Generated Password key generation is one of the purposes of Key Card Tool. Document and include any mitigation of known vulnerabilities.	v1: 6.2.2.e Computer-generated password keys
45	Doc Disc	Key Card Tool 4.7.2 TDP 2.06 System Security Specification.pdf	Key Card Tool 4.7.2 TDP 2.06 System Security Specification.pdf states that special protocols are not used. At least one special protocol being used for access control is the ISO7816 smart card communications protocol.	v1: 6.2.2.f Special protocols
46	Doc Disc	Key Card Tool 4.7.2 TDP 2.06 System Security Specification.pdf	Key Card Tool 4.7.2 TDP 2.06 System Security Specification.pdf states that message encryption is N/A. Key Card Tool generates a key. What is this key used for if not encryption? If it is not encryption it is some other access control protocol that needs to be documented since the section header states "all system access control measures ... such as."	v1: 6.2.2.g Message encryption and
47	Doc Disc	Key Card Tool 4.7.2 TDP 2.06 System Security Specification.pdf	Key Card Tool 4.7.2 TDP 2.06 System Security Specification.pdf does not address this requirement.	v1: 6.4.2 Voting systems shall deploy protection against the many forms of threats to which they may be exposed such as file and macro viruses, worms, Trojan horses, and logic bombs. Vendors shall develop and document the procedures to be followed to ensure that such protection is maintained in a current status.
48	Doc Disc	PCS TDP	PCS 2.2.1 TDP 2.03 System Functionality Description.pdf states the OS is "NT or equivalent." Specific operating systems, version and service packs must be declared as part of the system. Also cannot find this information in PCS 2.2.1 TDP 2.08 System Operations Procedures.pdf	v1: 2.2.5.3 COTS General Purpose Computer System Requirements

#	Type	Location	Issue Description	Guideline
			or PCS 2.2.1 TDP 2.04 System Hardware Specification.pdf	
49	Doc Disc	PCS TDP	Unable to find any documentation stating a "description of recommended policies for" access control of PCS roles/duties such as Administrator, Supervisor, Security Administrator, Scanner technician, Adjudicator.	v1:6.2.1 Although the jurisdiction in which the voting system is operated is responsible for determining the access policies for each election, the vendor shall provide a description of recommended policies for a) Software access controls etc.
50	Doc Disc	PCS 2.2.1 TDP 2.06 System Security Specifications.pdf	PCS 2.2.1 TDP 2.06 System Security Specifications.pdf does not address this set of requirements. Since PCS is specifically designed to handle ballots, ballot counting, counting operations and reporting data in a central count location, these requirements must be addressed.	v1: 6.3.2 Vendors shall develop and document in detailed measures to be taken in a central counting environment. These measures shall include physical and procedural controls related to the Handling of ballot boxes Preparing of ballots for counting Counting operations and Reporting data
51	Doc Disc	GEMS 1.21.1 TDP 2.06 System Security Specifications.pdf	GEMS 1.21.1 TDP 2.06 System Security Specifications.pdf does not address I:6.4.2. System utilizes public telecommunications systems so this requirement is applicable.	v1: 6.4.2 Voting systems shall deploy protection against the many forms of threats to which they may be exposed such as file and macro viruses, worms, Trojan horses, and logic bombs. Vendors shall develop and document the procedures to be followed to ensure that such protection is maintained in a current status.
52	Doc Disc	GEMS TDP	Unable to find where II:6.4.2.a-g are addressed for GEMS and/or voting devices that utilize telecommunications	v1: 6.4.2.a Identification of new threats and their impact
53	Doc Disc	BallotStation 4.7.3 System Administrators Guide, Rev 1.0, 06/25/08 BallotStation 4.7.3 Users Guide, Rev 2.0, 07/09/08	The documentation does not have any reference to the error message when a memory card has reached its maximum capacity for data storage, for the Ballot Station application. The discrepancy remains open because the vendor's error messages still do not address the concern.	VSS Vol.2; 2.8.5.b The vendor shall provide documentation of system operating procedures that meet the following requirements: b. Provides procedures that clearly enable the operator to access the control flow of system functions (as evidenced by system
54	Doc Disc	PCS 2.2.1 Users Guide, Rev 1.0, 06/23/08 PCS 2.2.1 System Administrators Guide, Rev 1.0, 06/24/08	The documentation does not specify when and/or how the message that describes an 'out-of-date' workspace will appear, or how its generated in the PCS application.	VSS Vol.2; 2.8.5.b The vendor shall provide documentation of system operating procedures that meet the following requirements: b. Provides procedures that clearly enable the operator to access the control flow of system functions (as evidenced by system
55	Doc Disc	TSX TDP	While there are no specific requirements for wireless transmissions in the VSS, such transmission is covered by other telecommunications requirements as stated in I:5.1.1. The TSX units have IrDA ports, and there needs to be documentation covering these transmissions.	vol2:2.4 The vendor shall expand on the system overview by providing detailed specifications of the hardware components of the system, including specifications of hardware used to support the telecommunications capabilities of the system, if applicable.
56	Doc Disc	ASSURE 1.2 TDP	The TDP does not contain a detailed overview of communications related to telecommunications and the use of public networks to address this VSS requirement. In so far as any networking capability might relate to a telecommunications capability, a detailed overview of all networking in its broadest sense needs to be submitted for certification.	vol2:2.4 The vendor shall expand on the system overview by providing detailed specifications of the hardware components of the system, including specifications of hardware used to support the telecommunications capabilities of

#	Type	Location	Issue Description	Guideline
				the system, if applicable.
57	Doc Disc	OS-PC AccuVote-OS Precinct Count 1.96.11 TDP 2.14 Telecommunications.pdf OSx: AccuVote-OSX 1.2.1 TDP 2.14 Telecommunications.pdf TS, TSx: BallotStation 4.7.3 TDP 2.14 Telecommunications.pdf, AccuVote-TSX with AVPM TDP 2.14 Telecommunications.pdf	Numerous documents claim that the system does not utilize a WAN. OS-PC AccuVote-OS Precinct Count 1.96.11 TDP 2.14 Telecommunications.pdf OSx: AccuVote-OSX 1.2.1 TDP 2.14 Telecommunications.pdf TS, TSx: BallotStation 4.7.3 TDP 2.14 Telecommunications.pdf, AccuVote-TSX with AVPM TDP 2.14 Telecommunications.pdf Vendor needs to provide further explanations as to why the use of a modem to transport information over public telephone systems is not within the given definition within the VSS requirement.	vol1:5.1 A wide area network (WAN) public telecommunications component consists of the hardware and software to transport information, over shared, public (i.e., commercial or governmental) circuitry, or among private systems. ... vol1:5.2.6 For WANs using public telecommunications, boundary definition and implementation shall meet the following requirements. [a] ... b) ..., c) ....]
58	Doc Disc	AccuView Printer Module 3.0 Build Process Build Configuration Guide Rev 16	A number of COTS programs listed in the documentation can no longer be acquired directly from the manufacturers.	v2; 2.5.3 :The vendor shall also include a certification that procured software items were obtained directly from the manufacturer or a licensed dealer or distributor.
59	Doc Disc	Windows CE 4.10 Build Process Revision 5.0 September 30, 2008	AVValidator.XML file is not being loaded as part of the build and installation process in the WinCE4.10 Build Process.	v2; 2.6.4: The vendor shall provide a detailed description of the system capabilities and mandatory procedures for purchasing jurisdictions to ensure secure software (including firmware) installation
60	Doc Disc	Windows CE 4.10 Build Process Revision 5.0 September 30, 2008 Windows CE 3.0 Build Process Revision 5.0 September 30, 2008 WinCE 5.0 Build Process Revision 8.0 September 30, 2008	No mention in the documentation where to place the makeavinstall.exe file. During the trusted build, iBeta placed this in the release directory per witness instruction.	v2; 2.6.4: The vendor shall provide a detailed description of the system capabilities and mandatory procedures for purchasing jurisdictions to ensure secure software (including firmware) installation

Appendix C - Source Code Review

The Appendix C, delivered separately, contains the iBeta proprietary source code review criteria for the Premier coding languages:

       8051 Assembler Review Criteria v2.0
       ABasic Review Criterion Version 2.0
       C and C++ Review Criteria Version 5.0
       C# Review Criteria v4.0
       VB.Net Review Criteria Version 3.0
       Visual Basic Review Criteria v3.0
       Z80 Assembler Review Criteria Version 2.0

This appendix also contains the iBeta letter to the EAC with the full results of the documented source code review.

Appendix D - Environmental Test Review

The Appendix D, delivered separately, contains the iBeta letter to the EAC with the full results of the documented environmental test review.

Appendix E - PCA TDP Document Review

The Appendix E, delivered separately, contains the iBeta letter to the EAC with the full results of the PCA TDP document review.

Appendix F - EAC Letter on Source Code Review

http://www.eac.gov/program-areas/voting-systems/voting-system-certification/correspondence -- EAC letter to iBeta Quality Manager on reuse of testing

Appendix G - EAC Letter on Environmental and PCA TDP

http://www.eac.gov/program-areas/voting-systems/voting-system-certification/correspondence -- EAC letter to iBeta on reuse of prior testing

Appendix H - Data Accuracy Review

The Appendix H, delivered separately, contains the iBeta letter to the EAC with the full results of the data accuracy testing review.

Appendix I - EAC Letter on Data Accuracy Test Results Reuse

http://www.eac.gov/program-areas/voting-systems/voting-system-certification/correspondence -- EAC letter to iBeta on reuse of prior testing conducted by SysTest Laboratories