

**2007-CDOS-HAR-001-0404**

# **HART INTERCIVIC**

## **PROJECT OVERVIEW**

**COPY**

**2007-CDOS-HAR-001-0404  
PROJECT OVERVIEW BINDER “A.2”**

**TABLE OF CONTENTS**

# **2007-CDOS-HAR-001-0404 PROJECT OVERVIEW BINDER “A.2”**

## **TABLE OF CONTENTS**

- 1. INTRODUCTION**
  - a. Introduction Statement**
  - b. Detailed Test Summary**
- 2. COMPONENTS**
  - a. Components of the Hart voting system package**
- 3. RECOMMENDATION**
  - a. Recommendation Overview**
  - b. Voting system application recommendation**
  - c. Bar charts of residual failures**
- 4. RESTRICTIONS**
  - a. Restrictions for use of the voting system**
- 5. CONDITIONS**
  - a. Conditions for use of the voting system**
- 6. COMMENTS**
  - a. Comments from testing board members**
- 7. AUDIT REPORTS**
  - a. Testing Board response to Audit report**
  - b. Audit Report**
- 8. ADDITIONAL CORRESPONDENCE – Located in Binder “B” through Binder “E”**

**2007-CDOS-HAR-001-0404  
PROJECT OVERVIEW BINDER “A.2”**

**INTRODUCTION**



## **Introduction**

On April 4, 2007, Hart Intercivic approached the Colorado Secretary of State's Office with an application to certify a voting system. The application was accepted by the Voting Systems Certification Program Testing Board (Testing Board). The system was assigned certification number: 2007-CDOS-HAR-001-0404.

The voting system is known by its federal certification name as "System 6.0" Federal certification is to the 2002VSS standards, and was obtained on March 6<sup>th</sup>, 2006 (NASED#: N-1-04-22-22-004).

The testing board proceeded to evaluate the Hart voting system during the time period of April 4<sup>th</sup> – December 1<sup>st</sup>. All findings are documented within the binders A – 30, as well as addendum binders 2.1 – 8.1, 13.1, 16.1 – 25.1, 27.1, and 28.1.

The Project Overview Binders (Binders "A", "A.2", and "B" – "E") provides an overview of the findings of the project, and the following additional information:

- Introduction
- System Components
- Recommendation to the Secretary of State
- Restrictions on the use of the voting system suggested by the Testing Board
- Conditions to the Recommendation suggested by the Testing Board
- Additional Comments by the Testing Board
- Independent Audit Reports
- Miscellaneous Correspondence of importance

During the process of certifying the system, the Testing Board adhered to the procedures outlined by the Voting System Program procedures document. The certification process was led by Tim Bishop, with Michael Chadwell and Jerome Lovato providing the primary cross evaluation. Additional cross check and documentation verification was conducted by Danny Casias with additional coordination by the Program Manager – John Gardner with assistance from Michael Chadwell as necessary.

The testing board evaluated the voting system in accordance with the requirements set forth in Secretary of State Rule 45, as well as applicable elements contained within the laws of the Help America Vote Act, Colorado Revised Statute, multiple sections of Title 1, and Secretary of State Rules as appropriate. All testing results and output which includes extensive video documentation of the evaluation process have been archived and well preserved in accordance with the Voting Systems Program procedures document.

Through the evaluation, the testing board identified a variety of deficiencies within the system which include functionality, security, auditability and documentation requirements. The following sections will address these deficiencies as either a restriction for use (preventing recommendation by the testing board), or a condition for use (allowing the system to be recommended provided conditional elements are adhered to). Restrictions are identified in a one-to-one value. One identified restriction = one failure on the Detail Test Summary. Conditional elements represent a one-to-many value. The execution of a single condition

placed on the use of the system in many cases will address multiple failures as the testing board often experienced failures that exhibited a “daisy chain” effect. One high level failure would trigger many follow up test scenarios. Refer to the **Comments** section of this binder for additional comments on this topic.



## Detail Test Summary

The testing board executed the testing process for the Hart voting system in the manner prescribed by Rule 45, and the detailed procedures document provided on the Voting Systems Certification Program website (<http://www.elections.colorado.gov/DDefault.aspx?tid=501>).

The outcome of the process involved over 700 functional test evaluations, 5286 detailed line items for document review, and over 90 supplemental tests comprising the sections for application review, demonstration and work on completing the trusted build. The documentation comprised of this test work is evident in over 50 binders generated by the testing board, a multitude of boxes containing evidence generated from devices, ballots, reports, and other findings. In addition to this evidence, over 200 DVD records exist documenting the process of the testing board.

Below is the summary report of test status generated by the testing board regarding the Hart Voting System evaluation:

Hart						
	# Requirements	# Passed	# Failed	Binder Status		% Passed
Phase I - Application	22	20	2	signed		90.91%
Phase II - Doc. Review	5286	3964	1322	signed		74.99%
Phase III - Demo	54	54	0	signed		100.00%
Phase III - Trusted Build	20	16	4	signed		80.00%
Phase III - Functional Test (overall)	698	475	223		100.00%	68.05%
Security	139	119	20			85.61%
System Process	339	215	124			63.42%
Election (pre, ED and post)	220	141	79			64.09%
Independent Audit	1674	1674		Review of Test Board work.		100.00%
Phase IV - Certification Doc.	n/a	n/a	n/a	n/a	n/a	
Phase V - Qualification Report	n/a	n/a	n/a	n/a	n/a	

**Requirements Status for Colorado Certification of Hart Voting System**

Section Category	Binder #	Category	Seq	Total # of Tests to complete	Status:	DRE	PCOS	CCOS	EMS	Remaining to complete
<b>Section "A" - Pre Testing</b>	1	Application	aa	22	Pass	n/a	n/a	n/a	15	0
					Pass Conditional	n/a	n/a	n/a	5	
					Suspend	n/a	n/a	n/a		
					Fail	n/a	n/a	n/a	2	
					Not applicable	n/a	n/a	n/a		
	2-6	Documentation Review	ab	5286	Pass	384	326	32	82	0
					Pass Conditional					
					Suspend					
					Fail	90	100	327	805	
					Not applicable	407	455	522	1756	
	7	Demonstration	ac	54	Pass	13	13	12	14	0
					Pass Conditional	1		1		
					Suspend					
					Fail					
					Not applicable					
	8	Trusted Build	ad	20	Pass	2	2	4	4	0
					Pass Conditional					
					Suspend					
					Fail	2	2			
					Not applicable	1	1	1	1	
9-12	Source Code Review	ae	0	Not applicable	n/a	n/a	n/a	n/a	0	

**Requirements Status for Colorado Certification of Hart Voting System**

Section Category	Binder #	Category	Seq	Total # of Tests to complete	Status:	DRE	PCOS	CCOS	EMS	Remaining to complete
<b>Section "B" - Security Testing</b>	13	System Access	ba	36	Pass	6	6	5	12	0
					Pass Conditional					
					Suspend					
					Fail				3	
					Not applicable	1	1	1	1	
	14	Operating System Security	bb	20	Pass				1	0
					Pass Conditional					
					Suspend					
					Fail				1	
					Not applicable	9			9	
	15	Database Security	bc	24	Not applicable	6	6	6	6	0
	16	Removable Media	bd	13	Pass	1	1	1	1	0
					Pass Conditional					
					Suspend					
					Fail				1	
					Not applicable	2	2	2	2	
	17	Networking and Telecommunications	be	46	Pass	2	4	2	1	0
					Pass Conditional	1		2	3	
					Suspend					
					Fail	8	1		6	
Not applicable					1	7	7	1		

**Requirements Status for Colorado Certification of Hart Voting System**

Section Category	Binder #	Category	Seq	Total # of Tests to complete	Status:	DRE	PCOS	CCOS	EMS	Remaining to complete
<b>Section "C" - System Testing</b>	18	System	ca	47	Pass	8	6		16	0
					Pass Conditional					
					Suspend					
					Fail	1	2		12	
					Not applicable				2	
	18	System (central count)	cb	11	Pass	n/a	n/a	6	n/a	0
					Pass Conditional	n/a	n/a		n/a	
					Suspend	n/a	n/a		n/a	
					Fail	n/a	n/a	5	n/a	
					Not applicable	n/a	n/a		n/a	
	19-20	Ballot Process	cc	152	Pass	20	33	16	16	0
					Pass Conditional	1				
					Suspend					
					Fail	3	11	19	13	
					Not applicable	1	2	11	6	
	21	Performance	cd	24	Pass	1	1	1	4	0
					Pass Conditional	6				
					Suspend					
					Fail		4	4	2	
					Not applicable	1				
	21	DRE Processing	ce	24	Pass	19	n/a	n/a	n/a	0
					Pass Conditional		n/a	n/a	n/a	
					Suspend		n/a	n/a	n/a	
					Fail	2	n/a	n/a	n/a	
					Not applicable	3	n/a	n/a	n/a	
	22	Audits	cf	29	Pass	4	1	2		0
					Pass Conditional		1			
					Suspend					
Fail					3	5	5	8		
Not applicable										
22	Reports	cg	52	Pass	3	4		6	0	
				Pass Conditional				1		
				Suspend						
				Fail	6	7	9	3		
				Not applicable	4	3	3	3		

**Requirements Status for Colorado Certification of Hart Voting System**

Section Category	Binder #	Category	Seq	Total # of Tests to complete	Status:	DRE	PCOS	CCOS	EMS	Remaining to complete
<b>Section "D" - Election Day Tests</b>	23	Hardware Diagnostics Testing	da	8	Pass					0
					Pass Conditional	1				
					Suspend					
					Fail	1	1	1		
					Not applicable		1	1	2	
	23	Voting	db	65	Pass	8	5	7	2	0
					Pass Conditional					
					Suspend					
					Fail	3	15	14	5	
					Not applicable	6				
	24	Multi-Page Ballots	dc	6	Pass					0
					Pass Conditional					
					Suspend					
					Fail		2	1	1	
					Not applicable	2				
	24	Multiple Languages	dd	4	Pass	1	1	1	1	0
					Pass Conditional					
					Suspend					
					Fail					
					Not applicable					
	24	Provisional	de	25	Pass		1	1		0
					Pass Conditional					
					Suspend					
					Fail	7	4	2	5	
					Not applicable		1	3	1	
	25	V-VPAT	df	28	Pass	22	n/a	n/a	n/a	0
					Pass Conditional	2	n/a	n/a	n/a	
					Suspend		n/a	n/a	n/a	
Fail					3	n/a	n/a	n/a		
Not applicable					1	n/a	n/a	n/a		
25	Accessibility	dg	41	Pass	31	n/a	n/a	n/a	0	
				Pass Conditional		n/a	n/a	n/a		
				Suspend		n/a	n/a	n/a		
				Fail	5	n/a	n/a	n/a		
				Not applicable	5	n/a	n/a	n/a		
26	Closing Polls	dh	30	Pass	11	11	n/a	n/a	0	
				Pass Conditional			n/a	n/a		
				Suspend			n/a	n/a		
				Fail	4	4	n/a	n/a		
				Not applicable			n/a	n/a		

**Requirements Status for Colorado Certification of Hart Voting System**

Section Category	Binder #	Category	Seq	Total # of Tests to complete	Status:	DRE	PCOS	CCOS	EMS	Remaining to complete
<b>Section "E" - Post Election</b>	27	Post Election Audit	ea	4	Pass	1	1	1	1	0
					Pass Conditional					
					Suspend					
					Fail					
					Not applicable					
	27	Recount	eb	8	Pass	1	2	3	1	0
					Pass Conditional	1				
					Suspend					
					Fail					
					Not applicable					
	27	Recount (central count)	ec	1	Pass	n/a	n/a		n/a	0
					Pass Conditional	n/a	n/a		n/a	
					Suspend	n/a	n/a		n/a	
					Fail	n/a	n/a	1	n/a	
					Not applicable	n/a	n/a		n/a	

**Archive Storage Boxes for the Hart Voting System Certification Process:**



**Backup Binders documenting the Hart System Certification Process** (original binders moved to archive storage upon completion of process):



**2007-CDOS-HAR-001-0404  
PROJECT OVERVIEW BINDER “A.2”**

**COMPONENTS**

**STATE OF COLORADO**  
**Department of State**

1700 Broadway, Suite 270  
Denver, CO 80290



**Mike Coffman**  
**Secretary of State**

**Holly Lowder**  
**Director, Elections**

**Components**

As submitted on April 4, 2007, the following components comprise the requested voting system package from Hart:

<b>Component Name</b>	<b>System Function</b>	<b>Version Number</b>
System 6.0 Software (EMS)	Software Application which includes: Boss Tally Rally Servo eCM Manager	6.0 4.2.13 4.2.8 2.2.4 4.1.6 1.1.7
Ballot Now	Software Application for Central Count Scanners. Which includes the following three scanners: Kodak i800 Series Kodak i600 Series Kodak i200 Series	3.2.4
eScan	Precinct Optical Scanner	1.1.6
eSlate (with and without audio – DAU)	Direct Record Electronic Device which also includes: JBC Units VBO Units	4.0.19 4.0.19 1.7.5

Photographs and additional details on each component can be found under test # AA6-P1-605.

**2007-CDOS-HAR-001-0404  
PROJECT OVERVIEW BINDER “A.2”**

**RECOMMENDATION**



**Recommendation Overview**

The approach of the testing board regarding a recommendation is absolute. Any one item outstanding in the restrictions section of the binder (no “conditional use” option discoverable by the testing board) will trigger a “N” value on the **Recommendation** table.

Therefore, for quick understanding of the overall outstanding deficiencies with the system, and to provide a summary of reasons for the “Y” or “N” value in the **Recommendation** table.

The following table provides a high level summary statement of findings by the testing board. These items constitute a summary of the findings in the **Restrictions** section of the project overview binder.

Component (details in the components section)	Recommended to be Certified?	Reason
Software (See Components)		<ul style="list-style-type: none"> <li>• Failure to provide required State Documentation.</li> <li>• Failure to prove Federal Testing was conducted.</li> <li>• Failure to process ballots with more than one page.</li> <li>• Failed to count ballots correctly. (When used with eScan and BallotNow only.)</li> <li>• Failed to meet Colorado Requirements for tabulating results.</li> <li>• Failure to prevent and detect normal operator changes within system (when used with eScan and Ballot Now only).</li> <li>• Failure to provide auditable data to detect security violations (when used with eScan and Ballot Now only).</li> <li>• Failure to operate in a secured, hardened, protected database environment (when used with eScan and Ballot Now only).</li> </ul>
Precinct Scanner (eScan)	No	<ul style="list-style-type: none"> <li>• Failed to count ballots correctly.</li> <li>• Failed to consistently scan ballots and generate consistent results.</li> <li>• Failure to provide required State Documentation.</li> <li>• Failure to process ballots with more than one page.</li> <li>• Failure to conduct State Requirements for Pre and Post Election Testing.</li> <li>• Failure to accurately process folded ballots.</li> <li>• Failure to provide auditable data to detect security violations.</li> </ul>
Central Count Scanner (Ballot Now)	No	<ul style="list-style-type: none"> <li>• Failed to count ballots correctly.</li> <li>• Failure to provide required State Documentation.</li> <li>• Failed to consistently scan ballots and generate consistent results.</li> <li>• Failure to process ballots with more than one page.</li> <li>• Failure to conduct State Requirements for Pre and Post Election Testing.</li> <li>• Failure to accurately process folded ballots.</li> <li>• Failure to provide auditable data to detect security violations.</li> </ul>
DRE (eSlate)	No	<ul style="list-style-type: none"> <li>• Failure to conduct State Requirements for Pre and Post Election Testing.</li> <li>• Failure to provide required State Documentation</li> <li>• Paper Record not accessible to blind voters.</li> <li>• Failure to meet state requirements for Accessibility</li> </ul>



**Hart Recommendation for voting system application:**

**2007-CDOS-HAR-001-0404**

<u>Component</u>	<u>Version</u>	Binary Assessment (Y/N, with conditionals)				<u>Testing Board Recommendation</u>
		<u>Accuracy</u>	<u>Security</u>	<u>Accessibility</u>	<u>Compliance</u>	
System 6.0	See Components	Y <sup>3,4</sup>	Y <sup>3,4</sup>	N/A	N <sup>1,2</sup>	<b>N</b>
BallotNow	3.2.4	N	N	N	N <sup>1,2</sup>	<b>N</b>
eSlate & Components	4.0.19 / 1.7.5	Y <sup>3</sup>	Y <sup>3</sup>	N	N <sup>2</sup>	<b>N</b>
eScan	1.1.6	N	N	N	N <sup>2</sup>	<b>N</b>

<sup>1</sup> Colorado Revised Statutes Title 1, Article 5, Section 6 (1-5-608.5) prohibits allowing certification of voting equipment by the Secretary of State if it has not been successfully qualified by a recognized ITA. Additionally, Rule 45.5.1.3 requires voting systems to be compliant with federal requirements.

<sup>2</sup> Missing/Insufficient state documentation pursuant to Colorado Secretary of State Rule 45.

<sup>3</sup> Provided jurisdictions follow additional procedural steps outlined in the **Conditions** section to mitigate the deficiencies of the system as evaluated. Should conditions not be applied or adhered to as indicated in this binder, the testing board would reject the system and modify the value to a “N.” This is specifically addressed in the test board comments section of this binder.

<sup>4</sup> Provided eScan and BallotNow are not used with the system, otherwise “N”.

**Definitions:**

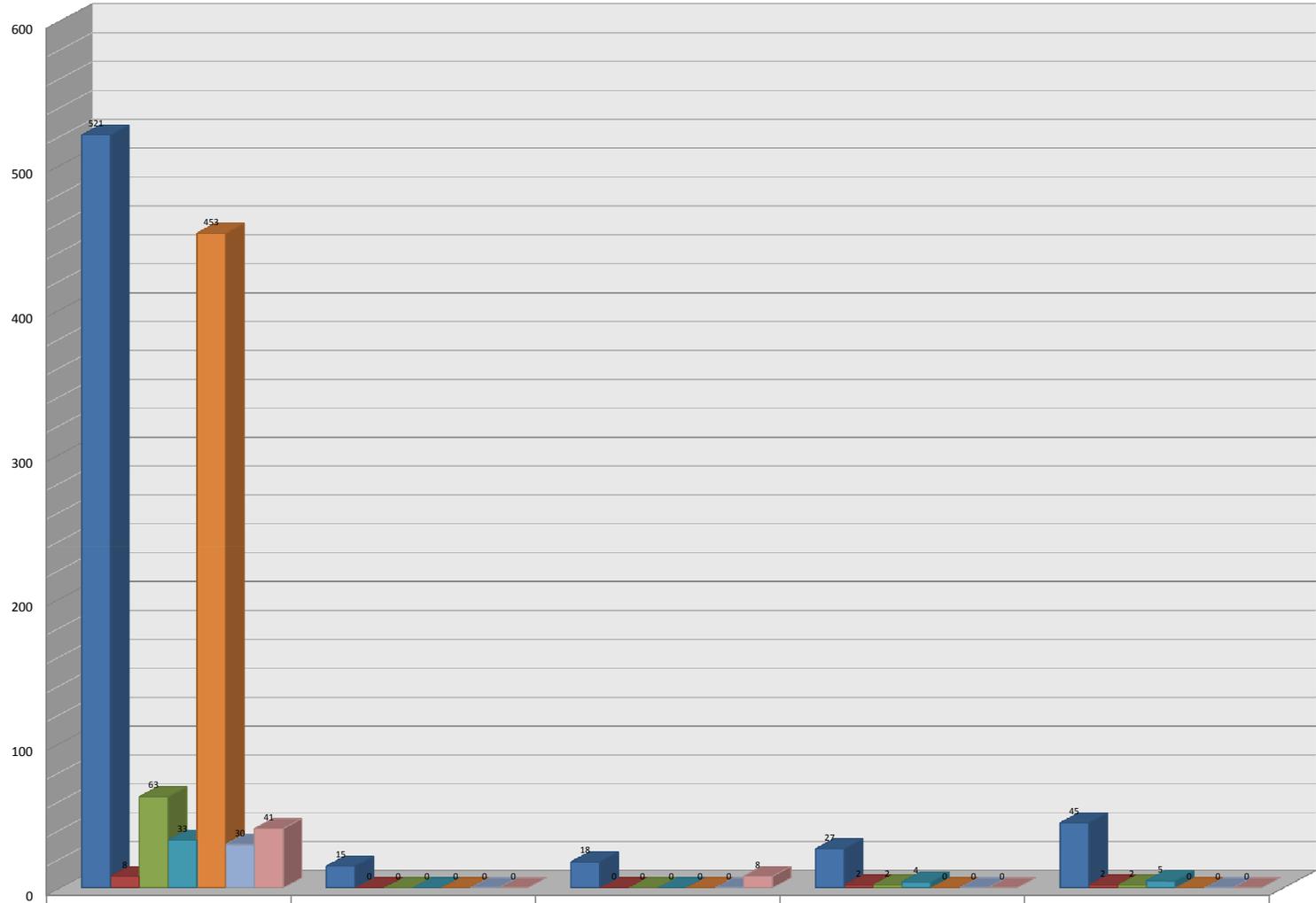
**Accuracy** – correctly reading, displaying, tabulating and reporting votes. (Functional, or Performance)

**Security** – vote data is protected and maintains integrity throughout system processing. (Audit, Security, or Telecommunications)

**Accessibility** – voter systems have requisite usability and reliability. (Functional, Accessibility, or Physical Design)

**Compliance** – systems conform to federal and state requirements for certification and/or documentation. (Documentation)

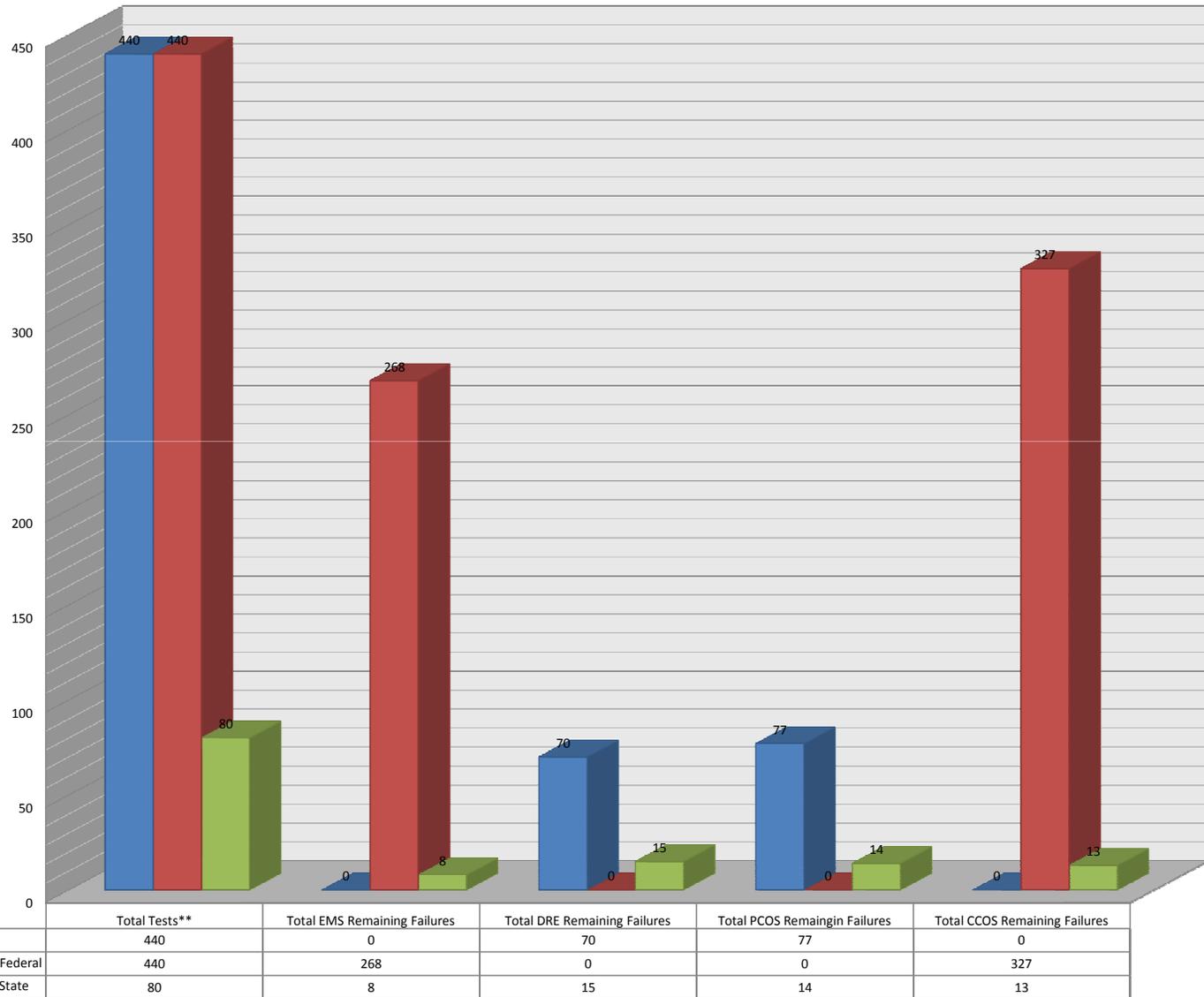
### Hart Functional Failure Status by Category



	Total Tests	Total EMS Remaining Failures*	Total DRE Remaining Failures	Total PCOS Remaining Failures	Total CCOS Remaining Failures
Functional Requirements	521	15	18	27	45
Performance Levels	8	0	0	2	2
Physical design	63	0	0	2	2
Audit Capacity	33	0	0	4	5
Security	453	0	0	0	0
Telecommunications	30	0	0	0	0
Accessibility	41	0	8	0	0

\* EMS failures tied directly to use of the system with eScan and Ballot Now. Without these two components, the items would be passable with conditions.

### Hart Documentation Failure Status by Category



\* Incorrectly tested means the ITA either reported that a required item was not tested, or a required item was tested incorrectly for the device type.

\*\* Total tests has N/A items removed for chart scale.

**2007-CDOS-HAR-001-0404  
PROJECT OVERVIEW BINDER “A.2”**

**RESTRICTIONS**



The Testing Board has identified the following items as deficient in the voting system, requiring restriction for use of the voting system components based on the review and testing of the voting system for compliance with state requirements:

**Software Restrictions: ( System 6.0 )**

**See components**

**1) Functional requirements**

The Test Board has determined that the scanners used by the Hart system 6.0 do not consistently detect, categorize, and count markings placed on the paper ballots by voter's to indicate the voter's choice.

**Rule**

**Text**

1-5-611

No nonpunch card electronic voting system shall be purchased, leased, or used unless it fulfills the following requirements

(b) It permits each elector to write in the names of eligible candidates not appearing on the printed ballot, to vote for as many candidates for an office as there are vacancies for which the elector is entitled to vote, and to vote for or against any ballot issue upon which the elector is entitled to vote.

(c) It rejects any vote for an office or on a ballot issue if the number of votes exceeds the number the elector is entitled to cast.

1-5-615

No electronic or electromechanical voting system shall be certified by the secretary of state unless such system:

(b) Permits each elector to vote for all offices for which the elector is lawfully entitled to vote and no others, to vote for as many candidates for an office as the elector is entitled to vote for, and to vote for or against any ballot question or ballot issue on which the elector is entitled to vote.

1-5-615

No electronic or electromechanical voting system shall be certified by the secretary of state unless such system:

1 (f) Does not record a vote for any office, ballot question, or ballot issue that is overvoted on a ballot cast by an elector.

(g) For electronic and electromechanical voting systems using ballot cards, accepts an overvoted or undervoted ballot if the elector chooses to cast the ballot, but it does not record a vote for any office, ballot question, or ballot issue that has been overvoted.

(l) Counts votes correctly.

(m) Can tabulate the total number of votes for each candidate for each office and the total number of votes for and against each ballot question and ballot issue for the polling place.

1-7-508

Votes cast for an office to be filled or a ballot question or ballot issue to be decided shall not be counted if a voter marks more names than there are persons to be elected to an office or if for any reason it is impossible to determine the elector's choice of candidate or vote concerning the ballot question or ballot issue. A defective or an incomplete mark on any ballot in a proper place shall be counted if no other mark is on the ballot indicating an intention to vote for some other candidate or ballot question or ballot issue.

## See components

(Functional requirements continued.)

	Rule	Text
	27.2	Multiple Page Ballots. In any election where a multiple page printed ballot is used, a voter must vote and return all pages of the ballot at the same time. Any voter who has returned at least one page of a multiple page printed ballot will be considered to have voted. Any additional page returned at a later time shall not be counted but shall be appropriately marked, set aside, and preserved as other election materials in accordance with section 1-7-802, C.R.S.
	45.6.2.2.1 45.6.2.3.15	Demonstrate the ability for a user to generate and maintain a maximum of 10 different counting methods – the minimum is three and they are Absentee, Polling Place (or vote center) and Provisional – most counties shall have early voting as well as this.
	45.6.2.3.14	Ballots shall include the following minimum race situations to simulate and test “real world” situations in the State of Colorado: In a general election, allow a voter to vote for any candidate for any office, in the number of positions allowed for the office, and to select any measure on the ballot that the candidate is allowed to vote in, regardless of party.
	45.6.2.3.3	Each voting system shall be tested and examined by conducting at least three mock elections which shall include voting scenarios that exist within a primary election, a coordinated election, and a recall election.
	45.6.2.3.6	The voting system provider is required to produce ballots in quantities identified below for each of the two elections. Enough ballots need to be created to conduct the testing of the voting system as defined in this rule. One complete set of ballots will be tested in each of the applicable counter types (or groups): <ul style="list-style-type: none"><li>(a) Poll Place or Vote Center - ballots are flat – no score marks.</li><li>(b) Early Voting – ballots are flat – no score marks.</li><li>(c) Mail-in – ballots are scored and folded to fit in standard Colorado Absentee Mailing Envelopes.</li></ul>
<b>2) Documentation requirements</b>	1-5-601.5	<b>Compliance with federal requirements.</b> All voting systems and voting equipment offered for sale on or after May 28, 2004, shall meet the voting systems standards that were promulgated in 2002 by the federal election commission and that may thereafter be promulgated by the federal election assistance commission. Subject to section 1-5-608.2, nothing in this section shall be construed to require any political subdivision to replace a voting system that is in use prior to May 28, 2004.
	45.5.1.1	All voting systems shall meet the voting systems standards pursuant to section 1-5-601.5, C.R.S., and Secretary of State Rule 37.3.

## See components

(Documentation requirements continued.)

Documentation was not provided by the voting system vendor to allow testing board to evaluate this requirement.

Rule	Text
45.4.2	<p>A voting system provider that submits a voting system for certification shall complete the Secretary of State's "Application for Certification of Voting System". Which contains all of the following documentation:</p> <ul style="list-style-type: none"><li>• Level, location and programming of audit trail information.</li><li>• COTS Hardware, Software and services used for Telecommunications.</li><li>• Process for Battery Charging.</li><li>• Basis for useful life estimate.</li></ul>
45.5.2.2.3	<p>The voting system provider shall publish and specify processing standards for each component of the voting system as part of the documentation required for certification.</p>
45.5.2.4.2	<p>All VSTL qualification reports, test logs, and technical data packages shall be evaluated to determine if the voting system meets the requirements of this rule and have completed the applicable federal certification requirements at the time of State testing. Failure to provide such documentation of independent testing will result in the voting system application being rejected.</p> <p>(a) The voting system provider shall execute and submit any necessary releases for the applicable VSTL and/or EAC to discuss any and all procedures and findings relevant to the voting system submitted for certification with the Secretary of State's office. The voting system provider shall provide a copy of the same to the Secretary of State's office.</p>
45.5.2.5.2	<p>The voting systems shall include detailed documentation as to the level, location, and programming of audit trail information throughout the system. The audit information shall apply to:</p> <p>(a) Operating Systems (workstation, server, and/or DRE);</p>
45.5.2.7.10	<p>Voting systems providers shall document how they plan to monitor and respond to known threats to which their voting systems are vulnerable. This documentation shall provide a detailed description, including scheduling information, of the procedures the voting system provider will use to:</p> <p>(a) Monitor threats, such as through the review of assessments, advisories, and alerts for COTS components;</p> <p>(b) Evaluate the threats and, if any, proposed responses.</p> <p>(c) Develop responsive updates to the system and/or corrective procedures; and</p> <p>(d) As part of certification requirements of the proposed system, provide assistance to customers, either directly or through detailed written procedures, how to update their systems and/or to implement the corrective procedures within the timeframe established by the Secretary of State.</p>

## Precinct Count Scanner Restrictions:

### eScan 1.1.6

#### 1) Functional requirements

The Test Board has determined that the scanners used by the Hart system 6.0 do not consistently detect, categorize, and count markings placed on the ballots by voter's to indicate the voter's choice.

### Rule

1-5-615

### Text

No electronic or electromechanical voting system shall be certified by the secretary of state unless such system:

(l) Counts votes correctly.

(g) For electronic and electromechanical voting systems using ballot cards, accepts an overvoted or undervoted ballot if the elector chooses to cast the ballot, but it does not record a vote for any office, ballot question, or ballot issue that has been overvoted.

(m) Can tabulate the total number of votes for each candidate for each office and the total number of votes for and against each ballot question and ballot issue for the polling place.

27.2

Multiple Page Ballots. In any election where a multiple page printed ballot is used, a voter must vote and return all pages of the ballot at the same time. Any voter who has returned at least one page of a multiple page printed ballot will be considered to have voted. Any additional page returned at a later time shall not be counted but shall be appropriately marked, set aside, and preserved as other election materials in accordance with section 1-7-802, C.R.S.

37.1.2

Voting systems (including optical scanning voting systems or direct recording electronic systems) certified by the secretary of state and acquired, purchased or leased by counties pursuant to state law shall:

(d) Ensure that any notification required under this paragraph preserves the privacy of the vote and the confidentiality of the ballot.

45.5.2.1.2

The Voting system shall provide for appropriately authorized operators to conduct hardware and diagnostics testing as required herein;

11.5.2.1

The county clerk and recorder shall commence the Hardware Diagnostic Test prior to the election and allow time for each electronic voting device within the county to be tested. Each device being used in the election, including units identified as spare or backup units, shall be tested to verify that mechanical components are working correctly. This test shall include, but not be limited to, the following tests:

(a) All input and output devices;

(b) Communications ports;

(c) System printers;

(d) System modems when applicable;

(e) System Screen displays;

(f) Boot performance and initializations;

(g) Firmware loads;

(h) Software loads;

(i) Confirmation that screen displays are functioning; and

(j) Date, time and calibration of systems.

## eScan 1.1.6

(Functional requirements continued.)

Because of failure with counting ballots, the testing board is unable to determine if error was due to folds on ballots or due to the nature of the machine.

<b>Rule</b>	<b>Text</b>
45.5.2.1.8	The voting system shall include hardware and software to enable the closing of the voting location and disabling acceptance of ballots on all vote tabulation devices to allow for the following: (g) Ability to accommodate a two page ballot (races on four faces) is required.
45.6.2.3.10	Ballots shall be cast and counted in all applicable counter types (or counter groups) as necessary based on the parts included in the voting system. These are at a minimum: Poll Place (or Vote Center), Absentee, Provisional, and Early Voting. Ballots may be run through components 10 or more times depending on components and counter group being tested to achieve a minimum number of ballots cast as follows for each group: (a) Polling Place / OS 1500. (b) Vote Center/ OS 5000 (c) Early Voting / OS 5000. (h) Provisional 5,000
45.6.2.3.14	Ballots shall include the following minimum race situations to simulate and test “real world” situations in the State of Colorado: (e) Allow for programming to accommodate Colorado recall questions as prescribed in Article 12 of Title 1, C.R.S.;
45.6.2.3.3	Each voting system shall be tested and examined by conducting at least three mock elections which shall include voting scenarios that exist within a primary election, a coordinated election, and a recall election.
45.6.2.3.6	The voting system provider is required to produce ballots in quantities identified below for each of the two elections. Enough ballots need to be created to conduct the testing of the voting system as defined in this rule. One complete set of ballots will be tested in each of the applicable counter types (or groups): (c) Mail-in – ballots are scored and folded to fit in standard Colorado Absentee Mailing Envelopes.

## eScan 1.1.6

(Functional requirements continued.)

	<b>Rule</b>	<b>Text</b>
	45.6.2.3.7	All ballots provided shall be blank with no marks on them. The following combinations of ballots are required: (a) Four separate decks of ballots shall be provided consisting of 25 ballots for each precinct/precinct split generated for each election that are flat (1500 minimum combined). At least one deck shall have the General Election data, and at least one shall have the Primary election data as indicated in the instructions for voting system providers; (b) Four separate decks of ballots shall be provided consisting of 25 ballots for each precinct/precinct split generated for each election that are folded (1500 minimum combined). At least one deck shall have the General Election data, and at least one shall have the Primary election data as indicated in the instructions for voting system providers; (c) All ballots provided shall be blank with no marks on them. The following combinations of ballots are required: One separate deck of ballots consisting of 10 ballots for each precinct generated for the Recall election that are flat as indicated in the instructions for vendors.
<b>2) Performance levels</b>	45.6.2.2.1 45.6.2.3.15	Test all ballot reading functions – are they accurate and reliable as described in the requirement - how do scanner(s) responds to smudges, folds, etc; response to valid and invalid or absence of marks.
	45.6.2.3.9	The testing board shall mark a minimum of 300 ballots with marking devices of various color, weight, and consistency to determine accurate counting with a variety of marking devices.
<b>3) Physical and design characteristics</b>	1-5-611	No nonpunch card electronic voting system shall be purchased, leased, or used unless it fulfills the following requirements: (1)(f)(I)If the system uses a voting device: It is suitably designed, of durable construction, and capable of being used safely, efficiently, and accurately in the conduct of elections and the tabulation of votes.
Ballot handling errors: misfeeds (<= 1 per 5000) and corrective action reporting. Device tested outside of acceptable criteria.	45.6.2.2.1 45.6.2.3.15	The system shall stop and inform operator of ballot handling errors such as misfeeds, damaged ballot, and multiple feeds. Also, give corrective measures to remove the ballot, sort is as unreadable (out stack) and gives a way to restart or recount the uncounted ballots. (Misfeeds =< 1 per 5,000).
<b>4) Documentation requirements</b>	45.4.2	A voting system provider that submits a voting system for certification shall complete the Secretary of State’s “Application for Certification of Voting System”. Which contains all of the following documentation: <ul style="list-style-type: none"><li>• Level, location and programming of audit trail information.</li><li>• Process for Battery Charging.</li><li>• Basis for useful life estimate.</li></ul>

## **eScan 1.1.6**

(Documentation requirements continued.)

<b>Rule</b>	<b>Text</b>
45.5.1.2	All voting system software, hardware, and firmware shall meet all requirements of federal law that address accessibility for the voter interface of the voting system. These laws include, but are not necessarily limited to, (a) the Help America Vote Act,
45.5.2.2.3	The voting system provider shall publish and specify processing standards for each component of the voting system as part of the documentation required for certification.
45.5.2.3.2	The voting system shall meet the following environmental controls allowing for storage and operation in the following physical ranges: (a) Operating – Max. 95 Degrees Fahrenheit; Min 50 Degrees Fahrenheit, with max. humidity of 90%, normal or minimum operating humidity of 15%.
45.5.2.3.18	The approach to design shall be unrestricted, and it may incorporate any form or variant of technology that is capable of meeting the requirements of this rule, and other attributes specified herein. The frequency of voting system malfunctions and maintenance requirements shall be reduced to the lowest level consistent with cost constraints. Applicants are required to meet or exceed MIL-HDBK-454; "Standard General As Amended 10/2/07 Page 119 Requirements for Electronic Equipment" that is hereby adopted and incorporated by reference, as a guide in the selection and application of materials and parts only as is relevant to this section.
45.5.2.3.19	All electronic voting devices provided by the voting system provider shall have the capability to continue operations and provide continuous device availability during a period of electrical outage without any loss of election data. (d) The voting system provider shall deliver to the Secretary of State documentation detailing estimated time of operation on battery for each type of optical scanner, ballot imager, DRE, and V-VPAT they provide, assuming continuous use of the devices by voters during an interruption of normal electrical power. (e) The voting system provider shall deliver to the Secretary of State documentation specifying the steps and times required for charging batteries for each type of optical scanner, ballot imager, DRE and V-VPAT they provide.
45.5.2.3.22	The voting system and all associated components shall have an estimated useful life of at least eight (8) years. Voting system provider shall provide documentation of the basis for the estimate.

**eScan 1.1.6**

(Documentation requirements continued.)

**Rule**

45.5.2.7.10

**Text**

Voting systems providers shall document how they plan to monitor and respond to known threats to which their voting systems are vulnerable. This documentation shall provide a detailed description, including scheduling information, of the procedures the voting system provider will use to:  
(a) Monitor threats, such as through the review of assessments, advisories, and alerts for COTS components;  
(b) Evaluate the threats and, if any, proposed responses.  
(c) Develop responsive updates to the system and/or corrective procedures; and  
(d) As part of certification requirements of the proposed system, provide assistance to customers, either directly or through detailed written procedures, how to update their systems and/or to implement the corrective procedures within the timeframe established by the Secretary of State.

**5) Audit Capacity**

1-5-615

No electronic or electromechanical voting system shall be certified by the secretary of state unless such system:  
(1)(p) Saves and produces the records necessary to audit the operation of the electronic or electromechanical voting system, including a permanent paper record with a manual audit capacity.

45.5.2.5.3

The voting system shall track and maintain audit information of the following voting system application events:  
(a) Log on and log off activity.  
(b) Application start and stop.  
(d) Election events – setup, set for election, unset for election, open polls, close polls, end election, upload devices, download devices, create ballots, create precincts, create districts, create poll places (or Vote Centers), initialize devices, backup devices, and voting activity;

**Central Count Scanner Restrictions:**

**Ballot Now 3.2.4**

**Rule**

**Text**

**1) Functional requirements**

10.3

If there is no candidate on the ballot for any particular office, the ballot shall read, “No candidate for this office.”

1-5-611

No nonpunch card electronic voting system shall be purchased, leased, or used unless it fulfills the following requirements:  
(1)(c) It rejects any vote for an office or on a ballot issue if the number of votes exceeds the number the elector is entitled to cast.

## Ballot Now 3.2.4

(Functional requirements continued.)

## Rule

## Text

1-5-615

Electronic and electromechanical voting systems - requirements.

- (1) No electronic or electromechanical voting system shall be certified by the secretary of state unless such system:
- (b) Permits each elector to vote for all offices for which the elector is lawfully entitled to vote and no others, to vote for as many candidates for an office as the elector is entitled to vote for, and to vote for or against any ballot question or ballot issue on which the elector is entitled to vote;
- (c) Permits each elector to verify his or her votes privately and independently before the ballot is cast;
- (f) Does not record a vote for any office, ballot question, or ballot issue that is overvoted on a ballot cast by an elector.
- (g) For electronic and electromechanical voting systems using ballot cards, accepts an overvoted or undervoted ballot if the elector chooses to cast the ballot, but it does not record a vote for any office, ballot question, or ballot issue that has been overvoted;
- (l) Counts votes correctly.
- (m) Can tabulate the total number of votes for each candidate for each office and the total number of votes for and against each ballot question and ballot issue for the polling place;

1-7-508

Votes cast for an office to be filled or a ballot question or ballot issue to be decided shall not be counted if a voter marks more names than there are persons to be elected to an office or if for any reason it is impossible to determine the elector's choice of candidate or vote concerning the ballot question or ballot issue. A defective or an incomplete mark on any ballot in a proper place shall be counted if no other mark is on the ballot indicating an intention to vote for some other candidate or ballot question or ballot issue.

27.2

Multiple Page Ballots. In any election where a multiple page printed ballot is used, a voter must vote and return all pages of the ballot at the same time. Any voter who has returned at least one page of a multiple page printed ballot will be considered to have voted. Any additional page returned at a later time shall not be counted but shall be appropriately marked, set aside, and preserved as other election materials in accordance with section 1-7-802, C.R.S.

## Ballot Now 3.2.4

(Functional requirements continued.)

Rule	Text
27.4.2	<p>Sequence of Resolution Procedures for Central Count Optical</p> <p>(b) Scan Procedures are</p> <p>(2) Official ballots shall be processed through the optical scanner, with sorted overvotes, blank ballots, and write-in ballots viewed and resolved by the resolution board. Only ballots sorted by the machine shall be subject to review by the resolution board. If there are no legally qualified write-in candidates, the write-in sort option shall not be utilized. The number of each duplicated ballot shall be entered on the resolution board log sheet.</p> <p>(d) (1) Optical scan equipment must be set to consistent sensitivity standards for each system type, must be tested prior to the recount, and shall be programmed to sort undervotes for the individual race(s), issue(s) or question(s) being recounted.</p>
37.1.2	<p>Voting systems (including optical scanning voting systems or direct recording electronic systems) certified by the secretary of state and acquired, purchased or leased by counties pursuant to state law shall:</p> <p>(b) provide the voter with the opportunity (in a private and independent manner) to change the ballot or correct any error before the ballot is cast and counted (including the opportunity to correct the error through the issuance of a replacement ballot if the voter was otherwise unable to change the ballot or correct any error).</p> <p>(c) if the voter selects votes for more than one candidate for a single office:</p> <p>(i) notify the voter that the voter has selected more than 1 candidate for a single office on the ballot;</p> <p>(ii) notify the voter before the ballot is cast and counted of the effect of casting multiple votes for the office; and</p> <p>(iii) provide the voter with the opportunity to correct the ballot before the ballot is cast and counted.</p>
45.5.2.1.2	<p>The Voting system shall provide for appropriately authorized operators to conduct hardware and diagnostics testing as required herein;</p>
11.5.2.1	<p>The county clerk and recorder shall commence the Hardware Diagnostic Test prior to the election and allow time for each electronic voting device within the county to be tested. Each device being used in the election, including units identified as spare or backup units, shall be tested to verify that mechanical components are working correctly. This test shall include, but not be limited to, the following tests:</p> <p>(a) All input and output devices;</p> <p>(b) Communications ports;</p> <p>(c) System printers;</p> <p>(d) System modems when applicable;</p> <p>(e) System Screen displays;</p> <p>(f) Boot performance and initializations;</p> <p>(g) Firmware loads;</p> <p>(h) Software loads;</p> <p>(i) Confirmation that screen displays are functioning; and</p> <p>(j) Date, time and calibration of systems.</p>

## Ballot Now 3.2.4

(Functional requirements continued.)

Because of failure with counting ballots, the testing board is unable to determine if error was due to folds on ballots or due to the nature of the machine.

Rule	Text
45.5.2.1.5	The voting system shall provide for the tabulation of votes cast in split precincts where all voters residing in one precinct are not voting the same ballot style.
45.6.2.3.3	Each voting system shall be tested and examined by conducting at least three mock elections which shall include voting scenarios that exist within a primary election, a coordinated election, and a recall election.
45.6.2.3.6	The voting system provider is required to produce ballots in quantities identified below for each of the two elections. Enough ballots need to be created to conduct the testing of the voting system as defined in this rule. One complete set of ballots will be tested in each of the applicable counter types (or groups): Absentee – ballots are scored and folded to fit in standard Colorado Absentee Mailing Envelopes.
45.6.2.3.7	All ballots provided shall be blank with no marks on them. The following combinations of ballots are required: (a) Four separate decks of ballots shall be provided consisting of 25 ballots for each precinct/precinct split generated for each election that are flat (1500 minimum combined). At least one deck shall have the General Election data, and at least one shall have the Primary election data as indicated in the instructions for voting system providers; (b) Four separate decks of ballots shall be provided consisting of 25 ballots for each precinct/precinct split generated for each election that are folded (1500 minimum combined). At least one deck shall have the General Election data, and at least one shall have the Primary election data as indicated in the instructions for voting system providers; (d) One separate deck of ballots consisting of 200 ballots of any single precinct from the Coordinated election shall be provided that contains a two page ballot (races on four faces). (e) One separate deck of ballots consisting of 10 ballots for each precinct generated for the Recall election that are flat as indicated in the instructions for vendors. (f) Any vendor that uses serial numbers printed on ballots for processing shall produce ballots of each requirement printed both with and without serial numbers.
45.6.2.3.10	Ballots shall be cast and counted in all applicable counter types (or counter groups) as necessary based on the parts included in the voting system. These are at a minimum: Poll Place (or Vote Center), Absentee, Provisional, and Early Voting. Ballots may be run through components 10 or more times depending on components and counter group being tested to achieve a minimum number of ballots cast as follows for each group: (c) Vote Center/ OS 5000. (e) Early Voting / OS 5000. (g) Mail-in 10,000. (h) Provisional 5,000.

## Ballot Now 3.2.4

(Functional requirements continued.)

	Rule	Text
	45.6.2.3.14	Ballots shall include the following minimum race situations to simulate and test “real world” situations in the State of Colorado: (d) In a general election, allow a voter to vote for any candidate for any office, in the number of positions allowed for the office, and to select any measure on the ballot that the candidate is allowed to vote in, regardless of party. (e) Allow for programming to accommodate Colorado recall questions as prescribed in Article 12 of Title 1, C.R.S.;
	45.6.2.3.3	Each voting system shall be tested and examined by conducting at least three mock elections which shall include voting scenarios that exist within a primary election, a coordinated election, and a recall election.
2) Performance levels	45.6.2.2.1 45.6.2.3.15	Test all ballot reading functions – are they accurate and reliable as described in the requirement - how do scanner(s) responds to smudges, folds, etc; response to valid and invalid or absence of marks.
	45.6.2.3.9	The testing board shall mark a minimum of 300 ballots with marking devices of various color, weight, and consistency to determine accurate counting with a variety of marking devices.
3) Physical and design characteristics	1-5-611	No nonpunch card electronic voting system shall be purchased, leased, or used unless it fulfills the following requirements: (1)(f)(I)If the system uses a voting device: It is suitably designed, of durable construction, and capable of being used safely, efficiently, and accurately in the conduct of elections and the tabulation of votes.
4) Documentation requirements	1-5-601.5	<b>Compliance with federal requirements.</b> All voting systems and voting equipment offered for sale on or after May 28, 2004, shall meet the voting systems standards that were promulgated in 2002 by the federal election commission and that may thereafter be promulgated by the federal election assistance commission. Subject to section 1-5-608.2, nothing in this section shall be construed to require any political subdivision to replace a voting system that is in use prior to May 28, 2004.
	45.4.2	A voting system provider that submits a voting system for certification shall complete the Secretary of State’s “Application for Certification of Voting System”. Which contains all of the following documentation: <ul style="list-style-type: none"><li>• Level, location and programming of audit trail information.</li><li>• Process for Battery Charging.</li><li>• Basis for useful life estimate.</li></ul>
	45.5.1.2	All voting system software, hardware, and firmware shall meet all requirements of federal law that address accessibility for the voter interface of the voting system. These laws include, but are not necessarily limited to, (a) the Help America Vote Act,

## Ballot Now 3.2.4

(Documentation requirements continued.)

Rule	Text
45.5.2.2.3	The voting system provider shall publish and specify processing standards for each component of the voting system as part of the documentation required for certification.
45.5.2.3.19	All electronic voting devices provided by the voting system provider shall have the capability to continue operations and provide continuous device availability during a period of electrical outage without any loss of election data. (d) The voting system provider shall deliver to the Secretary of State documentation detailing estimated time of operation on battery for each type of optical scanner, ballot imager, DRE, and V-VPAT they provide, assuming continuous use of the devices by voters during an interruption of normal electrical power. (e) The voting system provider shall deliver to the Secretary of State documentation specifying the steps and times required for charging batteries for each type of optical scanner, ballot imager, DRE and V-VPAT they provide.
45.5.2.4.2	All VSTL qualification reports, test logs, and technical data packages shall be evaluated to determine if the voting system meets the requirements of this rule and have completed the applicable federal certification requirements at the time of State testing. Failure to provide such documentation of independent testing will result in the voting system application being rejected. (a) The voting system provider shall execute and submit any necessary releases for the applicable VSTL and/or EAC to discuss any and all procedures and findings relevant to the voting system submitted for certification with the Secretary of State's office. The voting system provider shall provide a copy of the same to the Secretary of State's office.
45.5.2.5.2	The voting systems shall include detailed documentation as to the level, location, and programming of audit trail information throughout the system. The audit information shall apply to: (a) Operating Systems (workstation, server, and/or DRE);
45.5.2.7.10	Voting systems providers shall document how they plan to monitor and respond to known threats to which their voting systems are vulnerable. This documentation shall provide a detailed description, including scheduling information, of the procedures the voting system provider will use to: (a) Monitor threats, such as through the review of assessments, advisories, and alerts for COTS components; (b) Evaluate the threats and, if any, proposed responses. (c) Develop responsive updates to the system and/or corrective procedures; and (d) As part of certification requirements of the proposed system, provide assistance to customers, either directly or through detailed written procedures, how to update their systems and/or to implement the corrective procedures within the timeframe established by the Secretary of State.

## **Ballot Now 3.2.4**

### **5) Audit capacity**

<b>Rule</b>	<b>Text</b>
1-5-611	No nonpunch card electronic voting system shall be purchased, leased, or used unless it fulfills the following requirements: (1)(f)(III) If the system uses a voting device: It contains a protective counter with a register which cannot be reset, which shall register the cumulative total number of movements of the operating mechanism.
1-5-615 37.1.4	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: Saves and produces the records necessary to audit the operation of the electronic or electromechanical voting system, including a permanent paper record with a manual audit capacity.
45.5.2.5.3	The voting system shall track and maintain audit information of the following voting system application events: (b) Application start and stop. (c) Printing activity (where applicable). (d) Election events – setup, set for election, unset for election, open polls, close polls, end election, upload devices, download devices, create ballots, create precincts, create districts, create poll places (or Vote Centers), initialize devices, backup devices, and voting activity;

## **DRE Restrictions:**

### **eSlate 4.0.19, JBC 4.0.19**

#### **1) Functional requirements**

<b>Rule</b>	<b>Text</b>
11.5.2.1	The county clerk and recorder shall commence the Hardware Diagnostic Test prior to the election and allow time for each electronic voting device within the county to be tested. Each device being used in the election, including units identified as spare or backup units, shall be tested to verify that mechanical components are working correctly. This test shall include, but not be limited to, the following tests: (a) All input and output devices; (b) Communications ports; (c) System printers; (d) System modems when applicable; (e) System Screen displays; (f) Boot performance and initializations; (g) Firmware loads; (h) Software loads; (i) Confirmation that screen displays are functioning; and (j) Date, time and calibration of systems.

**eSlate 4.0.19, JBC 4.0.19**

(Functional requirements continued.)

	<b>Rule</b>	<b>Text</b>
	45.5.2.1.2	The Voting system shall provide for appropriately authorized operators to conduct hardware and diagnostics testing as required herein; (a) Prepare the system for an election; (b) Setup and prepare ballots for an election; (c) Lock and unlock system to prevent or allow changes to ballot design; (d) Conduct hardware and diagnostics testing as required herein; (e) Conduct logic and accuracy testing as required herein; (f) Conduct an election and meet additional requirements as identified in this section for procedures for voting, auditing information, inventory control, counting ballots, opening and closing polls, recounts, reporting, and accumulating results as required herein; (g) Conduct the post election audit as required herein; and (h) Preserve the system for future election use.
<b>2) Documentation requirements</b>	45.4.2	A voting system provider that submits a voting system for certification shall complete the Secretary of State’s “Application for Certification of Voting System”. Which contains all of the following documentation: <ul style="list-style-type: none"><li>• Level, location and programming of audit trail information.</li><li>• Accessibility documentation.</li><li>• Process for Battery Charging.</li><li>• Basis for useful life estimate.</li></ul>
	45.5.2.2.3	The voting system provider shall publish and specify processing standards for each component of the voting system as part of the documentation required for certification.
	45.5.2.3.2	The voting system shall meet the following environmental controls allowing for storage and operation in the following physical ranges: (b) Non-Operating – Max. 140 Degrees Fahrenheit; Min. 4 Degrees Fahrenheit. Non-operating humidity ranges from 5% to 90% for various intervals throughout the day.
	45.5.2.3.13	All DRE voting devices shall use touch screen technology or other technology providing visual ballot display and selection. The voting system provider shall include documentation concerning the use of touch screen or other display and selection technology, including but not limited to: (b) Technical documentation describing the nature and sensitivity of any other technology used to display and select offices, candidates, or issues;

**eSlate 4.0.19, JBC 4.0.19**

(Documentation requirements continued.)

<b>Rule</b>	<b>Text</b>
45.5.2.3.18	The approach to design shall be unrestricted, and it may incorporate any form or variant of technology that is capable of meeting the requirements of this rule, and other attributes specified herein. The frequency of voting system malfunctions and maintenance requirements shall be reduced to the lowest level consistent with cost constraints. Applicants are required to meet or exceed MIL-HDBK-454; "Standard General As Amended 10/2/07 Page 119 Requirements for Electronic Equipment" that is hereby adopted and incorporated by reference, as a guide in the selection and application of materials and parts only as is relevant to this section.
45.5.2.3.22	The voting system and all associated components shall have an estimated useful life of at least eight (8) years. Voting system provider shall provide documentation of the basis for the estimate.
45.5.2.7.10	Voting systems providers shall document how they plan to monitor and respond to known threats to which their voting systems are vulnerable. This documentation shall provide a detailed description, including scheduling information, of the procedures the voting system provider will use to: (a) Monitor threats, such as through the review of assessments, advisories, and alerts for COTS components; (b) Evaluate the threats and, if any, proposed responses. (c) Develop responsive updates to the system and/or corrective procedures; and (d) As part of certification requirements of the proposed system, provide assistance to customers, either directly or through detailed written procedures, how to update their systems and/or to implement the corrective procedures within the timeframe established by the Secretary of State.
45.5.2.8.2	Documentation of the accessibility of the voting system shall include the following items at a minimum: (c) Technology used by the voting system that prevents headset/headphone interference with hearing aids; (i) Method for adjusting color settings, screen contrasts, and screen angles/tilt if the system uses a display screen.

**eSlate 4.0.19, JBC 4.0.19**

**3) Accessibility requirements**

<b>Rule</b>	<b>Text</b>
1-5-704 35.1.5	Standards for accessible voting systems. (1) Notwithstanding any other provision of this article, each voting system certified by the secretary of state for use in local, state, and federal elections shall have the capability to accept accessible voter interface devices in the voting system configuration to allow the voting system to meet the following minimum standards: (d) Devices providing audio and visual access shall be able to work both separately and simultaneously. (f) Any voting system that requires any visual perception shall allow the font size as it appears to the voter to be set from a minimum of fourteen points to a maximum of twenty-four points before the voting system is delivered to the polling place. (n) Audio ballots shall meet the following standards: (X) The elector shall have the opportunity to review the elector's write-in input to the voter interface device, edit that input, and confirm that the edits meet the elector's intent.
37.1.4	The voting systems described in the foregoing paragraphs shall produce a record with an audit capacity for such system. (d) The paper record shall be accessible for individuals with disabilities including nonvisual accessibility for the blind and visually impaired, in a manner that provides the same opportunity for access and participation (including privacy and independence) as for other voters.
35.1.7	Any voting system that requires any visual perception shall offer the election official who programs the system, prior to its being sent to the polling place, the capability to set the font size to a level that can be read by voters with low vision. While there is no standard font size for this situation, a sans-serif font of 18 points as printed on a standard 8.5" x 11" piece of paper will allow the most universal access;
45.5.2.8.1	Specific minimum accessibility requirements include those specified in section §1-5-704 C.R.S., Secretary of State Rule 34, Rule 35 and the following: (b) Audio ballots shall meet the following standards: (ii)The audio system shall allow voters to control within reasonable limits, the rate of speech. (f) Adjustability of color settings, screen contrasts and/or screen angles/tilt may be made by either the poll worker or voter if the system uses a display screen. A minimum of two color settings, two contrast settings and two angles shall be available for all display screens.
45.5.2.9.10	The V-VPAT device shall be designed to allow every voter to review, and accept or reject his/her paper record in as private and independent manner as possible for both disabled and non-disabled voters.

**2007-CDOS-HAR-001-0404  
PROJECT OVERVIEW BINDER “A.2”**

**CONDITIONS**



### Conditions for Use

The Testing Board would also recommend the following conditions for use of the voting system. These conditions are required to be in place *should* the Secretary approve for certification any or all of the items indicated in the **COMPONENTS** section. Being that many conditions address the security, auditability and availability of the system component, the testing board would firmly reject any option which removes, replaces or diminishes the conditional requirement and still allow the system to be used and recommended for certification. Any “Y” value in the **Recommendation** table would change to a “N” value with any change to the conditions.

#### **Global Conditions (applies to all components):**

- 1) Modem and other telecommunication devices may not be used on any subsystem component - system provider was unable to meet or provide prerequisite FIPS 140/180 certifications.
- 2) Provisional ballots must be processed separately from non-conditional ballots - system subcomponents are unable to functionally differentiate and correctly process to Colorado specific requirements.
- 3) Coordination of Escrow Setup - Upon Certification, voting system manufacturer must coordinate the Escrow of the TRUSTED BUILD software with SOS escrow, or third party escrow service as required by Rule 11 prior to use in Colorado.
- 4) Abstract Report generation - abstracts used for State reporting must come from Tally Software, or other external solution, rather than from the specific device.
- 5) Trusted Build Verification
  - a) The system components do not allow for proper verification of trusted build software. Any breach of custody and/or other security incidents will require the rebuild of the component with the state trusted build software. This requirement applies to all voting devices, firmware and software components of the system. Additionally, due to concerns and previous history of software version control with this vendor, counties will be required to audit equipment and submit hash values, directory structure and various reports as necessary by the Secretary of State’s office to ensure that only the approved components are present on any system in use in this state. Submission of this information shall happen at least once prior to each election and following each election.
  - b) Counties shall ensure that hardware, software and firmware purchased for use of the system matches the specifications of VSTL/EAC and/or State Certified and trusted versions, not to the version presented in the vendor documentation.
  - c) Due to limitations with the verification of the trusted build and the requirements for additional auditing and database handling, counties will be required to have all necessary software components in the operating possession of the county clerk and recorder. This will at a minimum include the

software components for BOSS, Tally, and Servo.

- 6) Counties using the voting system shall testify through their security plan submission that the voting system is used only on a closed network and/or as stand alone devices as required.
- 7) Use of wireless components is forbidden on the system. Any workstation or laptop that is designed with wireless communications shall have the device disabled and unable to be enabled by anyone other than the system administrator.
- 9) Due to programming limitations on the device, counties are required to have a minimum of 6 MBB cards available for each device per election conducted.

### **Software Conditions (BOSS and Components):**

- 1) System/database/network security hardening.
  - a) Because the voting system operates in a non-restricted system configuration containing open file system access to locate, copy, open and overwrite without detection, election vote content database files outside of election management system application by third-party tools, counties will be required to modify their physical environmental conditions, or request a variance from the Secretary of State to create Hart system hardening documentation in lieu of environmental changes. If approved, counties shall submit plans for approval to the Secretary of State's office on overcoming these conditions through one of the two stated processes which shall be tested by the Secretary of State's office prior to deployment.
  - b) In addition to physical environmental changes, counties shall create a second (or backup) copy of the BOSS database that is created immediately after the point of memory card downloads. The backup copy shall be stored on closed CD Media and documented as matching the master database. This process shall be observed by two election staff members. Chain of custody documents shall be generated for the media, and the media shall be sealed with at least two tamper evident seals and stored in a sealed or lockable transfer case that is stored in a limited access area. AFTER the close of polls, the designated election official shall load the sealed copy of the database onto the server/workstation, create a Tally database from the secured copy of the finalized database and proceed with uploading memory cards into Tally after documenting the loading of the backup master database onto the system. After loading the sealed database copy, the county shall re-secure the database with seals (updating necessary logs) in the limited access location.
  - c) Additionally, to overcome deficiencies in security and auditing of the system, the county will be required to perform increased Election Night and Post Election Audits for this system. All post-election audit data shall process a hand count of paper ballots (or paper records) which shall match the totals report from the specific device, as well as the totals for the Tally database. Counties shall prepare for this event with one of two methods:

Option #1 – Prepare for the upload of memory cartridges as normal. Print necessary zero report. Upon uploading each individual memory card, print a summary report showing the change in totals from the upload of the memory card. Label the report to match the name/number of the memory card uploaded. Continue to upload memory cards and print totals reports to match. When auditing a specific device, use the difference between the report totals for the memory card selected for the audit and the totals from the immediately preceding memory card report to calculate vote totals generated by the Tally software.

When memory cards are delivered to the county for upload, the machine generated report shall be delivered for inspection as well. On election night, when the summary report indicated above is created, the difference totals (delta report) are immediately compared to the totals from the report generated by the device (or JBC) at the polling place. If the reports match, the public is ensured that the totals from the polling place match the totals from the county server. If the totals are different, the county is to report the situation (on election night) to the Secretary of State for audit, security and remedy procedures.

During the post election audit process, the totals of the paper record for the specific device are to be hand counted and verified against the electronic record for the device. The canvass board shall report the verification of three totals to match – the paper record of the device, the totals of the electronic vote on the device, and the totals in the central count server; OR

Option #2 – Prepare for the upload of memory cartridges by creating one master default database (containing all memory cards/cartridges). Create individual databases to contain values (upload data) for each separate memory card (or in some instances by batch of ballots – see condition #4b under Central Count devices. Upload memory card/cartridges into master database, and into the specific database created for that memory card (two separate uploads). This process must happen on Election Night and with observation by at least two people. Election summary reports shall be printed from each individual database and manually added together. The totals from the individual databases must match the master database before proceeding. Upon verification that the master and individual databases match, the county can then use the individual reports to conduct a hand count of the paper ballot (or paper record) generated by the device to show that the software totals match. The verification of the separate upload databases verify that the database totals match the field totals on each memory card device, as was designed after the point of Logic and Accuracy testing took place.

## 2) Virus Protection.

The county shall submit for review to the Secretary of State a solution to virus protection that allows for manual updates as required.

## 3) Audit Trail Information:

a) Counties will be required to produce certain reports identified in C.R.S. 1-7-509 using an external process which will include at a minimum exporting result from the Tally or other software component for processing by other methods.

b) Operators of the system shall also be required to maintain logs indicating use of the report printing functions of the software, and detailed information to changes of the system including hardware changes which shall include: insert removable media, remove removable media, modify system hardware drivers, modify system physical hardware, and any other system property changes made by either judges or other trusted staff. Logs shall be maintained physically in a file outside or separate

from the database, which is NOT accessible for review and/or modification by user/operator accounts on the system, but that is readily accessible to election officials or other interested party.

4) Performance Deficiencies.

- a) Due to failures in performance, counties shall allow extra time for downloads and uploads of memory card devices. This may impact programming, testing and use of the system on election night. Counties shall ensure trusted staff is properly trained on this issue and accommodating the allowable time required for programming memory devices.
- b) Counties shall ensure that hardware purchased for use of the system matches the specifications of VSTL versions, not the Hart documentation.

5) Provisional Ballots.

The software is not capable of processing provisional ballots internally to accept federal and state only questions. A procedure outside of the voting system will be required. Additionally, the abstracts and reports created by the software do not meet the requirements of rule 41.6.3(g) and users of the system will be required to generate an abstract outside of the voting system.

6) Election Database Creation and testing.

- a) The system was unable to be fully tested with all testing board requirements for ballot layouts as required. Therefore, additional testing will be required by counties for both electronic and paper ballots to ensure all voting positions are working as designed prior to each election. This shall include ordering a complete set of at least 5 ballots of each style that contain the prescribed design for that election. County officials shall mark each possible position for each race on the ballots. All ballots shall be tested internally prior to the public logic and accuracy test. The goal of the pretest is to ensure that all available positions are counting when marked correctly.
- b) Counties to ensure ballots are designed and created according to state requirements. The vendor may offer a solution that includes non-certified and non-tested proprietary components. Counties may not use any modified template other than what is available as part of the default, and trusted configuration.

### **Precinct Count Scanner Conditions (eScan):**

1) Intrusion seals for protection of Trusted Build firmware.

Device has no provision of Trusted Build verification once installed. Counties will be required to maintain constant seals on voting device memory slot, back panel, and other entry points as indicated by the Secretary of State. Refer to Global Condition #5a for ensuring integrity of trusted build.

2) Ballot processing.

Due to limitations in the system for having templates to conform with trusted build files that are narrow in scope and ballot layout capabilities, the jurisdiction will find that only Primary and Recall election ballots shall be processed, unless a coordinated or general election is small enough to be arranged on a default template that is included in the trusted build of the system.

3) External Battery backup (UPS) devices required.

Insufficient internal power reserves to sustain minimum 3 hour continuous operation. Counties shall purchase and use an external power supply that meets or exceeds the vendors' recommendation for the component.

4) Device security accessibility.

a) County use of voting system will require use of Boss Software to modify the "administrator" password on the voting devices.

b) Counties shall coordinate with the vendor and submit to the state the plan for an approved transfer container for securing ballots after the close of polls on the device.

c) Counties will be required to perform additional post election audit functions for the device to accommodate for security deficiencies. In an effort to increase confidence in the recording of votes by the device, the post-election audit shall include the verification of the hand count of paper ballots to match the totals generated from the Tally software as indicated in Software condition #1c.

5) Ballot/Race conditions simulation.

Additional County testing shall be required to accommodate ballots with conditions from each election. This shall include ordering a complete set of at least 5 ballots of each style that contain the prescribed design for that election. County officials shall mark each possible position for each race on the ballots. All ballots shall be tested internally prior to the public logic and accuracy test. The goal of the pretest is to ensure that all available positions are counting when marked correctly.

6) Audit trail information:

a) Counties will be required to produce certain reports identified in C.R.S. 1-7-509 using an external process which will include at a minimum exporting result from the Tally software for processing by other methods.

b) Judges shall be required to include device serial number on all reports regarding use of the device. Additionally, the county shall include the device serial number on applicable reports from the device.

c) Due to errors in processing and auditing information processed by the device, the device will be limited in functionality to only using serial numbered ballots.

d) Election official shall not reset the device without first creating an event and backing up the device in order to maintain a complete history of the audit logs.

7) Voting Secrecy.

Insufficient privacy of ballot was detected using secrecy sleeve. Election administrators must ensure system secrecy sleeve (from Hart) is used for ballots that are 14" in length or shorter. For ballots outside of this description, the counties shall create a secrecy sleeve to accommodate the deficiency and submit design form to Secretary of State for approval.

## **Central Count Scanner Conditions (Ballot Now/Scanners):**

1) Intrusion seals for protection of Trusted Build firmware.

Device has no provision of Trusted Build verification once installed. Counties will be required to maintain constant seals on voting device memory slot, back panel, and other entry points as indicated. Refer to Global Condition #5a for ensuring integrity of trusted build.

2) Ballot processing.

Due to limitations in the system for having templates to conform with trusted build files that are narrow in scope and ballot layout capabilities, the jurisdiction will find that only Primary and Recall election ballots shall be processed, unless a coordinated or general election is small enough to be arranged on a default template that is included in the trusted build of the system.

3) External Battery backup (UPS) devices required.

Insufficient internal power reserves to sustain minimum 3 hour continuous operation. Counties shall purchase and use an external power supply that meets or exceeds the vendors' recommendation for the component.

4) Audit trail information:

- a) Judges shall be required to include device serial number on all reports regarding use of the device. Additionally, the county shall include the device serial number on applicable reports from the device.
- b) Counties will be required to produce certain reports identified in C.R.S. 1-7-509 using an external process which will include at minimum exporting results from the appropriate software module for processing by other methods.
- c) Counties will be required to perform additional post election audit functions for the device to accommodate for security deficiencies. In an effort to increase confidence in the recording of votes by the device, the post-election audit shall include a hand count of at least the following amounts of ballots:

Considering the closest race in the election, if the difference between the top two candidates for the race is:

- 10% or greater, then hand count 60 ballots for every 10,000 cast;
- 9.00% - 9.99%, then hand count 65 ballots for every 10,000 cast;
- 8.00% - 8.99%, then hand count 70 ballots for every 10,000 cast;
- 7.00% - 7.99%, then hand count 80 ballots for every 10,000 cast;
- 6.00% - 6.99%, then hand count 95 ballots for every 10,000 cast;
- 5.00% - 5.99%, then hand count 115 ballots for every 10,000 cast;
- 4.00% - 4.99%, then hand count 140 ballots for every 10,000 cast;
- 3.00% - 3.99%, then hand count 185 ballots for every 10,000 cast;
- 2.00% - 2.99%, then hand count 275 ballots for every 10,000 cast;
- 1.00% - 1.99%, then hand count 550 ballots for every 10,000 cast;
- 0.01% - 0.99%, then hand count 1200 ballots for every 10,000 cast.

The verification of the hand count of paper ballots shall match the totals generated from the Tally

software as indicated in Software condition #1c. Counties shall load only the master database from the secured storage location for processing the post election audit ballots as indicated in Software Condition #1b. Counties shall prepare database and batches of ballots prior to scanning into system (for election results) to accurately generate reports in batch sizes as necessary for the audit. If the county or system is not capable of accommodating the requirement of batch size after the outcome of the election is revealed, the highest percentage of ballots shall be used for the audit process.

5) Ballot/Race conditions simulation.

Additional County testing shall be required to accommodate ballots with conditions listed. This shall include ordering a complete set of at least 5 ballots of each style that contain the prescribed design for that election. County officials shall mark each possible position for each race on the ballots. All ballots shall be tested internally prior to the public logic and accuracy test. The goal of the pretest is to ensure that all available positions are counting when marked correctly.

6) Network Access/availability.

The voting system must be used with no network connectivity between devices/units and software. Only a direct connection (SCSI, IEEE 1394(i.e. Firewire), etc.) between scanner and workstation will be allowed.

### **DRE Conditions (eSlate):**

1) External Battery backup (UPS) devices required.

Insufficient internal power reserves to sustain minimum 3 hour continuous operation. Counties shall purchase and use an external power supply that meets or exceeds the vendors' recommendation for the component.

2) Intrusion seals for protection of Trusted Build firmware.

- a) Device has no provision of Trusted Build verification once installed. Counties will be required to maintain constant seals on voting device memory slot, back panel, and other entry points as indicated by the Secretary of State. Refer to Global Condition #5a for ensuring integrity of trusted build.
- b) Election official shall go into Boss software and change passwords for the JBC.

3) Ballot processing.

Due to limitations in the system for having templates to conform with trusted build files that are narrow in scope and ballot layout capabilities, the jurisdiction will find that only Primary and Recall election ballots shall be processed, unless a coordinated or general election is small enough to be arranged on a default template that is included in the trusted build of the system.

4) Ballot/Race conditions simulation.

Additional County testing shall be required to accommodate ballots with conditions listed. This shall include ordering a complete set of at least 5 ballots of each style that contain the prescribed design for that election. County officials shall mark each possible position for each race on the ballots. All ballots shall be tested internally prior to the public logic and accuracy test. The goal of the pretest is to ensure that all available positions are counting when marked correctly. All ballots in this detail shall be "marked" using the DRE device as applicable for similar testing.

- 5) V-VPAT paper record shall be handled per Rule 11.6.
  - a) Prescribed paper record is of the thermal type and requires special storage conditions to avoid legibility degradation. Counties shall follow the requirements for handling according to Secretary of State Rule 11 and 43.
  - b) Election judges are required to perform the “Printer Test” in between paper changes and verify with one additional judge that the paper has been loaded correctly and is printing according to design which ensures that all machines will have paper records for each vote cast.
- 6) Audit trail information:
  - a) Counties will be required to produce certain reports identified in C.R.S. 1-7-509 using an external process which will include at a minimum exporting result from the Tally software for processing by other methods.
  - b) Operators of the system shall also be required to maintain logs indicating use of the administrator functions of the device by either judges or other trusted staff.
  - c) Election official shall not reset the device without first creating an event and backing up the device in order to maintain a complete history of the audit logs.
- 7) V-VPAT Security.
  - a) The V-VPAT device provides no assurance that it cannot accommodate other devices, and/or the device is a standard communication port. This connection between the V-VPAT printer and the DRE unit shall be secured with tamper evident seals with proper chain of custody documentation to prevent and detect tampering.
  - b) The lock on the V-VPAT unit must be sealed with a tamper-evident seal.
- 8) Accessible operation.
  - a) Due to the inability for the voter to pause and resume the audio text, election judges shall provide instructions specific to this fact to the voters and operations for repeating the text if text was missed, which shall include details on navigating forward and backwards through the system prompts.
  - b) A headset with an adjustable volume, which meets the State of Colorado specifications, must be provided.

**2007-CDOS-HAR-001-0404  
PROJECT OVERVIEW BINDER “A.2”**

**COMMENTS**



## **Test Board Comments**

The test board has unveiled a known reality that no computer system is perfect. Additionally, we have discovered and documented that no system can currently meet the requirements of Rule 45 as applied in its strictest sense. Where possible, the testing board attempted to overcome these deficiencies in the form of “conditions for use” of the system – procedural workarounds.

The testing board recognizes that the conditions created are in essence a “last resort” workaround to accommodate requirements that do not meet specific sections of Colorado Revised Statutes 1-5-615. The preference of the testing board would be to have the specific deficiencies addressed with a system solution as required. Given the ability to mitigate deficiencies with procedural workarounds (C.R.S. 1-5-621), the testing board presents conditional use scenarios in the “**Conditions**” section that are directly tied to the recommendation status. Being that many workarounds address the security, auditability and availability of the system component, the testing board would firmly reject any option which removes, replaces or diminishes the conditional requirement and still allow the system to be used and recommended for certification. Any “Y” value in the **Recommendation** table would change to a “N” value with any change to the conditions.

These conditional procedures rely heavily on proper execution by county administrators and/or election judges. While we have faith that these dedicated workers will attempt to perform their duties to the best of their abilities, a majority of the conditions involve a human element which may or may not produce the acceptable outcome. This single factor alone causes concern that a security issue may not be resolvable in a post-election scenario.

Finally, it is of value to point out that the conditions that address security specific events are only addressing the attack scenario of a change in vote totals (refer to Cyber Security Report). The essence of the workaround in this case is to ensure that the vote totals calculated electronically are a match to the paper records. This requires absolute assurance that all paper records exist and are auditable for a successful outcome and high confidence in the report of votes by any given county.

**2007-CDOS-HAR-001-0404  
PROJECT OVERVIEW BINDER “A.2”**

**AUDIT REPORTS**

**STATE OF COLORADO**  
**Department of State**

1700 Broadway, Suite 270  
 Denver, CO 80290



**Mike Coffman**  
 Secretary of State

**Holly Lowder**  
 Director, Elections

The Testing Board delivered the project in the form of electronic and paper files to Paul Kraft of Freeman, Kraft, McGregor, Inc. for review under the independent audit process. The results of the audit are included herein and attached as part of this section.

The auditor provided details to the testing board on a test by test basis for review by the testing board. The testing board review and outcome fell into two categories. First, many of the items mentioned by the auditor are addressed by the testing board by addressing documentation, updating test status, or firming the position of the testing board. The specific test numbers that fall into this category can be found in the addendum binders for the voting system. The amended test numbers based on auditor comments are:

AC3-P3	303
AC4-P3	405
BA4-P3	406
BA4-P3	413
BA4-P3	414
BE2-P3	207
BE4-P3	402
BE4-P3	403
CA1-P3	116
CA2-P3	205
CA2-P3	222
CA4-P3	401
CA4-P3	402
CA4-P3	405
CA4-P3	406
CA4-P3	408
CA4-P3	409
CA4-P3	410
CA4-P3	415
CA4-P3	416
CA4-P3	417
CA4-P3	421
CA4-P3	423
CA4-P3	425
CB3-P3	304
CB3-P3	306
CB3-P3	309
CB3-P3	315
CC1-P3	122
CC2-P3	228

CC2-P3	233
CC2-P3	237
CC2-P3	240
CC3-P3	301
CC3-P3	308
CC3-P3	309
CC3-P3	313
CC3-P3	322
CC3-P3	328
CC3-P3	329
CC3-P3	337
CC3-P3	339
CC3-P3	342
CC4-P3	401
CC4-P3	406
CC4-P3	407
CC4-P3	411
CC4-P3	414
CC4-P3	416
CC4-P3	418
CC4-P3	424
CC4-P3	430
CE1-P3	112
CE1-P3	114
CE1-P3	115
CE1-P3	116
CF1-P3	102
CF1-P3	106
CF1-P3	107
CF2-P3	206

CF2-P3	207
CF3-P3	301
CF3-P3	305
CF4-P3	401
CF4-P3	404
CF4-P3	408
CG1-P3	102
CG1-P3	112
CG2-P3	203
CG4-P3	403
CG4-P3	408
DA1-P3	102
DA2-P3	201
DA3-P3	301
DB1-P3	101
DB1-P3	102
DB1-P3	108
DB1-P3	110
DB1-P3	112
DB1-P3	117
DB2-P3	201
DB2-P3	202
DB2-P3	203
DB2-P3	206
DB2-P3	207
DB2-P3	214
DB2-P3	216
DB2-P3	218
DB2-P3	220
DB3-P3	301

DB3-P3	302
DB3-P3	303
DB3-P3	305
DB3-P3	307
DB3-P3	309
DB3-P3	312
DB3-P3	316
DB3-P3	318
DB3-P3	319
DB3-P3	320
DB4-P3	403
DB4-P3	405
DB4-P3	407
DC3-P3	301
DC4-P3	401
DE1-P3	102
DE4-P3	401
DF1-P3	106
DF1-P3	107
DF1-P3	110
DG1-P3	102
DG1-P3	117
CC2-P3	228
CC3-P3	335
CC3-P3	340
CC3-P3	343

The other category of items are issues where the testing board feels that the understanding of the requirements is correct, and have provided additional information to the auditor on the reasoning behind either the interpretation or application of the test. Each category is identified below:

**Auditor Comment for test numbers:**

BE1-P3	102
BE1-P3	104
BE1-P3	105
BE1-P3	106
BE1-P3	107
BE1-P3	108
BE1-P3	109
BE1-P3	110
BE1-P3	112
BE4-P3	401
BE4-P3	405
BE4-P3	408
BE4-P3	410
BE4-P3	411

Categories 2 and 4 - Questionable interpretation of the requirement and - Insufficient description to support the finding and status; and Category 1 - Testing to verify compliance could not be completed.

**Colorado Testing Board Response:** The requirements for allowing voting devices (including software and remote devices) include the vendor to submit documentation for meeting and qualifying their components to the FIPS 140-2 standard. Hart failed to produce this documentation to the testing board for review, and acknowledged to the testing board that they would not be capable of producing the documentation. With this knowledge, the testing board felt that there was no need to test the other requirements for functional capabilities of data transfer devices and/or processes due to the lack of meeting the overriding requirements. The testing board has updated the notes in the observations field to reflect this explanation.

**Auditor Comment for test numbers:**

CC3-P3	331
CD3-P3	302
CD3-P3	303
CD3-P3	304
CD3-P3	305

Category 2 - Questionable interpretation of the requirement - Is a central tabulator a "voting device"

**Colorado Testing Board Response:** Colorado Revised Statutes Title 1, Article 1, Section 104 provides this definition of a voting device: (50) "Vote recorder" or "voting device" means any apparatus that the elector uses to record votes by marking a ballot card and that subsequently counts the votes by electronic tabulating equipment or records the votes electronically on a paper tape within the apparatus and simultaneously on an electronic tabulation device. Through the interpretation of the

plain text language, particularly the inclusive language that the device “subsequently counts the votes” qualified the central count device as a voting device.

**Auditor Comment for test numbers:**

CA4-P3	401
CA4-P3	414
CA4-P3	429
DB2-P3	205
DB3-P3	304
DB3-P3	306
DB3-P3	321

Category 7 - The requirement is not found in the Statute or Rule cited.

**Colorado Testing Board Response:** Although each specific requirement is not listed in the rule and/or statute for Colorado law, the requirement is a compilation of understanding voting equipment use and reporting needs for proper Colorado Election Processing. Additionally, rules 45.3.2, 45.6.2.2.1, and 45.6.2.3.15 provides authorization for the Secretary of State to request additional tests and procedures for certification as necessary. After additional review, the testing board believes it is within reason to request testing on the two specific tests identified.

**Auditor Comment for test numbers:**

CG1-P3	101
CG1-P3	104
CG1-P3	107
CG1-P3	108
CG1-P3	109
CG2-P3	205
CG2-P3	206
CG2-P3	208
CG2-P3	210
CG2-P3	211
CG2-P3	214
CG3-P3	301
CG3-P3	303
CG3-P3	304
CG3-P3	306
CG3-P3	308
CG3-P3	309
DH1-P3	106
DH2-P3	210
CG4-P3	402
CG4-P3	407

Category 2 - Questionable interpretation of the requirement - Would not printing an official abstract be a Tally Function, not a precinct/central count device function?

**Colorado Testing Board Response:** Because of the unique and varied Colorado County configurations, there are many instances where counties do not have the election management component of the voting system. By identifying these tests as being unable to produce the official Colorado Abstract, the Testing Board would be able to require one or two outputs as a result. Either the counties would be restricted from purchasing the components without the software, or the counties would be informed that the abstract must come from an external solution as the device is deficient in producing the necessary reports on its' own.

**Auditor Comment for test numbers:**

BA4-P3	416
CC4-P3	409

Category 1 - Testing to verify compliance could not be completed.

**Colorado Testing Board Response:** The testing board encountered a variety of situations in which the vendor failed to provide documentation, programming, ballots, or other variety of items that are necessary for completing the evaluation by the testing board. As for the status, the testing board took the approach of a “closed book” that when the testing was completed, the only acceptable value was pass, pass conditional, not applicable or fail. The Suspend status was used during the testing process while waiting for responses (and in some cases repairs) from the vendor.

**Auditor Comment for test numbers:**

CC1-P3	112
CA4-P3	412
CC1-P3	125
CC3-P3	303
CC4-P3	413
CG2-P3	213
DB2-P3	204
DB2-P3	209
BA4-P3	413

Category 1 - Testing to verify compliance could not be completed.

**Colorado Testing Board Response:** The testing board concluded that a test item may fail if the *vendor* failed to produce the necessary setup records, database definition, ballots, or other required items. The testing board did not take the approach to document if the system “could” perform the function, but rather just indicate that the proper information was not presented and the test could not receive a passing status.

**Auditor Comment for test numbers:**

DB2-P3	211
DB2-P3	213
DB3-P3	308
DB3-P3	313
DB4-P3	404

DB4-P3	406
CG3-P3	312

Category 5 - Observations do not support the Status

**Colorado Testing Board Response:** The testing board believes that the test status is correct. Although the vendor may have met the requirement of the test (provide ballots, in some cases), without the ability to verify that the ballots are the correct ballots for the testing (by processing the ballots, or getting correct totals on the processing of the ballots) the test board was uncomfortable evaluating the test with a positive outcome. The observations indicate the degree of errors received in testing.

**Auditor Comment for test numbers:**

DE1-P3	101
DE1-P3	103
DE1-P3	104
DE1-P3	105
DE1-P3	106
DE1-P3	107

Category 2 - Questionable interpretation of the requirement

**Colorado Testing Board Response:** The vendor requested that the testing board not consider the specific components for processing provisional ballots. This was accurately reflected by the testing board in the observations section of each test. The testing board considered tests that could not be completed as “failed” tests, and the outcome is reflected in the conditions section of this binder.

**Auditor Comment for test numbers:**

DE2-P3	201
DE2-P3	204
DE2-P3	205
DE2-P3	206
DE3-P3	301
DE4-PE	404
DE4-PE	405
DE4-PE	406

Category 2 - Questionable interpretation of the requirement

**Colorado Testing Board Response:** The testing board evaluated this requirement at a device level. In that environment, the device would be used to process provisional ballots. By documenting the status of the machines ability to process the particular components as detailed as possible, the testing board is able to make recommendations based on performance. Given the technology used to capture ballot images and provide software to interpret the image data (vs. systems that use coordinate systems to locate “targets”), the possibility of meeting these requirements increases.

**Auditor Comment for test numbers:**

DE3-P3	304
CG3-P3	311

CG2-P3	212
--------	-----

Category 4 - Insufficient description to support the finding and status

**Colorado Testing Board Response:** The requirements for processing provisional ballots require that the system be capable of holding provisional ballots separately from normal ballots if more than 25 are cast, and if less than 25 the provisional votes are placed in absentee counter group. This system requires a separate memory card to be used for the provisional ballots which (at the device level) prevents the totals from being combined if less than 25 are cast. This same logic was applied to tests requiring other “combination” of ballots.

**Auditor Comment for test numbers:**

DA4-P3	401
--------	-----

Category 2 - Questionable interpretation of the requirement

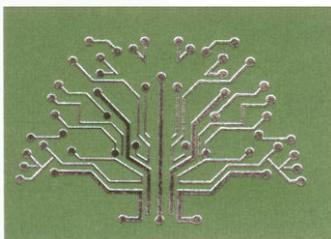
**Colorado Testing Board Response:** After much discussion about this issue, the Testing Board determined that the Hardware diagnostics testing applied only to the “hardware” specific components and the election management software was not included in the testing for this specific requirement, thus generating the Not Applicable outcome.

**Auditor Comment for test numbers:**

CC2-P3	228
CC3-P3	335
CC3-P3	340
CC3-P3	343

Category 2 - Questionable interpretation of the requirement

**Colorado Testing Board Response:** The testing board examined the situation of Hart’s system use of the XML template files. After much discussion, it was determined that the template files qualify as “Software” and therefore under Colorado requirements for certification would require VSTL certification. Hart is in the process of acquiring the necessary testing of the template files used for certification. These test numbers will be updated in the addendum binders to reflect this condition.



**FREEMAN, CRAFT, MCGREGOR GROUP**

Independent Audit of  
Colorado Secretary of  
State's 2007 Certification  
Process for:

Hart Intercivic's  
Hart Voting System  
System 6.0

Colorado Certification Number:  
2007-CDOS-HAR-001-0404

Prepared November 12, 2007

## Introduction

The Colorado Secretary of State's (CDOS) process for certifying voting systems requires an Independent Audit of Certification Procedures and Outcome (audit) for each voting system tested. This report documents the audit of the procedures and outcome from the certification test of the Hart Voting System, System 6.0 voting system produced by Hart Intercivic.

## Objective

The objective of this audit is to provide CDOS with independent information to verify the performance and accuracy of the CDOS Testing Board and their recommendations for corrective actions or reevaluations which should take place prior to making a decision on the certification of a voting system. This audit is not intended to provide any assurance on any topic to third parties. This audit does not express any opinion on any certification decision made by CDOS. The use of this report by other individuals or organizations for any other purpose may lead the user to erroneous conclusions.

## Scope

The scope of this audit is to review the documentation collected and generated by the CDOS Testing Board to determine if the documentation reasonably supports the recommendation on the certification issued by the Testing Board. The auditors are to determine if the records reflect that:

- a. the CDOS Testing Board followed procedures for evaluating test requirements;
- b. the CDOS Testing Board followed procedures for executing test requirements;
- c. the CDOS Testing Board followed procedures for documenting certification testing;
- d. the documentation provided to the auditor supports the outcome of these tests.

## Scope Limitation

There were 877 test records in the Phase II Document Review performed by the CDOS Testing Board. The individual test records describe the requirement for which compliance is being tested, reference the document which was reviewed and assign status codes of Pass, Pass Conditional, Fail, Suspend and Not Applicable for each test. However, many of the test reports do not include the Rule or Statutory citation for the

requirement. There are no references to relevant sections or pages within the documents being reviewed, and the specific reasons for the status assigned by the CDOS Testing Board are not provided as part of the test records.

Accordingly, the auditors were unable to issue any opinion whether the CDOS Testing Board's Phase II Document Review tested for all documentation required by Colorado Statutes and the Election Rules of the Colorado Secretary of State, and whether or not the status assigned on each test record is appropriate.

## Methodology

The Colorado Statutes and the Election Rules of The Colorado Secretary of State were compared to an inventory of test requirements and Test Log Records to determine if any requirements had been omitted from the testing process.

A total of 1130 Testing Log Records resulted from the Phase III Functional Testing. Each record was reviewed to determine if, in the auditor's opinion, the statements of requirements, purpose, test procedures, observations, and findings support the status for each test as assigned by the CDOS Testing Board.

Supplementary documentation, including video records, photographs, copies of ballots, copies of test result printouts and copies of documentation were used as reference materials to support the review of the Testing Log Records.

## Deliverables

Deliverables included in this report are:

A summary statement which highlights issues and inconsistencies in the test records produced by the CDOS Testing Board during their evaluation of the voting system. See the "Summary Statement" section beginning on Page 3 of this report.

Specific statements on any items where the Test Log Records do not reflect that the Testing Board achieved the goals described in items a through c of the scope section above, or where the documentation provided to the auditor does not support the outcome of the test. The specific statements regarding individual items are found in the Microsoft Excel file "Hart - Audited Final Test Status.xls" which accompanies this report. Each finding in the file is assigned a "Category." See the "Detailed Findings" section beginning on Page 3 of this report for a discussion of the categories of findings.

Specific statements regarding any recommendations for items to be reexamined by the CDOS Testing Board. See the "Recommendations" section, beginning on Page 5 of this report.

Any additional reports or statements the auditors feel necessary in their review as dictated by the scope of this audit engagement. See the “Additional Recommendations” section, beginning on Page 6 of this report.

## Summary Statement

Based upon the review of test records, it appears that the CDOS Testing Board followed the procedures for evaluating requirements, followed the procedures for executing testing requirements, and followed the procedures for documenting those tests.

The auditors identified seven requirements in Rule 45 that did not appear to be covered in the Testing Log Records used in the Phase III Functional Testing. These requirements are identified in the Detailed Findings section of this report.

The auditors identified a number of test records where, in the auditors’ opinion, the statements of requirements, purpose, test procedures, observations, and findings do not support the status for each test as assigned by the CDOS Testing Board. The auditors’ findings regarding these test records are discussed in the Detailed Findings section of this report and itemized in the Microsoft Excel file “Hart - Audited Final Test Status.xls”

In the auditors’ opinion, the test records provided by CDOS do not support the Preliminary Recommendation of the CDOS Testing Board, which indicates that the DRE elements of the system meet the requirements if certain procedural steps are taken to mitigate deficiencies. There are two hundred and seventeen test records applicable to the DRE elements of the system. Sixty four of the records were assigned a status of “Fail” by the CDOS Testing Board. Of these, the auditors agree with the “Fail” status on twenty seven records and issued findings on the remaining thirty seven.

## Detailed Findings

There are seven “Rule 45” requirements that the auditors could not find in the Phase III test records. The CDOS Testing Board may have determined compliance with these requirements in their Phase II review of documentation. However, none of these are specifically identified within Rule 45 as documentation requirements. The seven requirements are:

- 1) Section 45.5.2.3.2 – Operating and Non-Operating ranges for temperature and humidity.
- 2) Section 45.5.2.3.16 (a) – Processing Accuracy
- 3) Section 45.5.2.3.16 (b) – Probability of error free data retention in memory devices.
- 4) Section 45.5.2.3.18 – Requirement to meet or exceed Mil-HDBJ-454 “Standard General Requirements for Electronic Equipment.”

- 5) Section 45.5.2.3.22 – Requirement for estimated useful life of at least eight (8) years.
- 6) Section 45.5.2.9.9 – Requirement that the V-VPAT paper record shall be “...sturdy, clean, and of sufficient durability to be used for this purpose.”
- 7) Section 45.6.2.3.5 – Requirement for each component of the voting system to contain provisions for verification of correct function and, whether operation of the component is dependent upon instructions specific to that election.

The auditors have issued a finding for two hundred and five records in the Phase III test log. These findings are itemized in the Microsoft Excel file “Sequoia - Audited Final Test Status.xls.” Within the file, each record in the Phase III test log is assigned a row and referenced by the CDOS test number shown in Columns “A” and “B.” The Status for each test, as assigned by the CDOS Testing Board, is shown in Column “C”. The auditors’ recommended status is shown in Column “I.” As described below, the auditors assigned a “Category” to each finding. The Category assigned to each finding is provided in Column “J.” Comments regarding the finding are provided in Column “K.” Each row in the file is color coded as follows:

Green – Indicates that the statements of requirements, purpose, test procedures, observations, and findings in the test record support the status the test is assigned by the CDOS Testing Board.

Yellow – Indicates that the auditors agreed with the status for the test as assigned by the CDOS Testing Board, but found an issue in the test record’s statements of requirements, purpose, test procedures, observations, and findings, which needs to be addressed.

Pink – Indicates that the auditor’s opinion is that the statements of requirements, purpose, test procedures, observations, and findings do not support the status the test as assigned by the Testing Board.

The Categories assigned to findings are as follows:

Category 1 – The CDOS Testing Board has assigned a status of “Fail” to the test. The review of the observations and findings in the test record shows that the Testing Board was not able to complete the test. Based upon the auditors’ understanding of the criteria used to assign status to each test, it is the auditors’ opinion that for seventeen of these a status of “Suspend” would be appropriate. Two records were assigned categories 1 and category 2. It is the auditor’s opinion that for these two records the status is “Indeterminate.”

Category 2 – The auditors’ opinion is that the CDOS Testing Board has executed tests or assigned a status to a test based upon a questionable interpretation or application of a requirement. Seventy three findings were assigned this category.

Category 3 – There were no category 3 findings in this audit. It is being skipped in this audit in order to keep the categories used consistent for all audits. This category is reserved for findings of insufficient references to supporting documents.

Category 4 – The auditors’ opinion is that the descriptions provided in the test record by the CDOS Testing Board lacks sufficient information to support the status assigned to the test. One hundred and eight findings were assigned this category.

Category 5 – The auditors’ opinion is that the descriptions provided in the test record by the CDOS Testing Board support a different status from the status assigned to the test. Seven findings were assigned this category.

Category 6 – The auditors found that the status shown by the CDOS Testing Board in Column 1 of the Sequoia - Audited Final Test Status.xls file and that found in the test log record are different. One finding was assigned this category.

Category 7 – The auditors found that a requirement cited by the CDOS Testing Board does not appear to exist in Rule or Statute. For all five findings in this category, the test record shows sections 45.6.2.2.1 which provides for “additional testing procedures as determined by the Secretary of State and 45.6.2.3.15 which provides that “Additional tests and procedures may be requested at the discretion of the Secretary of State”

Category 8 – The auditors found an erroneous entry in the test record. One finding was assigned this category.

## Recommendations

For the seven “Rule 45” requirements the auditors could not find in the Phase III test records, it is recommended that the CDOS Testing Board take steps to determine if records exist to provide evidence that they have determined that the system does or does not comply with these requirements. If no such record exists then it is recommended that they conduct additional procedures as necessary to determine compliance with these requirements.

For the Category 1 findings, it is recommended that the CDOS Testing Board consider assigning a status of “Suspend” and document additional test steps required to convert the “Suspend” status to “Pass” or “Fail.”

For the Category 2 findings, it is recommended that the CDOS Testing Board review the auditors’ comments in Column “K” of the Microsoft Excel file “Sequoia - Audited Final Test Status.xls and reconsider the Testing Board’s previous interpretation or application of the requirements. If they determine that a different interpretation or application is

appropriate, then it is recommended that they conduct additional procedures as necessary to determine compliance under the revised interpretation or application.

For the Category 4 findings, it is recommended that the CDOS Testing Board revisit the test records and develop more content to support the status assigned to the test or consider if another status might be more appropriate.

For the Category 5 findings, it is recommended that the CDOS Testing Board revisit the test records and determine whether the descriptions cited in the test record or the assignment of status was made in error.

For the Category 6 finding, it is recommended that the CDOS Testing Board resolve the conflict between the two records.

For the Category 7 findings, it is recommended that the CDOS Testing Board provide documentation to cite the authority that determined these additional procedures and tests to be necessary.

For the Category 8 finding, it is recommended that the CDOS Testing Board correct the record.

## Additional Recommendations

It is recommended that the CDOS Testing Board develop structured test cases designed to test compliance with a large number of requirements so as to reduce redundant operations and make testing more efficient.

It is recommended that the CDOS Testing Board reduce the number of pages used for the testing record. Requirements within a given test case could be documented on a single page rather than a single sheet for each requirement.

It is recommended that the CDOS Testing Board edit video files down to specific sections of video which support the findings. Videos which show long periods of inconsequential events may be valuable as a record of security and access to the testing room, but should be excluded from the video files used to support the CDOS Testing Board's assignments of status to tests.

It is recommended that the CDOS Testing Board develop recommendations for rule changes designed to clarify the applicability of requirements to modules of the system. Most of the Category 2 and many of the Category 4 findings are on records with issues of applicability.

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AA6-P1	601	02-Pass Conditional	TRUE	TRUE	TRUE	The voting system provider shall establish an escrow account pursuant to State procurement processes to compensate the Secretary of State for necessary outside costs associated with the testing of the system.	OTHER	Conditional Pass		
AA6-P1	602	02-Pass Conditional	TRUE	TRUE	TRUE	The voting system provider shall provide the same class of workstation and/or server for testing the voting system as the normal production environment for the State of Colorado.	OTHER	Conditional Pass		
AA6-P1	603	02-Pass Conditional	TRUE	TRUE	TRUE	The voting system provider shall submit for testing the specific system configuration that shall be offered to jurisdictions including the components with which the voting system provider recommends that the system be used.	OTHER	Conditional Pass		
AA6-P1	604	01-Pass	TRUE	TRUE	TRUE	A voting system provider that submits a voting system for certification shall complete the Secretary of State's "Application for Certification of Voting System". Which contains: <input type="checkbox"/> Name address and contact information of vendor submitting application.	OTHER	Pass		
AA6-P1	605	01-Pass	TRUE	TRUE	TRUE	A voting system provider that submits a voting system for certification shall complete the Secretary of State's "Application for Certification of Voting System". Which contains: <input type="checkbox"/> Make Model and Description of the Voting System.	OTHER	Pass		
AA6-P1	606	01-Pass	TRUE	TRUE	TRUE	A voting system provider that submits a voting system for certification shall complete the Secretary of State's "Application for Certification of Voting System". Which contains: <input type="checkbox"/> All Applicable Firmware and version release numbers.	OTHER	Pass		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AA6-P1	607	01-Pass	TRUE	TRUE	TRUE	A voting system provider that submits a voting system for certification shall complete the Secretary of State's "Application for Certification of Voting System". Which contains the following documents: <input type="checkbox"/> Administrator Manual <input type="checkbox"/> Operator Manual <input type="checkbox"/> Maintenance Manual <input type="checkbox"/> Training Manuals <input type="checkbox"/> Technical Specs. <input type="checkbox"/> Operational Specs. <input type="checkbox"/> Photo or Promo Info. <input type="checkbox"/> Schematics.	OTHER	Pass		
AA6-P1	608	01-Pass	TRUE	TRUE	TRUE	A voting system provider that submits a voting system for certification shall complete the Secretary of State's "Application for Certification of Voting System". Which contains the following documents: <input type="checkbox"/> Copy of application on CD <input type="checkbox"/> Instructions for Install and operation.	OTHER	Pass		
AA6-P1	609	01-Pass	TRUE	TRUE	TRUE	A voting system provider that submits a voting system for certification shall complete the Secretary of State's "Application for Certification of Voting System". Which contains: <input type="checkbox"/> Indication if the item is: New, Used, or Refurbished	OTHER	Pass		
AA6-P1	610	02-Pass Conditional	TRUE	TRUE	TRUE	A voting system provider that submits a voting system for certification shall complete the Secretary of State's "Application for Certification of Voting System". Which contains the following VSTL/EAC testing documents: <input type="checkbox"/> Final reports for all VSTL tests. <input type="checkbox"/> VSTL Technical Data Package <input type="checkbox"/> VSTL Test Logs	OTHER	Conditional Pass		
AA6-P1	611	01-Pass	TRUE	TRUE	TRUE	A voting system provider that submits a voting system for certification shall complete the Secretary of State's "Application for Certification of Voting System". Which contains: <input type="checkbox"/> A NASED or EAC Qualification Number	OTHER	Pass		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AA6-P1	612	01-Pass	TRUE	TRUE	TRUE	A voting system provider that submits a voting system for certification shall complete the Secretary of State's "Application for Certification of Voting System". Which contains: <ul style="list-style-type: none"> <li><input type="checkbox"/> Documentation of meeting either the 2002 VSS or the 2005 VVSG.</li> </ul>	OTHER	Pass		
AA6-P1	613	01-Pass	TRUE	TRUE	TRUE	A voting system provider that submits a voting system for certification shall complete the Secretary of State's "Application for Certification of Voting System". Which contains: <ul style="list-style-type: none"> <li><input type="checkbox"/> DRE Technical Documentation in accordance with section 45.5.2.3.13</li> <li><input type="checkbox"/> Nature and Sensitivity of Tactile devices for touch screens</li> <li><input type="checkbox"/> Nature and sensitivity of devices to display and select offices, candidates or issues</li> <li><input type="checkbox"/> Mean time between failure data collected on devices</li> <li><input type="checkbox"/> Problems caused for persons who experience seizures due to screen refresh rates</li> </ul>	OTHER	Pass		
AA6-P1	614	01-Pass	TRUE	TRUE	TRUE	A voting system provider that submits a voting system for certification shall complete the Secretary of State's "Application for Certification of Voting System". Which contains: <ul style="list-style-type: none"> <li><input type="checkbox"/> security documentation in accordance with section 45.5.2.6.2 to prevent, detect and log</li> <li><input type="checkbox"/> Changes to ballot formats</li> <li><input type="checkbox"/> Changes to casting and recording votes</li> <li><input type="checkbox"/> Changes to calculating vote totals</li> <li><input type="checkbox"/> Changes to reporting vote totals</li> <li><input type="checkbox"/> Alteration to audit records</li> <li><input type="checkbox"/> Preventing the recording of a vote</li> <li><input type="checkbox"/> Introducing vote data without casting a vote</li> <li><input type="checkbox"/> Changing calculated vote totals</li> <li><input type="checkbox"/> Preventing access to vote data</li> <li><input type="checkbox"/> Allowing access to determine content of specific votes by a specific voter.</li> </ul>	OTHER	Pass		

3

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AA6-P1	615	01-Pass	TRUE	TRUE	TRUE	A voting system provider that submits a voting system for certification shall complete the Secretary of State's "Application for Certification of Voting System". Which contains documentation of procedures to respond to the following known threats and vulnerabilities: <ul style="list-style-type: none"> <li><input type="checkbox"/> Procedures to monitor threats</li> <li><input type="checkbox"/> Procedures to evaluate and respond to threats</li> <li><input type="checkbox"/> Procedures to update and/or correct system based on review</li> <li><input type="checkbox"/> Procedures to assist customers to update and/or implement corrective procedures.</li> </ul>	OTHER	Pass		
AA6-P1	616	04-Fail	TRUE	TRUE	TRUE	A voting system provider that submits a voting system for certification shall complete the Secretary of State's "Application for Certification of Voting System". Which contains all of the following documentation: <ul style="list-style-type: none"> <li><input type="checkbox"/> Process for Battery Charging</li> <li><input type="checkbox"/> Basis for useful life estimate</li> <li><input type="checkbox"/> Trusted Build Instructions</li> <li><input type="checkbox"/> Project Plan for 2005 VVSG Compliance</li> <li><input type="checkbox"/> Minimum services and executables list.</li> </ul>	OTHER	Fail		
AA6-P1	617	01-Pass	TRUE	TRUE	TRUE	A voting system provider that submits a voting system for certification shall complete the Secretary of State's "Application for Certification of Voting System". Which contains all of the following documentation: <ul style="list-style-type: none"> <li><input type="checkbox"/> Test Procedures &amp; Specifications</li> <li><input type="checkbox"/> Operations Procedures</li> <li><input type="checkbox"/> Maintenance Procedures</li> <li><input type="checkbox"/> Personnel Deployment and Training.</li> </ul>	OTHER	Pass		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AA6-P1	618	02-Pass Conditional	TRUE	TRUE	TRUE	A voting system provider that submits a voting system for certification shall complete the Secretary of State's "Application for Certification of Voting System". Which contains all of the following documentation: <input type="checkbox"/> Configuration Management Plan. <input type="checkbox"/> Quality Assurance Program. <input type="checkbox"/> Processing Standards. <input type="checkbox"/> Estimated time of Battery Operation.	OTHER	Conditional Pass		
AA6-P1	619	04-Fail	TRUE	TRUE	TRUE	A voting system provider that submits a voting system for certification shall complete the Secretary of State's "Application for Certification of Voting System". Which contains all of the following documentation: <input type="checkbox"/> Level, location and programming of audit trail information. <input type="checkbox"/> Cryptography module to FIPS 140-2 standards. <input type="checkbox"/> COTS Hardware, Software and services used for Telecommunications. <input type="checkbox"/> Accessibility documentation.	OTHER	Fail		
AA6-P1	620	01-Pass	TRUE	TRUE	TRUE	Secretary of State's "Application for Certification of Voting System". Which contains all of the following documentation: <input type="checkbox"/> Procedures for V-VPAT use. <input type="checkbox"/> V-VPAT Barcode Information. <input type="checkbox"/> Security Procedures & Measures. <input type="checkbox"/> Security Measures recommended to users.	OTHER	Pass		
AA6-P1	621	01-Pass	TRUE	TRUE	TRUE	Secretary of State's "Application for Certification of Voting System". Which contains all of the following documentation: <input type="checkbox"/> Any financial relationship between applicant and manufacturer, distributor, or retailer of the various components of voting system.	OTHER	Pass		
AA6-P1	622	01-Pass	TRUE	TRUE	TRUE	Secretary of State's "Application for Certification of Voting System". Which contains all of the following documentation: <input type="checkbox"/> Any additional information provided.	OTHER	Pass		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AC1-P3	101	01-Pass	TRUE	TRUE	TRUE	The demonstration period does not have a pre-determined agenda for the voting system provider to follow; however, presentations should be prepared to address and demonstrate with the specific system the following items as they pertain to each area and use within the voting system: (g) Sealing and securing system devices;	DRE	Pass		
AC1-P3	102	01-Pass	TRUE	TRUE	TRUE	The demonstration period does not have a pre-determined agenda for the voting system provider to follow; however, presentations should be prepared to address and demonstrate with the specific system the following items as they pertain to each area and use within the voting system: (b) Verification of complete system matching EAC certification;	DRE	Pass		
AC1-P3	103	01-Pass	TRUE	TRUE	TRUE	The demonstration period does not have a pre-determined agenda for the voting system provider to follow; however, presentations should be prepared to address and demonstrate with the specific system the following items as they pertain to each area and use within the voting system: (a) System overview;	DRE	Pass		
AC1-P3	104	01-Pass	TRUE	TRUE	TRUE	The demonstration period does not have a pre-determined agenda for the voting system provider to follow; however, presentations should be prepared to address and demonstrate with the specific system the following items as they pertain to each area and use within the voting system: (e) Hardware diagnostics testing;	DRE	Pass		
AC1-P3	105	01-Pass	TRUE	TRUE	TRUE	The demonstration period does not have a pre-determined agenda for the voting system provider to follow; however, presentations should be prepared to address and demonstrate with the specific system the following items as they pertain to each area and use within the voting system: (p) Troubleshooting.;	DRE	Pass		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AC1-P3	106	01-Pass	TRUE	TRUE	TRUE	The demonstration period does not have a pre-determined agenda for the voting system provider to follow; however, presentations should be prepared to address and demonstrate with the specific system the following items as they pertain to each area and use within the voting system: <input type="checkbox"/> (e) Certification of results;	DRE	Pass		
AC1-P3	107	01-Pass	TRUE	TRUE	TRUE	The demonstration period does not have a pre-determined agenda for the voting system provider to follow; however, presentations should be prepared to address and demonstrate with the specific system the following items as they pertain to each area and use within the voting system: <input type="checkbox"/> (f) Programming election media devices for various count methods; <input type="checkbox"/> (i) Absentee; <input type="checkbox"/> (ii) Early Voting; <input type="checkbox"/> (iii) Precinct/Poll Place; <input type="checkbox"/> (iv) Provisional; and <input type="checkbox"/> (v) Vote Center.	DRE	Pass		
AC1-P3	108	01-Pass	TRUE	TRUE	TRUE	The demonstration period does not have a pre-determined agenda for the voting system provider to follow; however, presentations should be prepared to address and demonstrate with the specific system the following items as they pertain to each area and use within the voting system: <input type="checkbox"/> (h) Logic and accuracy testing;	DRE	Pass		
AC1-P3	109	01-Pass	TRUE	TRUE	TRUE	The demonstration period does not have a pre-determined agenda for the voting system provider to follow; however, presentations should be prepared to address and demonstrate with the specific system the following items as they pertain to each area and use within the voting system: <input type="checkbox"/> (i) Processing ballots;	DRE	Pass		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AC1-P3	110	01-Pass	TRUE	TRUE	TRUE	The demonstration period does not have a pre-determined agenda for the voting system provider to follow; however, presentations should be prepared to address and demonstrate with the specific system the following items as they pertain to each area and use within the voting system: <input type="checkbox"/> (j) Accessible use;	DRE	Pass		
AC1-P3	111	01-Pass	TRUE	TRUE	TRUE	The demonstration period does not have a pre-determined agenda for the voting system provider to follow; however, presentations should be prepared to address and demonstrate with the specific system the following items as they pertain to each area and use within the voting system: <input type="checkbox"/> (k) Accumulating results;	DRE	Pass		
AC1-P3	112	01-Pass	TRUE	TRUE	TRUE	The demonstration period does not have a pre-determined agenda for the voting system provider to follow; however, presentations should be prepared to address and demonstrate with the specific system the following items as they pertain to each area and use within the voting system: <input type="checkbox"/> (l) Post-election audit;	DRE	Pass		
AC1-P3	113	01-Pass	TRUE	TRUE	TRUE	The demonstration period does not have a pre-determined agenda for the voting system provider to follow; however, presentations should be prepared to address and demonstrate with the specific system the following items as they pertain to each area and use within the voting system: <input type="checkbox"/> (m) Canvass process handling;	DRE	Pass		
AC1-P3	114	01-Pass	TRUE	TRUE	TRUE	The demonstration period does not have a pre-determined agenda for the voting system provider to follow; however, presentations should be prepared to address and demonstrate with the specific system the following items as they pertain to each area and use within the voting system: <input type="checkbox"/> (n) Audit steps and procedures throughout all processes;	DRE	Pass		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AC2-P3	201	01-Pass	TRUE	TRUE	TRUE	The demonstration period does not have a pre-determined agenda for the voting system provider to follow; however, presentations should be prepared to address and demonstrate with the specific system the following items as they pertain to each area and use within the voting system:□ (f) Post-election audit;	PCOS	Pass		
AC2-P3	202	01-Pass	TRUE	TRUE	TRUE	The demonstration period does not have a pre-determined agenda for the voting system provider to follow; however, presentations should be prepared to address and demonstrate with the specific system the following items as they pertain to each area and use within the voting system:□ (e) Hardware diagnostics testing;	PCOS	Pass		
AC2-P3	203	01-Pass	TRUE	TRUE	TRUE	The demonstration period does not have a pre-determined agenda for the voting system provider to follow; however, presentations should be prepared to address and demonstrate with the specific system the following items as they pertain to each area and use within the voting system:□ (g) Sealing and securing system devices;	PCOS	Pass		
AC2-P3	204	01-Pass	TRUE	TRUE	TRUE	The demonstration period does not have a pre-determined agenda for the voting system provider to follow; however, presentations should be prepared to address and demonstrate with the specific system the following items as they pertain to each area and use within the voting system:□ (i) Processing ballots;	PCOS	Pass		
AC2-P3	205	01-Pass	TRUE	TRUE	TRUE	The demonstration period does not have a pre-determined agenda for the voting system provider to follow; however, presentations should be prepared to address and demonstrate with the specific system the following items as they pertain to each area and use within the voting system:□ (b) Verification of complete system matching EAC certification;	PCOS	Pass		

9

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AC2-P3	206	01-Pass	TRUE	TRUE	TRUE	The demonstration period does not have a pre-determined agenda for the voting system provider to follow; however, presentations should be prepared to address and demonstrate with the specific system the following items as they pertain to each area and use within the voting system:□ (m) Canvass process handling;	PCOS	Pass		
AC2-P3	207	01-Pass	TRUE	TRUE	TRUE	The demonstration period does not have a pre-determined agenda for the voting system provider to follow; however, presentations should be prepared to address and demonstrate with the specific system the following items as they pertain to each area and use within the voting system:□ (p) Troubleshooting.;	PCOS	Pass		
AC2-P3	208	01-Pass	TRUE	TRUE	TRUE	The demonstration period does not have a pre-determined agenda for the voting system provider to follow; however, presentations should be prepared to address and demonstrate with the specific system the following items as they pertain to each area and use within the voting system:□ (a) System overview;	PCOS	Pass		
AC2-P3	209	01-Pass	TRUE	TRUE	TRUE	The demonstration period does not have a pre-determined agenda for the voting system provider to follow; however, presentations should be prepared to address and demonstrate with the specific system the following items as they pertain to each area and use within the voting system:□ (k) Accumulating results;	PCOS	Pass		
AC2-P3	210	01-Pass	TRUE	TRUE	TRUE	The demonstration period does not have a pre-determined agenda for the voting system provider to follow; however, presentations should be prepared to address and demonstrate with the specific system the following items as they pertain to each area and use within the voting system:□ (h) Logic and accuracy testing;	PCOS	Pass		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AC2-P3	211	01-Pass	TRUE	TRUE	TRUE	The demonstration period does not have a pre-determined agenda for the voting system provider to follow; however, presentations should be prepared to address and demonstrate with the specific system the following items as they pertain to each area and use within the voting system: (n) Audit steps and procedures throughout all processes;	PCOS	Pass		
AC2-P3	212	01-Pass	TRUE	TRUE	TRUE	The demonstration period does not have a pre-determined agenda for the voting system provider to follow; however, presentations should be prepared to address and demonstrate with the specific system the following items as they pertain to each area and use within the voting system: (o) Certification of results;	PCOS	Pass		
AC2-P3	213	01-Pass	TRUE	TRUE	TRUE	The demonstration period does not have a pre-determined agenda for the voting system provider to follow; however, presentations should be prepared to address and demonstrate with the specific system the following items as they pertain to each area and use within the voting system: (f) Programming election media devices for various count methods; (i) Absentee; (ii) Early Voting; (iii) Precinct/Poll Place; (iv) Provisional; and (v) Vote Center.	PCOS	Pass		
AC3-P3	301	01-Pass	TRUE	TRUE	TRUE	The demonstration period does not have a pre-determined agenda for the voting system provider to follow; however, presentations should be prepared to address and demonstrate with the specific system the following items as they pertain to each area and use within the voting system: (k) Accumulating results;	CCOS	Pass		

11

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AC3-P3	302	01-Pass	TRUE	TRUE	TRUE	The demonstration period does not have a pre-determined agenda for the voting system provider to follow; however, presentations should be prepared to address and demonstrate with the specific system the following items as they pertain to each area and use within the voting system: (g) Sealing and securing system devices;	CCOS	Pass		
AC3-P3	303	02-Pass Conditional	TRUE	TRUE	TRUE	The demonstration period does not have a pre-determined agenda for the voting system provider to follow; however, presentations should be prepared to address and demonstrate with the specific system the following items as they pertain to each area and use within the voting system: (e) Hardware diagnostics testing;	CCOS	Pass	Category 6 - Inconsistency between Status shown in this worksheet and that in the test record	Pass Conditional in Column B and Pass on test log record
AC3-P3	304	01-Pass	TRUE	TRUE	TRUE	The demonstration period does not have a pre-determined agenda for the voting system provider to follow; however, presentations should be prepared to address and demonstrate with the specific system the following items as they pertain to each area and use within the voting system: (l) Post-election audit;	CCOS	Pass		
AC3-P3	305	01-Pass	TRUE	TRUE	TRUE	The demonstration period does not have a pre-determined agenda for the voting system provider to follow; however, presentations should be prepared to address and demonstrate with the specific system the following items as they pertain to each area and use within the voting system: (p) Troubleshooting.;	CCOS	Pass		
AC3-P3	306	01-Pass	TRUE	TRUE	TRUE	The demonstration period does not have a pre-determined agenda for the voting system provider to follow; however, presentations should be prepared to address and demonstrate with the specific system the following items as they pertain to each area and use within the voting system: (o) Certification of results;	CCOS	Pass		

12

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AC3-P3	307	01-Pass	TRUE	TRUE	TRUE	The demonstration period does not have a pre-determined agenda for the voting system provider to follow; however, presentations should be prepared to address and demonstrate with the specific system the following items as they pertain to each area and use within the voting system: <input type="checkbox"/> (n) Audit steps and procedures throughout all processes;	CCOS	Pass		
AC3-P3	308	01-Pass	TRUE	TRUE	TRUE	The demonstration period does not have a pre-determined agenda for the voting system provider to follow; however, presentations should be prepared to address and demonstrate with the specific system the following items as they pertain to each area and use within the voting system: <input type="checkbox"/> (m) Canvass process handling;	CCOS	Pass		
AC3-P3	309	01-Pass	TRUE	TRUE	TRUE	The demonstration period does not have a pre-determined agenda for the voting system provider to follow; however, presentations should be prepared to address and demonstrate with the specific system the following items as they pertain to each area and use within the voting system: <input type="checkbox"/> (i) Processing ballots;	CCOS	Pass		
AC3-P3	310	01-Pass	TRUE	TRUE	TRUE	The demonstration period does not have a pre-determined agenda for the voting system provider to follow; however, presentations should be prepared to address and demonstrate with the specific system the following items as they pertain to each area and use within the voting system: <input type="checkbox"/> (b) Verification of complete system matching EAC certification;	CCOS	Pass		
AC3-P3	311	01-Pass	TRUE	TRUE	TRUE	The demonstration period does not have a pre-determined agenda for the voting system provider to follow; however, presentations should be prepared to address and demonstrate with the specific system the following items as they pertain to each area and use within the voting system: <input type="checkbox"/> (a) System overview;	CCOS	Pass		

13

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AC3-P3	312	01-Pass	TRUE	TRUE	TRUE	The demonstration period does not have a pre-determined agenda for the voting system provider to follow; however, presentations should be prepared to address and demonstrate with the specific system the following items as they pertain to each area and use within the voting system: <input type="checkbox"/> (h) Logic and accuracy testing;	CCOS	Pass		
AC3-P3	313	01-Pass	TRUE	TRUE	TRUE	The demonstration period does not have a pre-determined agenda for the voting system provider to follow; however, presentations should be prepared to address and demonstrate with the specific system the following items as they pertain to each area and use within the voting system: <input type="checkbox"/> (f) Programming election media devices for various count methods: <input type="checkbox"/> (i) Absentee; <input type="checkbox"/> (ii) Early Voting; <input type="checkbox"/> (iii) Precinct/Poll Place; <input type="checkbox"/> (iv) Provisional; and <input type="checkbox"/> (v) Vote Center.	CCOS	Pass		
AC4-P3	401	01-Pass	TRUE	TRUE	TRUE	The demonstration period does not have a pre-determined agenda for the voting system provider to follow; however, presentations should be prepared to address and demonstrate with the specific system the following items as they pertain to each area and use within the voting system: <input type="checkbox"/> (a) System overview;	Software	Pass		
AC4-P3	402	01-Pass	TRUE	TRUE	TRUE	The demonstration period does not have a pre-determined agenda for the voting system provider to follow; however, presentations should be prepared to address and demonstrate with the specific system the following items as they pertain to each area and use within the voting system: <input type="checkbox"/> (c) Ballot definition creation;	Software	Pass		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AC4-P3	403	01-Pass	TRUE	TRUE	TRUE	The demonstration period does not have a pre-determined agenda for the voting system provider to follow; however, presentations should be prepared to address and demonstrate with the specific system the following items as they pertain to each area and use within the voting system:□ (l) Post-election audit;	Software	Pass		
AC4-P3	404	01-Pass	TRUE	TRUE	TRUE	The demonstration period does not have a pre-determined agenda for the voting system provider to follow; however, presentations should be prepared to address and demonstrate with the specific system the following items as they pertain to each area and use within the voting system:□ (i) Processing ballots;	Software	Pass		
AC4-P3	405	01-Pass	TRUE	TRUE	TRUE	The demonstration period does not have a pre-determined agenda for the voting system provider to follow; however, presentations should be prepared to address and demonstrate with the specific system the following items as they pertain to each area and use within the voting system:□ (d) Printing ballots on demand;	Software	Pass	Category 8 – Probable erroneous entry in the test record.	Reference to "Unity"
AC4-P3	406	01-Pass	TRUE	TRUE	TRUE	The demonstration period does not have a pre-determined agenda for the voting system provider to follow; however, presentations should be prepared to address and demonstrate with the specific system the following items as they pertain to each area and use within the voting system:□ (b) Verification of complete system matching EAC certification;	Software	Pass		
AC4-P3	407	01-Pass	TRUE	TRUE	TRUE	The demonstration period does not have a pre-determined agenda for the voting system provider to follow; however, presentations should be prepared to address and demonstrate with the specific system the following items as they pertain to each area and use within the voting system:□ (k) Accumulating results;	Software	Pass		

15

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AC4-P3	408	01-Pass	TRUE	TRUE	TRUE	The demonstration period does not have a pre-determined agenda for the voting system provider to follow; however, presentations should be prepared to address and demonstrate with the specific system the following items as they pertain to each area and use within the voting system:□ (h) Logic and accuracy testing;	Software	Pass		
AC4-P3	409	01-Pass	TRUE	TRUE	TRUE	The demonstration period does not have a pre-determined agenda for the voting system provider to follow; however, presentations should be prepared to address and demonstrate with the specific system the following items as they pertain to each area and use within the voting system:□ (m) Canvass process handling;	Software	Pass		
AC4-P3	410	01-Pass	TRUE	TRUE	TRUE	The demonstration period does not have a pre-determined agenda for the voting system provider to follow; however, presentations should be prepared to address and demonstrate with the specific system the following items as they pertain to each area and use within the voting system:□ (n) Audit steps and procedures throughout all processes;	Software	Pass		
AC4-P3	411	01-Pass	TRUE	TRUE	TRUE	The demonstration period does not have a pre-determined agenda for the voting system provider to follow; however, presentations should be prepared to address and demonstrate with the specific system the following items as they pertain to each area and use within the voting system:□ (p) Troubleshooting.;	Software	Pass		
AC4-P3	412	01-Pass	TRUE	TRUE	TRUE	The voting system provider is not required to be present for the functional testing, but shall provide a point of contact for support.	Software	Pass		

16

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AC4-P3	413	01-Pass	TRUE	TRUE	TRUE	The demonstration period does not have a pre-determined agenda for the voting system provider to follow; however, presentations should be prepared to address and demonstrate with the specific system the following items as they pertain to each area and use within the voting system: <input type="checkbox"/> (f) Programming election media devices for various count methods; <input type="checkbox"/> (i) Absentee; <input type="checkbox"/> (ii) Early Voting; <input type="checkbox"/> (iii) Precinct/Poll Place; <input type="checkbox"/> (iv) Provisional; and <input type="checkbox"/> (v) Vote Center.	Software	Pass		
AC4-P3	414	01-Pass	TRUE	TRUE	TRUE	The demonstration period does not have a pre-determined agenda for the voting system provider to follow; however, presentations should be prepared to address and demonstrate with the specific system the following items as they pertain to each area and use within the voting system: <input type="checkbox"/> (e) Certification of results;	Software	Pass		
AD1-P3	101	01-Pass	TRUE	TRUE	TRUE	If the EAC does not have a trusted build for the voting system submitted for certification, the voting system provider shall coordinate with the Secretary of State for the establishment of the trusted build. At a minimum this shall include a compilation of files placed on write-once media for which the Secretary of State has observed the chain of custody from time of source code compilation through delivery, and an established hash file distributed from a VSTL or the National Software Reference Library to compare federally certified versions against. All or any part of the Trusted Build disks may be encrypted. They should all be labeled as Proprietary Information if applicable and with identification of the vendor and release version based on the vendor's release instructions.	DRE	Pass		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AD1-P3	102	01-Pass	TRUE	TRUE	TRUE	The trusted build of the voting system software, installation programs, and third party software (such as operating systems, drivers, etc.) used to install or to be installed on voting system devices shall be distributed on a write-once media.	DRE	Pass		
AD1-P3	103	04-Fail	TRUE	TRUE	TRUE	The voting system shall allow the system administrative account to verify that the software installed is the certified software by comparing it to the trusted build or other reference information.	DRE	Fail		
AD1-P3	104	04-Fail	TRUE	TRUE	TRUE	The proprietary software shall be installed on the workstation/server and all applicable voting system components by the testing board following the verification of the trusted build, and using the procedures provided by the voting system provider. After installation, the software and firmware shall be verified to the trusted build hash values.	DRE	Fail		
AD1-P3	105	zz-Not Applicable	TRUE	TRUE	TRUE	If the EAC has established a trusted build for the system submitted for certification, the trusted build shall be provided by the EAC. The voting system provider shall execute and submit to the EAC any necessary releases for the EAC to provide the same, and shall provide the Secretary of State's Office with a copy of such executed releases. In addition, the voting system provider shall submit all documentation and instructions necessary for the creation of and guided installation of files contained in the "trusted build" which will be created at the start of functional testing and will be the model tested against. The Secretary of State reserves the right to add additional instructions or guidance for the use of the trusted build when initiating the chain of custody process for a jurisdiction using the specified equipment.	DRE	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AD2-P3	201	04-Fail	TRUE	TRUE	TRUE	The voting system shall allow the system administrative account to verify that the software installed is the certified software by comparing it to the trusted build or other reference information.	PCOS	Fail		
AD2-P3	202	01-Pass	TRUE	TRUE	TRUE	The trusted build of the voting system software, installation programs, and third party software (such as operating systems, drivers, etc.) used to install or to be installed on voting system devices shall be distributed on a write-once media.	PCOS	Pass		
AD2-P3	203	01-Pass	TRUE	TRUE	TRUE	If the EAC does not have a trusted build for the voting system submitted for certification, the voting system provider shall coordinate with the Secretary of State for the establishment of the trusted build. At a minimum this shall include a compilation of files placed on write-once media for which the Secretary of State has observed the chain of custody from time of source code compilation through delivery, and an established hash file distributed from a VSTL or the National Software Reference Library to compare federally certified versions against. All or any part of the Trusted Build disks may be encrypted. They should all be labeled as Proprietary Information if applicable and with identification of the vendor and release version based on the vendor's release instructions.	PCOS	Pass		
AD2-P3	204	04-Fail	TRUE	TRUE	TRUE	The proprietary software shall be installed on the workstation/server and all applicable voting system components by the testing board following the verification of the trusted build, and using the procedures provided by the voting system provider. After installation, the software and firmware shall be verified to the trusted build hash values.	PCOS	Fail		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AD2-P3	205	zz-Not Applicable	TRUE	TRUE	TRUE	If the EAC has established a trusted build for the system submitted for certification, the trusted build shall be provided by the EAC. The voting system provider shall execute and submit to the EAC any necessary releases for the EAC to provide the same, and shall provide the Secretary of State's Office with a copy of such executed releases. In addition, the voting system provider shall submit all documentation and instructions necessary for the creation of and guided installation of files contained in the "trusted build" which will be created at the start of functional testing and will be the model tested against. The Secretary of State reserves the right to add additional instructions or guidance for the use of the trusted build when initiating the chain of custody process for a jurisdiction using the specified equipment.	PCOS	Not Applicable		
AD3-P3	301	01-Pass	TRUE	TRUE	TRUE	The voting system shall allow the system administrative account to verify that the software installed is the certified software by comparing it to the trusted build or other reference information.	CCOS	Pass		
AD3-P3	302	01-Pass	TRUE	TRUE	TRUE	The proprietary software shall be installed on the workstation/server and all applicable voting system components by the testing board following the verification of the trusted build, and using the procedures provided by the voting system provider. After installation, the software and firmware shall be verified to the trusted build hash values.	CCOS	Pass		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AD3-P3	303	zz-Not Applicable	TRUE	TRUE	TRUE	If the EAC has established a trusted build for the system submitted for certification, the trusted build shall be provided by the EAC. The voting system provider shall execute and submit to the EAC any necessary releases for the EAC to provide the same, and shall provide the Secretary of State's Office with a copy of such executed releases. In addition, the voting system provider shall submit all documentation and instructions necessary for the creation of and guided installation of files contained in the "trusted build" which will be created at the start of functional testing and will be the model tested against. The Secretary of State reserves the right to add additional instructions or guidance for the use of the trusted build when initiating the chain of custody process for a jurisdiction using the specified equipment.	CCOS	Not Applicable		
AD3-P3	304	01-Pass	TRUE	TRUE	TRUE	If the EAC does not have a trusted build for the voting system submitted for certification, the voting system provider shall coordinate with the Secretary of State for the establishment of the trusted build. At a minimum this shall include a compilation of files placed on write-once media for which the Secretary of State has observed the chain of custody from time of source code compilation through delivery, and an established hash file distributed from a VSTL or the National Software Reference Library to compare federally certified versions against. All or any part of the Trusted Build disks may be encrypted. They should all be labeled as Proprietary Information if applicable and with identification of the vendor and release version based on the vendor's release instructions.	CCOS	Pass		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AD3-P3	305	01-Pass	TRUE	TRUE	TRUE	The trusted build of the voting system software, installation programs, and third party software (such as operating systems, drivers, etc.) used to install or to be installed on voting system devices shall be distributed on a write-once media.	CCOS	Pass		
AD4-P3	401	01-Pass	TRUE	TRUE	TRUE	The proprietary software shall be installed on the workstation/server and all applicable voting system components by the testing board following the verification of the trusted build, and using the procedures provided by the voting system provider. After installation, the software and firmware shall be verified to the trusted build hash values.	Software	Pass		
AD4-P3	402	01-Pass	TRUE	TRUE	TRUE	The voting system shall allow the system administrative account to verify that the software installed is the certified software by comparing it to the trusted build or other reference information.	Software	Pass		
AD4-P3	403	01-Pass	TRUE	TRUE	TRUE	The trusted build of the voting system software, installation programs, and third party software (such as operating systems, drivers, etc.) used to install or to be installed on voting system devices shall be distributed on a write-once media.	Software	Pass		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AD4-P3	404	01-Pass	TRUE	TRUE	TRUE	If the EAC does not have a trusted build for the voting system submitted for certification, the voting system provider shall coordinate with the Secretary of State for the establishment of the trusted build. At a minimum this shall include a compilation of files placed on write-once media for which the Secretary of State has observed the chain of custody from time of source code compilation through delivery, and an established hash file distributed from a VSTL or the National Software Reference Library to compare federally certified versions against. All or any part of the Trusted Build disks may be encrypted. They should all be labeled as Proprietary Information if applicable and with identification of the vendor and release version based on the vendor's release instructions.	Software	Pass		
AD4-P3	405	zz-Not Applicable	TRUE	TRUE	TRUE	If the EAC has established a trusted build for the system submitted for certification, the trusted build shall be provided by the EAC. The voting system provider shall execute and submit to the EAC any necessary releases for the EAC to provide the same, and shall provide the Secretary of State's Office with a copy of such executed releases. In addition, the voting system provider shall submit all documentation and instructions necessary for the creation of and guided installation of files contained in the "trusted build" which will be created at the start of functional testing and will be the model tested against. The Secretary of State reserves the right to add additional instructions or guidance for the use of the trusted build when initiating the chain of custody process for a jurisdiction using the specified equipment.	Software	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE1-P3	101	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system software shall have functions with fewer than six levels of indented scope, counted as follows: <pre> int function() {   if ( a = true )   1 {     if ( b = true )     2 {       if ( c = true )       3 {         if ( d = true )         4 {           while(e &gt; 0)           5 {             code           }         }       }     }   } } </pre>	DRE	Not Applicable		
AE1-P3	102	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Leftover Debug Code.	DRE	Not Applicable		
AE1-P3	103	zz - Not Applicable	TRUE	TRUE	TRUE	Excluding code generated by commercial code generators, the voting system software code is written in small and easily identifiable modules, with no more than 50% of all modules exceeding 60 lines in length, no more than 5% of all modules exceeding 120 lines in length, and no modules exceeding 240 lines in length. "Lines" in this context, are defined as executable statements or flow control statements with suitable formatting and comments. The reviewer should consider the use of formatting, such as blocking into readable units, which supports the intent of this requirement where the module itself exceeds the limits.	DRE	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE1-P3	104	zz - Not Applicable	TRUE	TRUE	TRUE	Where code generators are used, the voting system software source file segments provided by the code generators shall be marked as such with comments defining the logic invoked and, a copy of the source code provided to the accredited test lab with the generated source code replaced with an unexpanded macro call or its equivalent.	DRE	Not Applicable		
AE1-P3	105	zz - Not Applicable	TRUE	TRUE	TRUE	Upon exit() at any point, the voting system software shall present a message to the operator indicating the reason for the exit().	DRE	Not Applicable		
AE1-P3	106	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system software shall have no line of code exceeding 80 columns in width (including comments and tab expansions) without justification.	DRE	Not Applicable		
AE1-P3	107	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system software shall contain no more than one executable statement and no more than one flow control statement for each line of source code.	DRE	Not Applicable		
AE1-P3	108	zz - Not Applicable	TRUE	TRUE	TRUE	In languages where embedded executable statements are permitted in conditional expressions, the single embedded statement may be considered a part of the conditional expression. Any additional executable statements should be split out to other lines.	DRE	Not Applicable		
AE1-P3	109	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system software shall avoid mixed-mode operations. If mixed mode usage is necessary, then all uses shall be identified and clearly explained by comments.	DRE	Not Applicable		
AE1-P3	110	zz - Not Applicable	TRUE	TRUE	TRUE	All modules of the voting system software shall use the following naming conventions: Names used in code and in documentation shall be consistent.	DRE	Not Applicable		
AE1-P3	111	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system software shall reference variables by fewer than five levels of indirection.	DRE	Not Applicable		
AE1-P3	112	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system software shall initialize every variable upon declaration where permitted.	DRE	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE1-P3	113	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system software shall have all constants other than 0 and 1 defined or enumerated, or shall have a comment which clearly explains what each constant means in the context of its use. Where "0" and "1" have multiple meanings in the code unit, even they shall be identified.	DRE	Not Applicable		
AE1-P3	114	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system software shall only contain the minimum implementation of the "a = b ? c : d" syntax. Expansions such as "a=b?b?c:d:e" are prohibited.	DRE	Not Applicable		
AE1-P3	115	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system software shall have all assert() statements coded such that they are absent from a production compilation. Such coding may be implemented by #ifdefs that remove them from or include them in the compilation. If implemented, the initial program identification in setup should identify that assert() is enabled and active as a test version.	DRE	Not Applicable		
AE1-P3	116	zz - Not Applicable	TRUE	TRUE	TRUE	Control Constructs within the modules shall be limited to the acceptable constructs of Sequence, If-Then-Else, Do-While, Do-Until, Case, and the General Loop (including the special case for loop). If the programming language used does not provide these control constructs, the vendor shall provide comparable control structure logic. The constructs shall be used consistently throughout the code. No other constructs shall be used to control program logic and execution.	DRE	Not Applicable		
AE1-P3	117	zz - Not Applicable	TRUE	TRUE	TRUE	While some programming languages do not create programs as linear processes, stepping from an initial condition through changes to a conclusion, the program components nonetheless contain procedures (such as "methods" in object-oriented languages). In these programming languages, the procedures shall execute through these control constructs or their equivalents, as defined and provided by the vendor.	DRE	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE1-P3	118	zz - Not Applicable	TRUE	TRUE	TRUE	Operator intervention or logic that evaluates received or stored data shall not redirect program control within a program routine. Program control may be redirected within a routine by calling subroutines, procedures, and functions, and by interrupt service routines and exception handlers (due to abnormal error conditions). Do-While (False) constructs and intentional exceptions (used as GoTos) are prohibited.	DRE	Not Applicable		
AE1-P3	119	zz - Not Applicable	TRUE	TRUE	TRUE	All modules of the voting system software shall use the following naming conventions: Object, function, procedure, and variable names shall be chosen to enhance the readability and intelligibility of the program. Names shall be selected so that their parts of speech represent their use, such as nouns to represent objects and verbs to represent functions.	DRE	Not Applicable		
AE1-P3	120	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system software shall use separate and consistent formats to distinguish between normal status and error or exception messages. All messages shall be self-explanatory and shall not require the operator to perform any look-up to interpret them, except for error messages that require resolution by a trained technician.	DRE	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE1-P3	121	zz - Not Applicable	TRUE	TRUE	TRUE	By March 31, 2008, all voting systems submitted for certification shall have application software designed in a modular fashion. COTS software is not required to be inspected for compliance with this requirement. For the purpose of this requirement, "modules" may be compiled or interpreted independently. Modules may also be nested. The modularity rules described here apply to the component sub-modules of a library. The principle to be followed is that the module contains all the elements to compile or interpret successfully and has limited access to data in other modules. The design concept is simple replacement with another module whose interfaces match the original module. All modules shall be designed in accordance with the following requirements for systems submitted for certification after March 31, 2008: Process flow within the modules shall be restricted to combinations of the control structures defined below. This apply to any language feature where program control passes from one activity to the next, such	DRE	Not Applicable		
AE1-P3	122	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following API abuses in accordance with section 45.5.2.4.3: Heap Inspection	DRE	Not Applicable		
AE1-P3	123	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following API abuses in accordance with section 45.5.2.4.3: String Management / Manipulation.	DRE	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE1-P3	124	zz - Not Applicable	TRUE	TRUE	TRUE	As of March 31, 2008 All voting system software submitted for certification shall be in compliance with known software coding standards applicable to the base language of the application. The voting system shall meet the following minimum requirements for software security: Self-modifying, dynamically loaded or interpreted code is prohibited, except under the security provisions outlined in the VVSG. External modification of code during execution shall be prohibited. Where the development environment (programming language and development tools) includes the following features, the software shall provide controls to prevent accidental or deliberate attempts to replace executable code.	DRE	Not Applicable		
AE1-P3	125	zz - Not Applicable	TRUE	TRUE	TRUE	As of March 31, 2008 All voting system software submitted for certification shall be in compliance with known software coding standards applicable to the base language of the application. The voting system shall meet the following minimum requirements for software security: Self-modifying, dynamically loaded or interpreted code is prohibited, except under the security provisions outlined in the VVSG. External modification of code during execution shall be prohibited. Where the development environment (programming language and development tools) includes UNBOUNDED ARRAYS OR STRINGS (INCLUDES BUFFERS USED TO MOVE DATA, the software shall provide controls to prevent accidental or deliberate attempts to replace executable code.	DRE	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE1-P3	126	zz - Not Applicable	TRUE	TRUE	TRUE	As of March 31, 2008 All voting system software submitted for certification shall be in compliance with known software coding standards applicable to the base language of the application. The voting system shall meet the following minimum requirements for software security: Self-modifying, dynamically loaded or interpreted code is prohibited, except under the security provisions outlined in the VVSG. External modification of code during execution shall be prohibited. Where the development environment (programming language and development tools) includes POINTER VARIABLES, the software shall provide controls to prevent accidental or deliberate attempts to replace executable code.	DRE	Not Applicable		
AE1-P3	127	zz - Not Applicable	TRUE	TRUE	TRUE	As of March 31, 2008 All voting system software submitted for certification shall be in compliance with known software coding standards applicable to the base language of the application. The voting system shall meet the following minimum requirements for software security: Self-modifying, dynamically loaded or interpreted code is prohibited, except under the security provisions outlined in the VVSG. External modification of code during execution shall be prohibited. Where the development environment (programming language and development tools) includes DYNAMIC MEMORY ALLOCATION AND MANAGEMENT, the software shall provide controls to prevent accidental or deliberate attempts to replace executable code.	DRE	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE1-P3	128	zz - Not Applicable	TRUE	TRUE	TRUE	By 3/31/08, all voting systems submitted for certification shall have application software designed in a modular fashion. COTS software is not required to be inspected for compliance with this requirement. For the purpose of this requirement, "modules" may be compiled or interpreted independently. Modules may also be nested. The modularity rules described here apply to the component sub-modules of a library. The principle to be followed is that the module contains all the elements to compile or interpret successfully and has limited access to data in other modules. The design concept is simple replacement with another module whose interfaces match the original module. All modules shall be designed in accordance with the following requirements for systems submitted for certification after 3/31/08: Each module shall have a specific function that can be tested and verified independently of the remainder of the code. In practice, some additional modules (such as library modules) may be needed to compile the module under test, but	DRE	Not Applicable		
AE1-P3	129	zz - Not Applicable	TRUE	TRUE	TRUE	Each module shall be uniquely and mnemonically named, using names that differ by more than a single character. In addition to the unique name, the modules shall include a set of header comments identifying the module's purpose, design, conditions, and version history, followed by the operational code. Headers are optional for modules of fewer than ten executable lines where the subject module is embedded in a larger module that has a header containing the header information. Library modules shall also have a header comment describing the purpose of the library and version information.	DRE	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE1-P3	130	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system software shall provide controls to prevent any vote counter from overflowing. Assuming the counter size is large enough such that the value will never be reached does not meet this requirement.	DRE	Not Applicable		
AE1-P3	131	zz - Not Applicable	TRUE	TRUE	TRUE	By March 31, 2008, all voting systems submitted for certification shall have application software designed in a modular fashion. COTS software is not required to be inspected for compliance with this requirement. For the purpose of this requirement, "modules" may be compiled or interpreted independently. Modules may also be nested. The modularity rules described here apply to the component sub-modules of a library. The principle to be followed is that the module contains all the elements to compile or interpret successfully and has limited access to data in other modules. The design concept is simple replacement with another module whose interfaces match the original module. All modules shall be designed in accordance with the following requirements for systems submitted for certification after March 31, 2008: Each module shall have a single entry point, and a single exit point, for normal process flow. For library modules or languages such as the object-oriented languages, the entry point is to the individual contained	DRE	Not Applicable		
AE1-P3	132	zz - Not Applicable	TRUE	TRUE	TRUE	For those languages with unbound arrays, the voting system software shall provide controls to prevent writing beyond the array, string, or buffer boundaries.	DRE	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE1-P3	133	zz - Not Applicable	TRUE	TRUE	TRUE	By March 31, 2008, all voting systems submitted for certification shall have application software designed in a modular fashion. COTS software is not required to be inspected for compliance with this requirement. For the purpose of this requirement, "modules" may be compiled or interpreted independently. Modules may also be nested. The modularity rules described here apply to the component sub-modules of a library. The principle to be followed is that the module contains all the elements to compile or interpret successfully and has limited access to data in other modules. The design concept is simple replacement with another module whose interfaces match the original module. All modules shall be designed in accordance with the following requirements for systems submitted for certification after March 31, 2008: Process flow within the modules shall be restricted to combinations of the control structures defined below. This apply to any language feature where program control passes from one activity to the next, such	DRE	Not Applicable		
AE1-P3	134	zz - Not Applicable	TRUE	TRUE	TRUE	Using the replacement rule to replace one or both of the processes in the Sequence construct with other Sequence constructs, a large block of sequential code may be formed. The entire chain is recognized as a Sequence construct and is sometimes called a BLOCK construct. Sequences shall be marked with special symbols or punctuation to delimit where it starts and where it ends.	DRE	Not Applicable		
AE1-P3	135	zz - Not Applicable	TRUE	TRUE	TRUE	A special case of the GENERAL LOOP is the FOR loop. The FOR loop may be programmed as a DO-WHILE loop. The FOR loop shall execute on a counter. The control FOR statement shall define a counter variable or variables, a test for ending the loop, and a standard method of changing the variable(s) on each pass such as incrementing or decrementing.	DRE	Not Applicable		

33

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE1-P3	136	zz - Not Applicable	TRUE	TRUE	TRUE	The use of the FOR loop shall avoid common errors such as a loop that never ends. The GENERAL LOOP shall not be used where one of the other loop structures will serve. However, if defined in the language, it may be useful in defining some loops where the exit needs to occur in the middle. Also, in other languages the GENERAL LOOP logic may be used to simulate the other control constructs. The use of the GENERAL LOOP shall require the strict enforcement of coding conventions to avoid problems.	DRE	Not Applicable		
AE1-P3	137	zz - Not Applicable	TRUE	TRUE	TRUE	For those languages with pointers or which provide for specifying absolute memory locations, the voting system software shall provide controls that prevent the pointer or address from being used to overwrite executable instructions or to access inappropriate areas where vote counts or audit records are stored.	DRE	Not Applicable		
AE1-P3	138	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system software code shall use uniform calling sequences. All parameters shall either be validated for type and range on entry into each unit or the unit comments shall explicitly identify the type and range for the reference of the programmer and tester. Validation may be performed implicitly by the compiler or explicitly by the programmer.	DRE	Not Applicable		

34

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE1-P3	139	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system software code shall have the return explicitly defined for callable units such as functions or procedures (do not drop through by default) for C-based languages and others to which this applies, and in the case of functions, has the return value explicitly assigned. Where the return is only expected to return a successful value, the C convention of returning zero shall be used. If an uncorrected error occurs so the unit shall return without correctly completing its objective, a non-zero return value shall be given even if there is no expectation of testing the return. An exception may be made where the return value of the function has a data range including zero.	DRE	Not Applicable		
AE1-P3	140	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system software code shall not use macros that contain returns or pass control beyond the next statement.	DRE	Not Applicable		
AE1-P3	141	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system software code shall be indented consistently and clearly to indicate logical levels.	DRE	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE1-P3	142	zz - Not Applicable	TRUE	TRUE	TRUE	By March 31, 2008, all voting systems submitted for certification shall have application software designed in a modular fashion. COTS software is not required to be inspected for compliance with this requirement. For the purpose of this requirement, "modules" may be compiled or interpreted independently. Modules may also be nested. The modularity rules described here apply to the component sub-modules of a library. The principle to be followed is that the module contains all the elements to compile or interpret successfully and has limited access to data in other modules. The design concept is simple replacement with another module whose interfaces match the original module. All modules shall be designed in accordance with the following requirements for systems submitted for certification after March 31, 2008: All required resources, such as data accessed by the module, should either be contained within the module or explicitly identified as input or output to the module. Within the constraints of the programming	DRE	Not Applicable		
AE1-P3	143	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Use After Free;	DRE	Not Applicable		
AE1-P3	144	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following input validations in accordance with section 45.5.2.4.3: SQL Injection.	DRE	Not Applicable		
AE1-P3	145	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Stack Overflow;	DRE	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE1-P3	146	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Heap Overflow;	DRE	Not Applicable		
AE1-P3	147	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Format string vulnerability;	DRE	Not Applicable		
AE1-P3	148	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Improper Null Termination.	DRE	Not Applicable		
AE1-P3	149	zz - Not Applicable	TRUE	TRUE	TRUE	The Application shall not open database tables for direct editing.	DRE	Not Applicable		
AE1-P3	150	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Time-of-check/Time-of-use race condition;	DRE	Not Applicable		
AE1-P3	151	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Overflow of static internal buffer;	DRE	Not Applicable		
AE1-P3	152	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following input validations in accordance with section 45.5.2.4.3: OS Command Injection (also called "Shell Injection");	DRE	Not Applicable		
AE1-P3	153	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Double Free;	DRE	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE1-P3	154	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Unchecked Error Condition;	DRE	Not Applicable		
AE1-P3	155	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Uninitialized variable;	DRE	Not Applicable		
AE1-P3	156	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Unintentional pointer scaling;	DRE	Not Applicable		
AE1-P3	157	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Improper pointer subtraction;	DRE	Not Applicable		
AE1-P3	158	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Null Dereference.	DRE	Not Applicable		
AE1-P3	159	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Private Array-Typed Field Returned from a Public Method;	DRE	Not Applicable		
AE1-P3	160	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Public Data Assigned to Private Array-Typed Field;	DRE	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE1-P3	161	zz - Not Applicable	TRUE	TRUE	TRUE	All modules of the voting system software shall use the following naming conventions: Names shall be unique within an application. Names shall differ by more than a single character. All single-character names are forbidden except those for variables used as loop indexes. In large systems where subsystems tend to be developed independently, duplicate names may be used where the scope of the name is unique within the application. Names shall always be unique where modules are shared.	DRE	Not Applicable		
AE1-P3	162	zz - Not Applicable	TRUE	TRUE	TRUE	For those languages supporting case statements, the voting system software shall have a default choice explicitly defined to catch values not included in the case list.	DRE	Not Applicable		
AE1-P3	163	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Memory Leaks;	DRE	Not Applicable		
AE1-P3	164	zz - Not Applicable	TRUE	TRUE	TRUE	All modules shall contain headers. For small modules of 10 lines or less, the header may be limited to identification of unit and revision information. Other header information should be included in the small unit headers if not clear from the actual lines of code. Header comments shall provide the following information: The purpose of the unit and how it works.	DRE	Not Applicable		
AE1-P3	165	zz - Not Applicable	TRUE	TRUE	TRUE	All modules of the voting system software shall use the following naming conventions: Language keywords shall not be used as names of objects, functions, procedures, variables or in any manner not consistent with the design of the language.	DRE	Not Applicable		
AE1-P3	166	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Unrestricted Critical Resource Lock;	DRE	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE1-P3	167	zz - Not Applicable	TRUE	TRUE	TRUE	All modules of the voting system software shall adhere to basic coding conventions. The vendors shall identify the published, reviewed, and industry-accepted coding conventions used.	DRE	Not Applicable		
AE1-P3	168	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following input validations in accordance with section 45.5.2.4.3: Resource Injection;	DRE	Not Applicable		
AE1-P3	169	zz - Not Applicable	TRUE	TRUE	TRUE	All modules shall contain headers. For small modules of 10 lines or less, the header may be limited to identification of unit and revision information. Other header information should be included in the small unit headers if not clear from the actual lines of code. Header comments shall provide the following information: Other units called and the calling sequence.	DRE	Not Applicable		
AE1-P3	170	zz - Not Applicable	TRUE	TRUE	TRUE	All modules shall contain headers. For small modules of 10 lines or less, the header may be limited to identification of unit and revision information. Other header information should be included in the small unit headers if not clear from the actual lines of code. Header comments shall provide the following information: A description of input parameters and outputs.	DRE	Not Applicable		
AE1-P3	171	zz - Not Applicable	TRUE	TRUE	TRUE	All modules shall contain headers. For small modules of 10 lines or less, the header may be limited to identification of unit and revision information. Other header information should be included in the small unit headers if not clear from the actual lines of code. Header comments shall provide the following information: File references by name and method of access (i.e., read, write, modify or append).	DRE	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE1-P3	172	zz - Not Applicable	TRUE	TRUE	TRUE	All modules shall contain headers. For small modules of 10 lines or less, the header may be limited to identification of unit and revision information. Other header information should be included in the small unit headers if not clear from the actual lines of code. Header comments shall provide the following information: Global variables used.	DRE	Not Applicable		
AE1-P3	173	zz - Not Applicable	TRUE	TRUE	TRUE	All modules shall contain headers. For small modules of 10 lines or less, the header may be limited to identification of unit and revision information. Other header information should be included in the small unit headers if not clear from the actual lines of code. Header comments shall provide the following information: Date of creation and a revision record.	DRE	Not Applicable		
AE1-P3	174	zz - Not Applicable	TRUE	TRUE	TRUE	Descriptive comments shall be provided to identify objects and data types. All variables shall have comments at the point of declaration clearly explaining their use. Where multiple variables that share the same meaning are required, the variables may share the same comment.	DRE	Not Applicable		
AE1-P3	175	zz - Not Applicable	TRUE	TRUE	TRUE	In-line comments shall be provided to facilitate interpretation of functional operations, tests, and branching.	DRE	Not Applicable		
AE1-P3	176	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following input validations in accordance with section 45.5.2.4.3: Path manipulation;	DRE	Not Applicable		
AE1-P3	177	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following input validations in accordance with section 45.5.2.4.3: Cross Site Scripting.Basic X;	DRE	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE1-P3	178	zz - Not Applicable	TRUE	TRUE	TRUE	All modules of the system shall meet the following requirements for installation of software, including hardware with embedded firmware. After initiation of election day testing, no source code or compilers or assemblers shall be resident or accessible.	DRE	Not Applicable		
AE1-P3	179	zz - Not Applicable	TRUE	TRUE	TRUE	All modules of the system shall meet the following requirements for installation of software, including hardware with embedded firmware. The election-specific programming may be installed and resident as firmware, provided that such firmware is installed on a component (such as a computer chip) other than the component on which the operating system resides.	DRE	Not Applicable		
AE1-P3	180	zz - Not Applicable	TRUE	TRUE	TRUE	All modules of the system shall meet the following requirements for installation of software, including hardware with embedded firmware. The voting 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 exception handlers.	DRE	Not Applicable		
AE1-P3	181	zz - Not Applicable	TRUE	TRUE	TRUE	All modules of the system shall meet the following requirements for installation of software, including hardware with embedded firmware. To prevent alteration of executable code, no software shall be permanently installed or resident in the voting system unless the system documentation states that the jurisdiction shall provide a secure physical and procedural environment for the storage, handling, preparation, and transportation of the system hardware.	DRE	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE1-P3	182	zz - Not Applicable	TRUE	TRUE	TRUE	All modules of the system shall meet the following requirements for installation of software, including hardware with embedded firmware. 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.	DRE	Not Applicable		
AE1-P3	183	zz - Not Applicable	TRUE	TRUE	TRUE	All comments shall be formatted in a uniform manner that makes it easy to distinguish them from executable code.	DRE	Not Applicable		
AE1-P3	184	zz - Not Applicable	TRUE	TRUE	TRUE	Assembly code shall contain descriptive and informative comments such that its executable lines can be clearly understood.	DRE	Not Applicable		
AE2-P3	201	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following input validations in accordance with section 45.5.2.4.3: Cross Site Scripting, Basic X;	PCOS	Not Applicable		
AE2-P3	202	zz - Not Applicable	TRUE	TRUE	TRUE	All modules of the system shall meet the following requirements for installation of software, including hardware with embedded firmware. 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.	PCOS	Not Applicable		
AE2-P3	203	zz - Not Applicable	TRUE	TRUE	TRUE	All modules shall contain headers. For small modules of 10 lines or less, the header may be limited to identification of unit and revision information. Other header information should be included in the small unit headers if not clear from the actual lines of code. Header comments shall provide the following information: File references by name and method of access (i.e., read, write, modify or append).	PCOS	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE2-P3	204	zz - Not Applicable	TRUE	TRUE	TRUE	All modules shall contain headers. For small modules of 10 lines or less, the header may be limited to identification of unit and revision information. Other header information should be included in the small unit headers if not clear from the actual lines of code. Header comments shall provide the following information: Global variables used.	PCOS	Not Applicable		
AE2-P3	205	zz - Not Applicable	TRUE	TRUE	TRUE	All modules shall contain headers. For small modules of 10 lines or less, the header may be limited to identification of unit and revision information. Other header information should be included in the small unit headers if not clear from the actual lines of code. Header comments shall provide the following information: Date of creation and a revision record.	PCOS	Not Applicable		
AE2-P3	206	zz - Not Applicable	TRUE	TRUE	TRUE	Descriptive comments shall be provided to identify objects and data types. All variables shall have comments at the point of declaration clearly explaining their use. Where multiple variables that share the same meaning are required, the variables may share the same comment.	PCOS	Not Applicable		
AE2-P3	207	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following input validations in accordance with section 45.5.2.4.3: SQL Injection.	PCOS	Not Applicable		
AE2-P3	208	zz - Not Applicable	TRUE	TRUE	TRUE	Assembly code shall contain descriptive and informative comments such that its executable lines can be clearly understood.	PCOS	Not Applicable		
AE2-P3	209	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Leftover Debug Code.	PCOS	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE2-P3	210	zz - Not Applicable	TRUE	TRUE	TRUE	All modules shall contain headers. For small modules of 10 lines or less, the header may be limited to identification of unit and revision information. Other header information should be included in the small unit headers if not clear from the actual lines of code. Header comments shall provide the following information: A description of input parameters and outputs.	PCOS	Not Applicable		
AE2-P3	211	zz - Not Applicable	TRUE	TRUE	TRUE	All modules of the system shall meet the following requirements for installation of software, including hardware with embedded firmware. To prevent alteration of executable code, no software shall be permanently installed or resident in the voting system unless the system documentation states that the jurisdiction shall provide a secure physical and procedural environment for the storage, handling, preparation, and transportation of the system hardware.	PCOS	Not Applicable		
AE2-P3	212	zz - Not Applicable	TRUE	TRUE	TRUE	All modules of the system shall meet the following requirements for installation of software, including hardware with embedded firmware. The voting 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 exception handlers.	PCOS	Not Applicable		
AE2-P3	213	zz - Not Applicable	TRUE	TRUE	TRUE	All modules of the system shall meet the following requirements for installation of software, including hardware with embedded firmware. The election-specific programming may be installed and resident as firmware, provided that such firmware is installed on a component (such as a computer chip) other than the component on which the operating system resides.	PCOS	Not Applicable		

45

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE2-P3	214	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Improper pointer subtraction.	PCOS	Not Applicable		
AE2-P3	215	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following input validations in accordance with section 45.5.2.4.3: Path manipulation.	PCOS	Not Applicable		
AE2-P3	216	zz - Not Applicable	TRUE	TRUE	TRUE	All modules shall contain headers. For small modules of 10 lines or less, the header may be limited to identification of unit and revision information. Other header information should be included in the small unit headers if not clear from the actual lines of code. Header comments shall provide the following information: Other units called and the calling sequence.	PCOS	Not Applicable		
AE2-P3	217	zz - Not Applicable	TRUE	TRUE	TRUE	In-line comments shall be provided to facilitate interpretation of functional operations, tests, and branching.	PCOS	Not Applicable		
AE2-P3	218	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Public Data Assigned to Private Array-Typed Field.	PCOS	Not Applicable		
AE2-P3	219	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Overflow of static internal buffer.	PCOS	Not Applicable		
AE2-P3	220	zz - Not Applicable	TRUE	TRUE	TRUE	All modules of the system shall meet the following requirements for installation of software, including hardware with embedded firmware. After initiation of election day testing, no source code or compilers or assemblers shall be resident or accessible.	PCOS	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE2-P3	221	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following input validations in accordance with section 45.5.2.4.3: OS Command Injection (also called "Shell Injection");	PCOS	Not Applicable		
AE2-P3	222	zz - Not Applicable	TRUE	TRUE	TRUE	Using the replacement rule to replace one or both of the processes in the Sequence construct with other Sequence constructs, a large block of sequential code may be formed. The entire chain is recognized as a Sequence construct and is sometimes called a BLOCK construct. Sequences shall be marked with special symbols or punctuation to delimit where it starts and where it ends.	PCOS	Not Applicable		
AE2-P3	223	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following API abuses in accordance with section 45.5.2.4.3: Heap Inspection	PCOS	Not Applicable		
AE2-P3	224	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Unrestricted Critical Resource Lock;	PCOS	Not Applicable		
AE2-P3	225	zz - Not Applicable	TRUE	TRUE	TRUE	All modules of the voting system software shall adhere to basic coding conventions. The vendors shall identify the published, reviewed, and industry-accepted coding conventions used.	PCOS	Not Applicable		
AE2-P3	226	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Stack Overflow;	PCOS	Not Applicable		
AE2-P3	227	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Heap Overflow;	PCOS	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE2-P3	228	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Format string vulnerability;	PCOS	Not Applicable		
AE2-P3	229	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Improper Null Termination.	PCOS	Not Applicable		
AE2-P3	230	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following API abuses in accordance with section 45.5.2.4.3: String Management / Manipulation.	PCOS	Not Applicable		
AE2-P3	231	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Time-of-check/Time-of-use race condition;	PCOS	Not Applicable		
AE2-P3	232	zz - Not Applicable	TRUE	TRUE	TRUE	All modules shall contain headers. For small modules of 10 lines or less, the header may be limited to identification of unit and revision information. Other header information should be included in the small unit headers if not clear from the actual lines of code. Header comments shall provide the following information: The purpose of the unit and how it works.	PCOS	Not Applicable		
AE2-P3	233	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Memory Leaks;	PCOS	Not Applicable		
AE2-P3	234	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following input validations in accordance with section 45.5.2.4.3: Resource Injection;	PCOS	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE2-P3	235	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Double Free;	PCOS	Not Applicable		
AE2-P3	236	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Use After Free;	PCOS	Not Applicable		
AE2-P3	237	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Uninitialized variable;	PCOS	Not Applicable		
AE2-P3	238	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Unintentional pointer scaling;	PCOS	Not Applicable		
AE2-P3	239	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Null Dereference.	PCOS	Not Applicable		
AE2-P3	240	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Unchecked Error Condition.	PCOS	Not Applicable		
AE2-P3	241	zz - Not Applicable	TRUE	TRUE	TRUE	All comments shall be formatted in a uniform manner that makes it easy to distinguish them from executable code.	PCOS	Not Applicable		
AE2-P3	242	zz - Not Applicable	TRUE	TRUE	TRUE	The Application shall not open database tables for direct editing.	PCOS	Not Applicable		
AE2-P3	243	zz - Not Applicable	TRUE	TRUE	TRUE	For those languages supporting case statements, the voting system software shall have a default choice explicitly defined to catch values not included in the case list.	PCOS	Not Applicable		

49

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE2-P3	244	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system software shall only contain the minimum implementation of the "a = b ? c : d" syntax. Expansions such as "a?(b?c:d);e;" are prohibited.	PCOS	Not Applicable		
AE2-P3	245	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system software shall have all assert() statements coded such that they are absent from a production compilation. Such coding may be implemented by #def()s that remove them from or include them in the compilation. If implemented, the initial program identification in setup should identify that assert() is enabled and active as a test version.	PCOS	Not Applicable		
AE2-P3	246	zz - Not Applicable	TRUE	TRUE	TRUE	Control Constructs within the modules shall be limited to the acceptable constructs of Sequence, If-Then-Else, Do-While, Do-Until, Case, and the General Loop (including the special case for loop). If the programming language used does not provide these control constructs, the vendor shall provide comparable control structure logic. The constructs shall be used consistently throughout the code. No other constructs shall be used to control program logic and execution.	PCOS	Not Applicable		
AE2-P3	247	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system software shall have functions with fewer than six levels of indented scope, counted as follows: <pre> int function() {   if ( a = true )   1 {     if ( b = true )   2 {       if ( c = true )   3 {         if ( d = true )   4 {           while( e &gt; 0 )   5 {             code           }         }       }     }   } } </pre>	PCOS	Not Applicable		

50

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE2-P3	248	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system software shall reference variables by fewer than five levels of indirection.	PCOS	Not Applicable		
AE2-P3	249	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system software shall use separate and consistent formats to distinguish between normal status and error or exception messages. All messages shall be self-explanatory and shall not require the operator to perform any look-up to interpret them, except for error messages that require resolution by a trained technician.	PCOS	Not Applicable		
AE2-P3	250	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system software shall avoid mixed-mode operations. If mixed mode usage is necessary, then all uses shall be identified and clearly explained by comments.	PCOS	Not Applicable		
AE2-P3	251	zz - Not Applicable	TRUE	TRUE	TRUE	In languages where embedded executable statements are permitted in conditional expressions, the single embedded statement may be considered a part of the conditional expression. Any additional executable statements should be split out to other lines.	PCOS	Not Applicable		
AE2-P3	252	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system software shall have all constants other than 0 and 1 defined or enumerated, or shall have a comment which clearly explains what each constant means in the context of its use. Where "0" and "1" have multiple meanings in the code unit, even they shall be identified.	PCOS	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE2-P3	253	zz - Not Applicable	TRUE	TRUE	TRUE	As of March 31, 2008 All voting system software submitted for certification shall be in compliance with known software coding standards applicable to the base language of the application. The voting system shall meet the following minimum requirements for software security: Self-modifying, dynamically loaded or interpreted code is prohibited, except under the security provisions outlined in the VVSG. External modification of code during execution shall be prohibited. Where the development environment (programming language and development tools) includes DYNAMIC MEMORY ALLOCATION AND MANAGEMENT, the software shall provide controls to prevent accidental or deliberate attempts to replace executable code.	PCOS	Not Applicable		
AE2-P3	254	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system software shall contain no more than one executable statement and no more than one flow control statement for each line of source code.	PCOS	Not Applicable		
AE2-P3	255	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system software shall provide controls to prevent any vote counter from overflowing. Assuming the counter size is large enough such that the value will never be reached does not meet this requirement.	PCOS	Not Applicable		
AE2-P3	256	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system software code shall be indented consistently and clearly to indicate logical levels.	PCOS	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE2-P3	257	zz - Not Applicable	TRUE	TRUE	TRUE	Excluding code generated by commercial code generators, the voting system software code is written in small and easily identifiable modules, with no more than 50% of all modules exceeding 90 lines in length, no more than 5% of all modules exceeding 120 lines in length, and no modules exceeding 240 lines in length. "Lines" in this context, are defined as executable statements or flow control statements with suitable formatting and comments. The reviewer should consider the use of formatting, such as blocking into readable units, which supports the intent of this requirement where the module itself exceeds the limits.	PCOS	Not Applicable		
AE2-P3	258	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system software shall have no line of code exceeding 80 columns in width (including comments and tab expansions) without justification.	PCOS	Not Applicable		
AE2-P3	259	zz - Not Applicable	TRUE	TRUE	TRUE	Operator intervention or logic that evaluates received or stored data shall not redirect program control within a program routine. Program control may be redirected within a routine by calling subroutines, procedures, and functions, and by interrupt service routines and exception handlers (due to abnormal error conditions). Do-While (False) constructs and intentional exceptions (used as GoTos) are prohibited.	PCOS	Not Applicable		
AE2-P3	260	zz - Not Applicable	TRUE	TRUE	TRUE	All modules of the voting system software shall use the following naming conventions: Names shall be unique within an application. Names shall differ by more than a single character. All single-character names are forbidden except those for variables used as loop indexes. In large systems where subsystems tend to be developed independently, duplicate names may be used where the scope of the name is unique within the application. Names shall always be unique where modules are shared.	PCOS	Not Applicable		

53

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE2-P3	261	zz - Not Applicable	TRUE	TRUE	TRUE	All modules of the voting system software shall use the following naming conventions: Object, function, procedure, and variable names shall be chosen to enhance the readability and intelligibility of the program. Names shall be selected so that their parts of speech represent their use, such as nouns to represent objects and verbs to represent functions.	PCOS	Not Applicable		
AE2-P3	262	zz - Not Applicable	TRUE	TRUE	TRUE	All modules of the voting system software shall use the following naming conventions: Names used in code and in documentation shall be consistent.	PCOS	Not Applicable		
AE2-P3	263	zz - Not Applicable	TRUE	TRUE	TRUE	Upon exit() at any point, the voting system software shall present a message to the operator indicating the reason for the exit().	PCOS	Not Applicable		
AE2-P3	264	zz - Not Applicable	TRUE	TRUE	TRUE	As of March 31, 2008 All voting system software submitted for certification shall be in compliance with known software coding standards applicable to the base language of the application. The voting system shall meet the following minimum requirements for software security: Self-modifying, dynamically loaded or interpreted code is prohibited, except under the security provisions outlined in the VVSG. External modification of code during execution shall be prohibited. Where the development environment (programming language and development tools) includes the following features, the software shall provide controls to prevent accidental or deliberate attempts to replace executable code.	PCOS	Not Applicable		

54

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE2-P3	265	zz - Not Applicable	TRUE	TRUE	TRUE	While some programming languages do not create programs as linear processes, stepping from an initial condition through changes to a conclusion, the program components nonetheless contain procedures (such as "methods" in object-oriented languages). In these programming languages, the procedures shall execute through these control constructs or their equivalents, as defined and provided by the vendor.	PCOS	Not Applicable		
AE2-P3	266	zz - Not Applicable	TRUE	TRUE	TRUE	By 3/31/08, all voting systems submitted for certification shall have application software designed in a modular fashion. COTS software is not required to be inspected for compliance with this requirement. For the purpose of this requirement, "modules" may be compiled or interpreted independently. Modules may also be nested. The modularity rules described here apply to the component sub-modules of a library. The principle to be followed is that the module contains all the elements to compile or interpret successfully and has limited access to data in other modules. The design concept is simple replacement with another module whose interfaces match the original module. All modules shall be designed in accordance with the following requirements for systems submitted for certification after 3/31/08: Each module shall have a specific function that can be tested and verified independently of the remainder of the code. In practice, some additional modules (such as library modules) may be needed to compile the module under test, but	PCOS	Not Applicable		
AE2-P3	267	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system software shall initialize every variable upon declaration where permitted.	PCOS	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE2-P3	268	zz - Not Applicable	TRUE	TRUE	TRUE	By March 31, 2008, all voting systems submitted for certification shall have application software designed in a modular fashion. COTS software is not required to be inspected for compliance with this requirement. For the purpose of this requirement, "modules" may be compiled or interpreted independently. Modules may also be nested. The modularity rules described here apply to the component sub-modules of a library. The principle to be followed is that the module contains all the elements to compile or interpret successfully and has limited access to data in other modules. The design concept is simple replacement with another module whose interfaces match the original module. All modules shall be designed in accordance with the following requirements for systems submitted for certification after March 31, 2008: All required resources, such as data accessed by the module, should either be contained within the module or explicitly identified as input or output to the module. Within the constraints of the programming	PCOS	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE2-P3	269	zz - Not Applicable	TRUE	TRUE	TRUE	By March 31, 2008, all voting systems submitted for certification shall have application software designed in a modular fashion. COTS software is not required to be inspected for compliance with this requirement. For the purpose of this requirement, "modules" may be compiled or interpreted independently. Modules may also be nested. The modularity rules described here apply to the component sub-modules of a library. The principle to be followed is that the module contains all the elements to compile or interpret successfully and has limited access to data in other modules. The design concept is simple replacement with another module whose interfaces match the original module. All modules shall be designed in accordance with the following requirements for systems submitted for certification after March 31, 2008: Each module shall have a single entry point, and a single exit point, for normal process flow. For library modules or languages such as the object-oriented languages, the entry point is to the individual contained	PCOS	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE2-P3	270	zz - Not Applicable	TRUE	TRUE	TRUE	By March 31, 2008, all voting systems submitted for certification shall have application software designed in a modular fashion. COTS software is not required to be inspected for compliance with this requirement. For the purpose of this requirement, "modules" may be compiled or interpreted independently. Modules may also be nested. The modularity rules described here apply to the component sub-modules of a library. The principle to be followed is that the module contains all the elements to compile or interpret successfully and has limited access to data in other modules. The design concept is simple replacement with another module whose interfaces match the original module. All modules shall be designed in accordance with the following requirements for systems submitted for certification after March 31, 2008: Process flow within the modules shall be restricted to combinations of the control structures defined below. This apply to any language feature where program control passes from one activity to the next, such	PCOS	Not Applicable		
AE2-P3	271	zz - Not Applicable	TRUE	TRUE	TRUE	Each module shall be uniquely and mnemonically named, using names that differ by more than a single character. In addition to the unique name, the modules shall include a set of header comments identifying the module's purpose, design, conditions, and version history, followed by the operational code. Headers are optional for modules of fewer than ten executable lines where the subject module is embedded in a larger module that has a header containing the header information. Library modules shall also have a header comment describing the purpose of the library and version information.	PCOS	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE2-P3	272	zz - Not Applicable	TRUE	TRUE	TRUE	A special case of the GENERAL LOOP is the FOR loop. The FOR loop may be programmed as a DO-WHILE loop. The FOR loop shall execute on a counter. The control FOR statement shall define a counter variable or variables, a test for ending the loop, and a standard method of changing the variable(s) on each pass such as incrementing or decrementing.	PCOS	Not Applicable		
AE2-P3	273	zz - Not Applicable	TRUE	TRUE	TRUE	The use of the FOR loop shall avoid common errors such as a loop that never ends. The GENERAL LOOP shall not be used where one of the other loop structures will serve. However, if defined in the language, it may be useful in defining some loops where the exit needs to occur in the middle. Also, in other languages the GENERAL LOOP logic may be used to simulate the other control constructs. The use of the GENERAL LOOP shall require the strict enforcement of coding conventions to avoid problems.	PCOS	Not Applicable		
AE2-P3	274	zz - Not Applicable	TRUE	TRUE	TRUE	For those languages with pointers or which provide for specifying absolute memory locations, the voting system software shall provide controls that prevent the pointer or address from being used to overwrite executable instructions or to access inappropriate areas where vote counts or audit records are stored.	PCOS	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE2-P3	275	zz - Not Applicable	TRUE	TRUE	TRUE	As of March 31, 2008 All voting system software submitted for certification shall be in compliance with known software coding standards applicable to the base language of the application. The voting system shall meet the following minimum requirements for software security: Self-modifying, dynamically loaded or interpreted code is prohibited, except under the security provisions outlined in the VVSG. External modification of code during execution shall be prohibited. Where the development environment (programming language and development tools) includes UNBOUNDED ARRAYS OR STRINGS (INCLUDES BUFFERS USED TO MOVE DATA, the software shall provide controls to prevent accidental or deliberate attempts to replace executable code.	PCOS	Not Applicable		
AE2-P3	276	zz - Not Applicable	TRUE	TRUE	TRUE	For those languages with unbound arrays, the voting system software shall provide controls to prevent writing beyond the array, string, or buffer boundaries.	PCOS	Not Applicable		
AE2-P3	277	zz - Not Applicable	TRUE	TRUE	TRUE	All modules of the voting system software shall use the following naming conventions: Language keywords shall not be used as names of objects, functions, procedures, variables or in any manner not consistent with the design of the language.	PCOS	Not Applicable		
AE2-P3	278	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system software code shall use uniform calling sequences. All parameters shall either be validated for type and range on entry into each unit or the unit comments shall explicitly identify the type and range for the reference of the programmer and tester. Validation may be performed implicitly by the compiler or explicitly by the programmer.	PCOS	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE2-P3	279	zz - Not Applicable	TRUE	TRUE	TRUE	As of March 31, 2008 All voting system software submitted for certification shall be in compliance with known software coding standards applicable to the base language of the application. The voting system shall meet the following minimum requirements for software security: Self-modifying, dynamically loaded or interpreted code is prohibited, except under the security provisions outlined in the VVSG. External modification of code during execution shall be prohibited. Where the development environment (programming language and development tools) includes POINTER VARIABLES, the software shall provide controls to prevent accidental or deliberate attempts to replace executable code.	PCOS	Not Applicable		
AE2-P3	280	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Private Array-Typed Field Returned from a Public Method;	PCOS	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE2-P3	281	zz - Not Applicable	TRUE	TRUE	TRUE	By March 31, 2008, all voting systems submitted for certification shall have application software designed in a modular fashion. COTS software is not required to be inspected for compliance with this requirement. For the purpose of this requirement, "modules" may be compiled or interpreted independently. Modules may also be nested. The modularity rules described here apply to the component sub-modules of a library. The principle to be followed is that the module contains all the elements to compile or interpret successfully and has limited access to data in other modules. The design concept is simple replacement with another module whose interfaces match the original module. All modules shall be designed in accordance with the following requirements for systems submitted for certification after March 31, 2008: Process flow within the modules shall be restricted to combinations of the control structures defined below. This apply to any language feature where program control passes from one activity to the next, such	PCOS	Not Applicable		
AE2-P3	282	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system software code shall not use macros that contain returns or pass control beyond the next statement.	PCOS	Not Applicable		
AE2-P3	283	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system software code shall have the return explicitly defined for callable units such as functions or procedures (do not drop through by default) for C-based languages and others to which this applies, and in the case of functions, has the return value explicitly assigned. Where the return is only expected to return a successful value, the C convention of returning zero shall be used. If an uncorrected error occurs so the unit shall return without correctly completing its objective, a non-zero return value shall be given even if there is no expectation of testing the return. An exception may be made where the return value of the function has a data range including zero.	PCOS	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE2-P3	284	zz - Not Applicable	TRUE	TRUE	TRUE	Where code generators are used, the voting system software source file segments provided by the code generators shall be marked as such with comments defining the logic invoked and, a copy of the source code provided to the accredited test lab with the generated source code replaced with an unexpanded macro call or its equivalent.	PCOS	Not Applicable		
AE3-P3	301	zz - Not Applicable	TRUE	TRUE	TRUE	The use of the FOR loop shall avoid common errors such as a loop that never ends. The GENERAL LOOP shall not be used where one of the other loop structures will serve. However, if defined in the language, it may be useful in defining some loops where the exit needs to occur in the middle. Also, in other languages the GENERAL LOOP logic may be used to simulate the other control constructs. The use of the GENERAL LOOP shall require the strict enforcement of coding conventions to avoid problems.	CCOS	Not Applicable		
AE3-P3	302	zz - Not Applicable	TRUE	TRUE	TRUE	All modules of the voting system software shall use the following naming conventions: Language keywords shall not be used as names of objects, functions, procedures, variables or in any manner not consistent with the design of the language.	CCOS	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE3-P3	303	zz - Not Applicable	TRUE	TRUE	TRUE	As of March 31, 2008 All voting system software submitted for certification shall be in compliance with known software coding standards applicable to the base language of the application. The voting system shall meet the following minimum requirements for software security: Self-modifying, dynamically loaded or interpreted code is prohibited, except under the security provisions outlined in the VVSG. External modification of code during execution shall be prohibited. Where the development environment (programming language and development tools) includes UNBOUNDED ARRAYS OR STRINGS (INCLUDES BUFFERS USED TO MOVE DATA, the software shall provide controls to prevent accidental or deliberate attempts to replace executable code.	CCOS	Not Applicable		
AE3-P3	304	zz - Not Applicable	TRUE	TRUE	TRUE	As of March 31, 2008 All voting system software submitted for certification shall be in compliance with known software coding standards applicable to the base language of the application. The voting system shall meet the following minimum requirements for software security: Self-modifying, dynamically loaded or interpreted code is prohibited, except under the security provisions outlined in the VVSG. External modification of code during execution shall be prohibited. Where the development environment (programming language and development tools) includes POINTER VARIABLES, the software shall provide controls to prevent accidental or deliberate attempts to replace executable code.	CCOS	Not Applicable		
AE3-P3	305	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Private Array-Typed Field Returned from a Public Method;	CCOS	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE3-P3	306	zz - Not Applicable	TRUE	TRUE	TRUE	By March 31, 2008, all voting systems submitted for certification shall have application software designed in a modular fashion. COTS software is not required to be inspected for compliance with this requirement. For the purpose of this requirement, "modules" may be compiled or interpreted independently. Modules may also be nested. The modularity rules described here apply to the component sub-modules of a library. The principle to be followed is that the module contains all the elements to compile or interpret successfully and has limited access to data in other modules. The design concept is simple replacement with another module whose interfaces match the original module. All modules shall be designed in accordance with the following requirements for systems submitted for certification after March 31, 2008: Process flow within the modules shall be restricted to combinations of the control structures defined below. This apply to any language feature where program control passes from one activity to the next, such	CCOS	Not Applicable		
AE3-P3	307	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system software code shall not use macros that contain returns or pass control beyond the next statement.	CCOS	Not Applicable		
AE3-P3	308	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system software code shall have the return explicitly defined for callable units such as functions or procedures (do not drop through by default) for C-based languages and others to which this applies, and in the case of functions, has the return value explicitly assigned. Where the return is only expected to return a successful value, the C convention of returning zero shall be used. If an uncorrected error occurs so the unit shall return without correctly completing its objective, a non-zero return value shall be given even if there is no expectation of testing the return. An exception may be made where the return value of the function has a data range including zero.	CCOS	Not Applicable		

65

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE3-P3	309	zz - Not Applicable	TRUE	TRUE	TRUE	All modules of the voting system software shall use the following naming conventions: Object, function, procedure, and variable names shall be chosen to enhance the readability and intelligibility of the program. Names shall be selected so that their parts of speech represent their use, such as nouns to represent objects and verbs to represent functions.	CCOS	Not Applicable		
AE3-P3	310	zz - Not Applicable	TRUE	TRUE	TRUE	For those languages with pointers or which provide for specifying absolute memory locations, the voting system software shall provide controls that prevent the pointer or address from being used to overwrite executable instructions or to access inappropriate areas where vote counts or audit records are stored.	CCOS	Not Applicable		
AE3-P3	311	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system software shall only contain the minimum implementation of the "a = b ? c : d" syntax. Expansions such as "[=a?(b?c:d);e]" are prohibited.	CCOS	Not Applicable		
AE3-P3	312	zz - Not Applicable	TRUE	TRUE	TRUE	A special case of the GENERAL LOOP is the FOR loop. The FOR loop may be programmed as a DO-WHILE loop. The FOR loop shall execute on a counter. The control FOR statement shall define a counter variable or variables, a test for ending the loop, and a standard method of changing the variable(s) on each pass such as incrementing or decrementing.	CCOS	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE3-P3	313	zz - Not Applicable	TRUE	TRUE	TRUE	As of March 31, 2008 All voting system software submitted for certification shall be in compliance with known software coding standards applicable to the base language of the application. The voting system shall meet the following minimum requirements for software security:- Self-modifying, dynamically loaded or interpreted code is prohibited, except under the security provisions outlined in the VVSG. External modification of code during execution shall be prohibited. Where the development environment (programming language and development tools) includes the following features, the software shall provide controls to prevent accidental or deliberate attempts to replace executable code.	CCOS	Not Applicable		
AE3-P3	314	zz - Not Applicable	TRUE	TRUE	TRUE	By March 31, 2008, all voting systems submitted for certification shall have application software designed in a modular fashion. COTS software is not required to be inspected for compliance with this requirement. For the purpose of this requirement, "modules" may be compiled or interpreted independently. Modules may also be nested. The modularity rules described here apply to the component sub-modules of a library. The principle to be followed is that the module contains all the elements to compile or interpret successfully and has limited access to data in other modules. The design concept is simple replacement with another module whose interfaces match the original module. All modules shall be designed in accordance with the following requirements for systems submitted for certification after March 31, 2008: Process flow within the modules shall be restricted to combinations of the control structures defined below. This apply to any language feature where program control passes from one activity to the next, such	CCOS	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE3-P3	315	zz - Not Applicable	TRUE	TRUE	TRUE	For those languages with unbound arrays, the voting system software shall provide controls to prevent writing beyond the array, string, or buffer boundaries.	CCOS	Not Applicable		
AE3-P3	316	zz - Not Applicable	TRUE	TRUE	TRUE	By March 31, 2008, all voting systems submitted for certification shall have application software designed in a modular fashion. COTS software is not required to be inspected for compliance with this requirement. For the purpose of this requirement, "modules" may be compiled or interpreted independently. Modules may also be nested. The modularity rules described here apply to the component sub-modules of a library. The principle to be followed is that the module contains all the elements to compile or interpret successfully and has limited access to data in other modules. The design concept is simple replacement with another module whose interfaces match the original module. All modules shall be designed in accordance with the following requirements for systems submitted for certification after March 31, 2008: Each module shall have a single entry point, and a single exit point, for normal process flow. For library modules or languages such as the object-oriented languages, the entry point is to the individual contained	CCOS	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE3-P3	317	zz - Not Applicable	TRUE	TRUE	TRUE	By March 31, 2008, all voting systems submitted for certification shall have application software designed in a modular fashion. COTS software is not required to be inspected for compliance with this requirement. For the purpose of this requirement, "modules" may be compiled or interpreted independently. Modules may also be nested. The modularity rules described here apply to the component sub-modules of a library. The principle to be followed is that the module contains all the elements to compile or interpret successfully and has limited access to data in other modules. The design concept is simple replacement with another module whose interfaces match the original module. All modules shall be designed in accordance with the following requirements for systems submitted for certification after March 31, 2008: All required resources, such as data accessed by the module, should either be contained within the module or explicitly identified as input or output to the module. Within the constraints of the programming	CCOS	Not Applicable		
AE3-P3	318	zz - Not Applicable	TRUE	TRUE	TRUE	Each module shall be uniquely and mnemonically named, using names that differ by more than a single character. In addition to the unique name, the modules shall include a set of header comments identifying the module's purpose, design, conditions, and version history, followed by the operational code. Headers are optional for modules of fewer than ten executable lines where the subject module is embedded in a larger module that has a header containing the header information. Library modules shall also have a header comment describing the purpose of the library and version information.	CCOS	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE3-P3	319	zz - Not Applicable	TRUE	TRUE	TRUE	By 3/31/08, all voting systems submitted for certification shall have application software designed in a modular fashion. COTS software is not required to be inspected for compliance with this requirement. For the purpose of this requirement, "modules" may be compiled or interpreted independently. Modules may also be nested. The modularity rules described here apply to the component sub-modules of a library. The principle to be followed is that the module contains all the elements to compile or interpret successfully and has limited access to data in other modules. The design concept is simple replacement with another module whose interfaces match the original module. All modules shall be designed in accordance with the following requirements for systems submitted for certification after 3/31/08: Each module shall have a specific function that can be tested and verified independently of the remainder of the code. In practice, some additional modules (such as library modules) may be needed to compile the module under test, but	CCOS	Not Applicable		
AE3-P3	320	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system software code shall use uniform calling sequences. All parameters shall either be validated for type and range on entry into each unit or the unit comments shall explicitly identify the type and range for the reference of the programmer and tester. Validation may be performed implicitly by the compiler or explicitly by the programmer.	CCOS	Not Applicable		
AE3-P3	321	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system software shall contain no more than one executable statement and no more than one flow control statement for each line of source code.	CCOS	Not Applicable		
AE3-P3	322	zz - Not Applicable	TRUE	TRUE	TRUE	All modules of the voting system software shall use the following naming conventions: Names used in code and in documentation shall be consistent.	CCOS	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE3-P3	323	zz - Not Applicable	TRUE	TRUE	TRUE	All modules of the voting system software shall use the following naming conventions: Names shall be unique within an application. Names shall differ by more than a single character. All single-character names are forbidden except those for variables used as loop indexes. In large systems where subsystems tend to be developed independently, duplicate names may be used where the scope of the name is unique within the application. Names shall always be unique where modules are shared.	CCOS	Not Applicable		
AE3-P3	324	zz - Not Applicable	TRUE	TRUE	TRUE	Operator intervention or logic that evaluates received or stored data shall not redirect program control within a program routine. Program control may be redirected within a routine by calling subroutines, procedures, and functions, and by interrupt service routines and exception handlers (due to abnormal error conditions). Do-While (False) constructs and intentional exceptions (used as GoTos) are prohibited.	CCOS	Not Applicable		
AE3-P3	325	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system software shall have no line of code exceeding 80 columns in width (including comments and tab expansions) without justification.	CCOS	Not Applicable		
AE3-P3	326	zz - Not Applicable	TRUE	TRUE	TRUE	Excluding code generated by commercial code generators, the voting system software code is written in small and easily identifiable modules, with no more than 50% of all modules exceeding 60 lines in length, no more than 5% of all modules exceeding 120 lines in length, and no modules exceeding 240 lines in length. "Lines" in this context, are defined as executable statements or flow control statements with suitable formatting and comments. The reviewer should consider the use of formatting, such as blocking into readable units, which supports the intent of this requirement where the module itself exceeds the limits.	CCOS	Not Applicable		

71

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE3-P3	327	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system software code shall be indented consistently and clearly to indicate logical levels.	CCOS	Not Applicable		
AE3-P3	328	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system software shall provide controls to prevent any vote counter from overflowing. Assuming the counter size is large enough such that the value will never be reached does not meet this requirement.	CCOS	Not Applicable		
AE3-P3	329	zz - Not Applicable	TRUE	TRUE	TRUE	For those languages supporting case statements, the voting system software shall have a default choice explicitly defined to catch values not included in the case list.	CCOS	Not Applicable		
AE3-P3	330	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system software shall initialize every variable upon declaration where permitted.	CCOS	Not Applicable		
AE3-P3	331	zz - Not Applicable	TRUE	TRUE	TRUE	Upon exit() at any point, the voting system software shall present a message to the operator indicating the reason for the exit().	CCOS	Not Applicable		
AE3-P3	332	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following API abuses in accordance with section 45.5.2.4.3: Heap Inspection	CCOS	Not Applicable		
AE3-P3	333	zz - Not Applicable	TRUE	TRUE	TRUE	In languages where embedded executable statements are permitted in conditional expressions, the single embedded statement may be considered a part of the conditional expression. Any additional executable statements should be split out to other lines.	CCOS	Not Applicable		
AE3-P3	334	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system software shall avoid mixed-mode operations. If mixed mode usage is necessary, then all uses shall be identified and clearly explained by comments.	CCOS	Not Applicable		
AE3-P3	335	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system software shall use separate and consistent formats to distinguish between normal status and error or exception messages. All messages shall be self-explanatory and shall not require the operator to perform any look-up to interpret them, except for error messages that require resolution by a trained technician.	CCOS	Not Applicable		

72

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE3-P3	336	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system software shall reference variables by fewer than five levels of indirection.	CCOS	Not Applicable		
AE3-P3	337	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system software shall have functions with fewer than six levels of indented scope, counted as follows: <pre> int function() {   if ( a = true )   1 {     if ( b = true )   2 {     if ( c = true )   3 {     if ( d = true )   4 {     while( e &gt; 0 )   5 {     code   } } } } } } </pre>	CCOS	Not Applicable		
AE3-P3	338	zz - Not Applicable	TRUE	TRUE	TRUE	Control Constructs within the modules shall be limited to the acceptable constructs of Sequence, If-Then-Else, Do-While, Do-Until, Case, and the General Loop (including the special case for loop). If the programming language used does not provide these control constructs, the vendor shall provide comparable control structure logic. The constructs shall be used consistently throughout the code. No other constructs shall be used to control program logic and execution.	CCOS	Not Applicable		
AE3-P3	339	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system software shall have all assert() statements coded such that they are absent from a production compilation. Such coding may be implemented by #ifdef()s that remove them from or include them in the compilation. If implemented, the initial program identification in setup should identify that assert() is enabled and active as a test version.	CCOS	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE3-P3	340	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Overflow of static internal buffer;	CCOS	Not Applicable		
AE3-P3	341	zz - Not Applicable	TRUE	TRUE	TRUE	While some programming languages do not create programs as linear processes, stepping from an initial condition through changes to a conclusion, the program components nonetheless contain procedures (such as "methods" in object-oriented languages). In these programming languages, the procedures shall execute through these control constructs or their equivalents, as defined and provided by the vendor.	CCOS	Not Applicable		
AE3-P3	342	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Time-of-check/Time-of-use race condition;	CCOS	Not Applicable		
AE3-P3	343	zz - Not Applicable	TRUE	TRUE	TRUE	As of March 31, 2008 All voting system software submitted for certification shall be in compliance with known software coding standards applicable to the base language of the application. The voting system shall meet the following minimum requirements for software security: Self-modifying, dynamically loaded or interpreted code is prohibited, except under the security provisions outlined in the VVSG. External modification of code during execution shall be prohibited. Where the development environment (programming language and development tools) includes DYNAMIC MEMORY ALLOCATION AND MANAGEMENT, the software shall provide controls to prevent accidental or deliberate attempts to replace executable code.	CCOS	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE3-P3	344	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Unchecked Error Condition.	CCOS	Not Applicable		
AE3-P3	345	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Null Dereference.	CCOS	Not Applicable		
AE3-P3	346	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Unintentional pointer scaling;	CCOS	Not Applicable		
AE3-P3	347	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Uninitialized variable;	CCOS	Not Applicable		
AE3-P3	348	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Use After Free;	CCOS	Not Applicable		
AE3-P3	349	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Double Free;	CCOS	Not Applicable		
AE3-P3	350	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following input validations in accordance with section 45.5.2.4.3: Resource Injection;	CCOS	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE3-P3	351	zz - Not Applicable	TRUE	TRUE	TRUE	All modules shall contain headers. For small modules of 10 lines or less, the header may be limited to identification of unit and revision information. Other header information should be included in the small unit headers if not clear from the actual lines of code. Header comments shall provide the following information: The purpose of the unit and how it works.	CCOS	Not Applicable		
AE3-P3	352	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following input validations in accordance with section 45.5.2.4.3: OS Command Injection (also called "Shell Injection");	CCOS	Not Applicable		
AE3-P3	353	zz - Not Applicable	TRUE	TRUE	TRUE	All modules shall contain headers. For small modules of 10 lines or less, the header may be limited to identification of unit and revision information. Other header information should be included in the small unit headers if not clear from the actual lines of code. Header comments shall provide the following information: Other units called and the calling sequence.	CCOS	Not Applicable		
AE3-P3	354	zz - Not Applicable	TRUE	TRUE	TRUE	The Application shall not open database tables for direct editing.	CCOS	Not Applicable		
AE3-P3	355	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Improper Null Termination.	CCOS	Not Applicable		
AE3-P3	356	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Format string vulnerability;	CCOS	Not Applicable		
AE3-P3	357	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Heap Overflow;	CCOS	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE3-P3	358	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Stack Overflow;	CCOS	Not Applicable		
AE3-P3	359	zz - Not Applicable	TRUE	TRUE	TRUE	All modules of the voting system software shall adhere to basic coding conventions. The vendors shall identify the published, reviewed, and industry-accepted coding conventions used.	CCOS	Not Applicable		
AE3-P3	360	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Unrestricted Critical Resource Lock;	CCOS	Not Applicable		
AE3-P3	361	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following API abuses in accordance with section 45.5.2.4.3: String Management / Manipulation.	CCOS	Not Applicable		
AE3-P3	362	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Memory Leaks;	CCOS	Not Applicable		
AE3-P3	363	zz - Not Applicable	TRUE	TRUE	TRUE	All modules of the system shall meet the following requirements for installation of software, including hardware with embedded firmware. If software is resident in the system as firmware, the vendor shall require and slate in the system documentation that every device is to be retested to validate each ROM prior to the start of elections operations.	CCOS	Not Applicable		
AE3-P3	364	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system software shall have all constants other than 0 and 1 defined or enumerated, or shall have a comment which clearly explains what each constant means in the context of its use. Where "0" and "1" have multiple meanings in the code unit, even they shall be identified.	CCOS	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE3-P3	365	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Improper pointer subtraction;	CCOS	Not Applicable		
AE3-P3	366	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Public Data Assigned to Private Array-Typed Field;	CCOS	Not Applicable		
AE3-P3	367	zz - Not Applicable	TRUE	TRUE	TRUE	In-line comments shall be provided to facilitate interpretation of functional operations, tests, and branching.	CCOS	Not Applicable		
AE3-P3	368	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following input validations in accordance with section 45.5.2.4.3: Cross Site Scripting, Basic X;	CCOS	Not Applicable		
AE3-P3	369	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following input validations in accordance with section 45.5.2.4.3: Path manipulation;	CCOS	Not Applicable		
AE3-P3	370	zz - Not Applicable	TRUE	TRUE	TRUE	All modules of the system shall meet the following requirements for installation of software, including hardware with embedded firmware. After initiation of election day testing, no source code or compilers or assemblers shall be resident or accessible.	CCOS	Not Applicable		
AE3-P3	371	zz - Not Applicable	TRUE	TRUE	TRUE	All modules of the system shall meet the following requirements for installation of software, including hardware with embedded firmware. The election-specific programming may be installed and resident as firmware, provided that such firmware is installed on a component (such as a computer chip) other than the component on which the operating system resides.	CCOS	Not Applicable		
AE3-P3	372	zz - Not Applicable	TRUE	TRUE	TRUE	All comments shall be formatted in a uniform manner that makes it easy to distinguish them from executable code.	CCOS	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE3-P3	373	zz - Not Applicable	TRUE	TRUE	TRUE	All modules of the system shall meet the following requirements for installation of software, including hardware with embedded firmware. To prevent alteration of executable code, no software shall be permanently installed or resident in the voting system unless the system documentation states that the jurisdiction shall provide a secure physical and procedural environment for the storage, handling, preparation, and transportation of the system hardware.	CCOS	Not Applicable		
AE3-P3	374	zz - Not Applicable	TRUE	TRUE	TRUE	Using the replacement rule to replace one or both of the processes in the Sequence construct with other Sequence constructs, a large block of sequential code may be formed. The entire chain is recognized as a Sequence construct and is sometimes called a BLOCK construct. Sequences shall be marked with special symbols or punctuation to delimit where it starts and where it ends.	CCOS	Not Applicable		
AE3-P3	375	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Leftover Debug Code.	CCOS	Not Applicable		
AE3-P3	376	zz - Not Applicable	TRUE	TRUE	TRUE	Assembly code shall contain descriptive and informative comments such that its executable lines can be clearly understood.	CCOS	Not Applicable		
AE3-P3	377	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following input validations in accordance with section 45.5.2.4.3: SQL Injection.	CCOS	Not Applicable		
AE3-P3	378	zz - Not Applicable	TRUE	TRUE	TRUE	Descriptive comments shall be provided to identify objects and data types. All variables shall have comments at the point of declaration clearly explaining their use. Where multiple variables that share the same meaning are required, the variables may share the same comment.	CCOS	Not Applicable		

79

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE3-P3	379	zz - Not Applicable	TRUE	TRUE	TRUE	All modules shall contain headers. For small modules of 10 lines or less, the header may be limited to identification of unit and revision information. Other header information should be included in the small unit headers if not clear from the actual lines of code. Header comments shall provide the following information: Date of creation and a revision record.	CCOS	Not Applicable		
AE3-P3	380	zz - Not Applicable	TRUE	TRUE	TRUE	All modules shall contain headers. For small modules of 10 lines or less, the header may be limited to identification of unit and revision information. Other header information should be included in the small unit headers if not clear from the actual lines of code. Header comments shall provide the following information: Global variables used.	CCOS	Not Applicable		
AE3-P3	381	zz - Not Applicable	TRUE	TRUE	TRUE	All modules shall contain headers. For small modules of 10 lines or less, the header may be limited to identification of unit and revision information. Other header information should be included in the small unit headers if not clear from the actual lines of code. Header comments shall provide the following information: File references by name and method of access (i.e., read, write, modify or append).	CCOS	Not Applicable		
AE3-P3	382	zz - Not Applicable	TRUE	TRUE	TRUE	All modules shall contain headers. For small modules of 10 lines or less, the header may be limited to identification of unit and revision information. Other header information should be included in the small unit headers if not clear from the actual lines of code. Header comments shall provide the following information: A description of input parameters and outputs.	CCOS	Not Applicable		

80

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE3-P3	383	zz - Not Applicable	TRUE	TRUE	TRUE	All modules of the system shall meet the following requirements for installation of software, including hardware with embedded firmware. The voting 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 exception handlers.	CCOS	Not Applicable		
AE3-P3	384	zz - Not Applicable	TRUE	TRUE	TRUE	Where code generators are used, the voting system software source file segments provided by the code generators shall be marked as such with comments defining the logic invoked and, a copy of the source code provided to the accredited test lab with the generated source code replaced with an unexpanded macro call or its equivalent.	CCOS	Not Applicable		
AE4-P3	401	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system software code shall use uniform calling sequences. All parameters shall either be validated for type and range on entry into each unit or the unit comments shall explicitly identify the type and range for the reference of the programmer and tester. Validation may be performed implicitly by the compiler or explicitly by the programmer.	Software	Not Applicable		
AE4-P3	402	zz - Not Applicable	TRUE	TRUE	TRUE	Where code generators are used, the voting system software source file segments provided by the code generators shall be marked as such with comments defining the logic invoked and, a copy of the source code provided to the accredited test lab with the generated source code replaced with an unexpanded macro call or its equivalent.	Software	Not Applicable		
AE4-P3	403	zz - Not Applicable	TRUE	TRUE	TRUE	All modules of the voting system software shall use the following naming conventions: Language keywords shall not be used as names of objects, functions, procedures, variables or in any manner not consistent with the design of the language.	Software	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE4-P3	404	zz - Not Applicable	TRUE	TRUE	TRUE	As of March 31, 2008 All voting system software submitted for certification shall be in compliance with known software coding standards applicable to the base language of the application. The voting system shall meet the following minimum requirements for software security: Self-modifying, dynamically loaded or interpreted code is prohibited, except under the security provisions outlined in the VVSG. External modification of code during execution shall be prohibited. Where the development environment (programming language and development tools) includes UNBOUNDED ARRAYS OR STRINGS (INCLUDES BUFFERS USED TO MOVE DATA, the software shall provide controls to prevent accidental or deliberate attempts to replace executable code.	Software	Not Applicable		
AE4-P3	405	zz - Not Applicable	TRUE	TRUE	TRUE	As of March 31, 2008 All voting system software submitted for certification shall be in compliance with known software coding standards applicable to the base language of the application. The voting system shall meet the following minimum requirements for software security: Self-modifying, dynamically loaded or interpreted code is prohibited, except under the security provisions outlined in the VVSG. External modification of code during execution shall be prohibited. Where the development environment (programming language and development tools) includes POINTER VARIABLES, the software shall provide controls to prevent accidental or deliberate attempts to replace executable code.	Software	Not Applicable		
AE4-P3	406	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Private Array-Typed Field Returned from a Public Method;	Software	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE4-P3	407	zz - Not Applicable	TRUE	TRUE	TRUE	By March 31, 2008, all voting systems submitted for certification shall have application software designed in a modular fashion. COTS software is not required to be inspected for compliance with this requirement. For the purpose of this requirement, "modules" may be compiled or interpreted independently. Modules may also be nested. The modularity rules described here apply to the component sub-modules of a library. The principle to be followed is that the module contains all the elements to compile or interpret successfully and has limited access to data in other modules. The design concept is simple replacement with another module whose interfaces match the original module. All modules shall be designed in accordance with the following requirements for systems submitted for certification after March 31, 2008: Process flow within the modules shall be restricted to combinations of the control structures defined below. This apply to any language feature where program control passes from one activity to the next, such	Software	Not Applicable		
AE4-P3	408	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system software code shall not use macros that contain returns or pass control beyond the next statement.	Software	Not Applicable		
AE4-P3	409	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system software code shall have the return explicitly defined for callable units such as functions or procedures (do not drop through by default) for C-based languages and others to which this applies, and in the case of functions, has the return value explicitly assigned. Where the return is only expected to return a successful value, the C convention of returning zero shall be used. If an uncorrected error occurs so the unit shall return without correctly completing its objective, a non-zero return value shall be given even if there is no expectation of testing the return. An exception may be made where the return value of the function has a data range including zero.	Software	Not Applicable		

83

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE4-P3	410	zz - Not Applicable	TRUE	TRUE	TRUE	For those languages with pointers or which provide for specifying absolute memory locations, the voting system software shall provide controls that prevent the pointer or address from being used to overwrite executable instructions or to access inappropriate areas where vote counts or audit records are stored.	Software	Not Applicable		
AE4-P3	411	zz - Not Applicable	TRUE	TRUE	TRUE	The use of the FOR loop shall avoid common errors such as a loop that never ends. The GENERAL LOOP shall not be used where one of the other loop structures will serve. However, if defined in the language, it may be useful in defining some loops where the exit needs to occur in the middle. Also, in other languages the GENERAL LOOP logic may be used to simulate the other control constructs. The use of the GENERAL LOOP shall require the strict enforcement of coding conventions to avoid problems.	Software	Not Applicable		
AE4-P3	412	zz - Not Applicable	TRUE	TRUE	TRUE	A special case of the GENERAL LOOP is the FOR loop. The FOR loop may be programmed as a DO-WHILE loop. The FOR loop shall execute on a counter. The control FOR statement shall define a counter variable or variables, a test for ending the loop, and a standard method of changing the variable(s) on each pass such as incrementing or decrementing.	Software	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE4-P3	413	zz - Not Applicable	TRUE	TRUE	TRUE	As of March 31, 2008 All voting system software submitted for certification shall be in compliance with known software coding standards applicable to the base language of the application. The voting system shall meet the following minimum requirements for software security:- Self-modifying, dynamically loaded or interpreted code is prohibited, except under the security provisions outlined in the VVSG. External modification of code during execution shall be prohibited. Where the development environment (programming language and development tools) includes the following features, the software shall provide controls to prevent accidental or deliberate attempts to replace executable code.	Software	Not Applicable		
AE4-P3	414	zz - Not Applicable	TRUE	TRUE	TRUE	By March 31, 2008, all voting systems submitted for certification shall have application software designed in a modular fashion. COTS software is not required to be inspected for compliance with this requirement. For the purpose of this requirement, "modules" may be compiled or interpreted independently. Modules may also be nested. The modularity rules described here apply to the component sub-modules of a library. The principle to be followed is that the module contains all the elements to compile or interpret successfully and has limited access to data in other modules. The design concept is simple replacement with another module whose interfaces match the original module. All modules shall be designed in accordance with the following requirements for systems submitted for certification after March 31, 2008: Process flow within the modules shall be restricted to combinations of the control structures defined below. This apply to any language feature where program control passes from one activity to the next, such	Software	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE4-P3	415	zz - Not Applicable	TRUE	TRUE	TRUE	For those languages with unbound arrays, the voting system software shall provide controls to prevent writing beyond the array, string, or buffer boundaries.	Software	Not Applicable		
AE4-P3	416	zz - Not Applicable	TRUE	TRUE	TRUE	By March 31, 2008, all voting systems submitted for certification shall have application software designed in a modular fashion. COTS software is not required to be inspected for compliance with this requirement. For the purpose of this requirement, "modules" may be compiled or interpreted independently. Modules may also be nested. The modularity rules described here apply to the component sub-modules of a library. The principle to be followed is that the module contains all the elements to compile or interpret successfully and has limited access to data in other modules. The design concept is simple replacement with another module whose interfaces match the original module. All modules shall be designed in accordance with the following requirements for systems submitted for certification after March 31, 2008: Each module shall have a single entry point, and a single exit point, for normal process flow. For library modules or languages such as the object-oriented languages, the entry point is to the individual contained	Software	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE4-P3	417	zz - Not Applicable	TRUE	TRUE	TRUE	By March 31, 2008, all voting systems submitted for certification shall have application software designed in a modular fashion. COTS software is not required to be inspected for compliance with this requirement. For the purpose of this requirement, "modules" may be compiled or interpreted independently. Modules may also be nested. The modularity rules described here apply to the component sub-modules of a library. The principle to be followed is that the module contains all the elements to compile or interpret successfully and has limited access to data in other modules. The design concept is simple replacement with another module whose interfaces match the original module. All modules shall be designed in accordance with the following requirements for systems submitted for certification after March 31, 2008: All required resources, such as data accessed by the module, should either be contained within the module or explicitly identified as input or output to the module. Within the constraints of the programming	Software	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE4-P3	418	zz - Not Applicable	TRUE	TRUE	TRUE	By 3/31/08, all voting systems submitted for certification shall have application software designed in a modular fashion. COTS software is not required to be inspected for compliance with this requirement. For the purpose of this requirement, "modules" may be compiled or interpreted independently. Modules may also be nested. The modularity rules described here apply to the component sub-modules of a library. The principle to be followed is that the module contains all the elements to compile or interpret successfully and has limited access to data in other modules. The design concept is simple replacement with another module whose interfaces match the original module. All modules shall be designed in accordance with the following requirements for systems submitted for certification after 3/31/08: Each module shall have a specific function that can be tested and verified independently of the remainder of the code. In practice, some additional modules (such as library modules) may be needed to compile the module under test, but	Software	Not Applicable		
AE4-P3	419	zz - Not Applicable	TRUE	TRUE	TRUE	All modules of the voting system software shall use the following naming conventions: Names used in code and in documentation shall be consistent.	Software	Not Applicable		
AE4-P3	420	zz - Not Applicable	TRUE	TRUE	TRUE	Each module shall be uniquely and mnemonically named, using names that differ by more than a single character. In addition to the unique name, the modules shall include a set of header comments identifying the module's purpose, design, conditions, and version history, followed by the operational code. Headers are optional for modules of fewer than ten executable lines where the subject module is embedded in a larger module that has a header containing the header information. Library modules shall also have a header comment describing the purpose of the library and version information.	Software	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE4-P3	421	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system software shall contain no more than one executable statement and no more than one flow control statement for each line of source code.	Software	Not Applicable		
AE4-P3	422	zz - Not Applicable	TRUE	TRUE	TRUE	All modules shall contain headers. For small modules of 10 lines or less, the header may be limited to identification of unit and revision information. Other header information should be included in the small unit headers if not clear from the actual lines of code. Header comments shall provide the following information: The purpose of the unit and how it works.	Software	Not Applicable		
AE4-P3	423	zz - Not Applicable	TRUE	TRUE	TRUE	All modules of the voting system software shall use the following naming conventions: Names shall be unique within an application. Names shall differ by more than a single character. All single-character names are forbidden except those for variables used as loop indexes. In large systems where subsystems tend to be developed independently, duplicate names may be used where the scope of the name is unique within the application. Names shall always be unique where modules are shared.	Software	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE4-P3	424	zz - Not Applicable	TRUE	TRUE	TRUE	As of March 31, 2008 All voting system software submitted for certification shall be in compliance with known software coding standards applicable to the base language of the application. The voting system shall meet the following minimum requirements for software security: Self-modifying, dynamically loaded or interpreted code is prohibited, except under the security provisions outlined in the VVSG. External modification of code during execution shall be prohibited. Where the development environment (programming language and development tools) includes DYNAMIC MEMORY ALLOCATION AND MANAGEMENT, the software shall provide controls to prevent accidental or deliberate attempts to replace executable code.	Software	Not Applicable		
AE4-P3	425	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system software shall have no line of code exceeding 80 columns in width (including comments and tab expansions) without justification.	Software	Not Applicable		
AE4-P3	426	zz - Not Applicable	TRUE	TRUE	TRUE	Excluding code generated by commercial code generators, the voting system software code is written in small and easily identifiable modules, with no more than 50% of all modules exceeding 60 lines in length, no more than 5% of all modules exceeding 120 lines in length, and no modules exceeding 240 lines in length. "Lines" in this context, are defined as executable statements or flow control statements with suitable formatting and comments. The reviewer should consider the use of formatting, such as blocking into readable units, which supports the intent of this requirement where the module itself exceeds the limits.	Software	Not Applicable		
AE4-P3	427	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system software code shall be indented consistently and clearly to indicate logical levels.	Software	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE4-P3	428	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system software shall provide controls to prevent any vote counter from overflowing. Assuming the counter size is large enough such that the value will never be reached does not meet this requirement.	Software	Not Applicable		
AE4-P3	429	zz - Not Applicable	TRUE	TRUE	TRUE	For those languages supporting case statements, the voting system software shall have a default choice explicitly defined to catch values not included in the case list.	Software	Not Applicable		
AE4-P3	430	zz - Not Applicable	TRUE	TRUE	TRUE	Operator intervention or logic that evaluates received or stored data shall not redirect program control within a program routine. Program control may be redirected within a routine by calling subroutines, procedures, and functions, and by interrupt service routines and exception handlers (due to abnormal error conditions). Do-While (False) constructs and intentional exceptions (used as GoTos) are prohibited.	Software	Not Applicable		
AE4-P3	431	zz - Not Applicable	TRUE	TRUE	TRUE	Upon exit() at any point, the voting system software shall present a message to the operator indicating the reason for the exit().	Software	Not Applicable		
AE4-P3	432	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system software shall initialize every variable upon declaration where permitted.	Software	Not Applicable		
AE4-P3	433	zz - Not Applicable	TRUE	TRUE	TRUE	In languages where embedded executable statements are permitted in conditional expressions, the single embedded statement may be considered a part of the conditional expression. Any additional executable statements should be split out to other lines.	Software	Not Applicable		
AE4-P3	434	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system software shall avoid mixed-mode operations. If mixed mode usage is necessary, then all uses shall be identified and clearly explained by comments.	Software	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE4-P3	435	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system software shall use separate and consistent formats to distinguish between normal status and error or exception messages. All messages shall be self-explanatory and shall not require the operator to perform any look-up to interpret them, except for error messages that require resolution by a trained technician.	Software	Not Applicable		
AE4-P3	436	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system software shall reference variables by fewer than five levels of indirection.	Software	Not Applicable		
AE4-P3	437	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system software shall have functions with fewer than six levels of indented scope, counted as follows: <pre> int function() {   if ( a = true )   1 {     if ( b = true )     2 {       if ( c = true )       3 {         if ( d = true )         4 {           while(e &gt; 0)           5 {             code           }         }       }     }   } } </pre>	Software	Not Applicable		
AE4-P3	438	zz - Not Applicable	TRUE	TRUE	TRUE	Control Constructs within the modules shall be limited to the acceptable constructs of Sequence, If-Then-Else, Do-While, Do-Until, Case, and the General Loop (including the special case for loop). If the programming language used does not provide these control constructs, the vendor shall provide comparable control structure logic. The constructs shall be used consistently throughout the code. No other constructs shall be used to control program logic and execution.	Software	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE4-P3	439	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system software shall have all assert() statements coded such that they are absent from a production compilation. Such coding may be implemented by #def()s that remove them from or include them in the compilation. If implemented, the initial program identification in setup should identify that assert() is enabled and active as a test version.	Software	Not Applicable		
AE4-P3	440	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system software shall only contain the minimum implementation of the "a = b ? c : d" syntax. Expansions such as "a=b?(b?c:d)a;" are prohibited.	Software	Not Applicable		
AE4-P3	441	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system software shall have all constants other than 0 and 1 defined or enumerated, or shall have a comment which clearly explains what each constant means in the context of its use. Where "0" and "1" have multiple meanings in the code unit, even they shall be identified.	Software	Not Applicable		
AE4-P3	442	zz - Not Applicable	TRUE	TRUE	TRUE	While some programming languages do not create programs as linear processes, stepping from an initial condition through changes to a conclusion, the program components nonetheless contain procedures (such as "methods" in object-oriented languages). In these programming languages, the procedures shall execute through these control constructs or their equivalents, as defined and provided by the vendor.	Software	Not Applicable		
AE4-P3	443	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Improper Null Termination.	Software	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE4-P3	444	zz - Not Applicable	TRUE	TRUE	TRUE	All modules shall contain headers. For small modules of 10 lines or less, the header may be limited to identification of unit and revision information. Other header information should be included in the small unit headers if not clear from the actual lines of code. Header comments shall provide the following information: A description of input parameters and outputs.	Software	Not Applicable		
AE4-P3	445	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Unintentional pointer scaling;	Software	Not Applicable		
AE4-P3	446	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Uninitialized variable;	Software	Not Applicable		
AE4-P3	447	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Use After Free;	Software	Not Applicable		
AE4-P3	448	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Double Free;	Software	Not Applicable		
AE4-P3	449	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following input validations in accordance with section 45.5.2.4.3: Resource Injection;	Software	Not Applicable		
AE4-P3	450	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Memory Leaks;	Software	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE4-P3	451	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following input validations in accordance with section 45.5.2.4.3: OS Command Injection (also called "Shell Injection");	Software	Not Applicable		
AE4-P3	452	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Unchecked Error Condition.	Software	Not Applicable		
AE4-P3	453	zz - Not Applicable	TRUE	TRUE	TRUE	The Application shall not open database tables for direct editing.	Software	Not Applicable		
AE4-P3	454	zz - Not Applicable	TRUE	TRUE	TRUE	All comments shall be formatted in a uniform manner that makes it easy to distinguish them from executable code.	Software	Not Applicable		
AE4-P3	455	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Format string vulnerability;	Software	Not Applicable		
AE4-P3	456	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Heap Overflow;	Software	Not Applicable		
AE4-P3	457	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Stack Overflow;	Software	Not Applicable		
AE4-P3	458	zz - Not Applicable	TRUE	TRUE	TRUE	All modules of the voting system software shall adhere to basic coding conventions. The vendors shall identify the published, reviewed, and industry-accepted coding conventions used.	Software	Not Applicable		
AE4-P3	459	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Unrestricted Critical Resource Lock;	Software	Not Applicable		

95

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE4-P3	460	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following API abuses in accordance with section 45.5.2.4.3: String Management / Manipulation.	Software	Not Applicable		
AE4-P3	461	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following API abuses in accordance with section 45.5.2.4.3: Heap Inspection	Software	Not Applicable		
AE4-P3	462	zz - Not Applicable	TRUE	TRUE	TRUE	All modules of the voting system software shall use the following naming conventions: Object, function, procedure, and variable names shall be chosen to enhance the readability and intelligibility of the program. Names shall be selected so that their parts of speech represent their use, such as nouns to represent objects and verbs to represent functions.	Software	Not Applicable		
AE4-P3	463	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Time-of-check/Time-of-use race condition;	Software	Not Applicable		
AE4-P3	464	zz - Not Applicable	TRUE	TRUE	TRUE	All modules of the system shall meet the following requirements for installation of software, including hardware with embedded firmware. 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.	Software	Not Applicable		
AE4-P3	465	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Overflow of static internal buffer;	Software	Not Applicable		

96

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE4-P3	466	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Improper pointer subtraction;	Software	Not Applicable		
AE4-P3	467	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Public Data Assigned to Private Array-Typed Field;	Software	Not Applicable		
AE4-P3	468	zz - Not Applicable	TRUE	TRUE	TRUE	In-line comments shall be provided to facilitate interpretation of functional operations, tests, and branching.	Software	Not Applicable		
AE4-P3	469	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following input validations in accordance with section 45.5.2.4.3: Cross Site Scripting, Basic X;	Software	Not Applicable		
AE4-P3	470	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following input validations in accordance with section 45.5.2.4.3: Path manipulation;	Software	Not Applicable		
AE4-P3	471	zz - Not Applicable	TRUE	TRUE	TRUE	All modules of the system shall meet the following requirements for installation of software, including hardware with embedded firmware. After initiation of election day testing, no source code or compilers or assemblers shall be resident or accessible.	Software	Not Applicable		
AE4-P3	472	zz - Not Applicable	TRUE	TRUE	TRUE	All modules of the system shall meet the following requirements for installation of software, including hardware with embedded firmware. The election-specific programming may be installed and resident as firmware, provided that such firmware is installed on a component (such as a computer chip) other than the component on which the operating system resides.	Software	Not Applicable		

97

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE4-P3	473	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Null Dereference.	Software	Not Applicable		
AE4-P3	474	zz - Not Applicable	TRUE	TRUE	TRUE	All modules of the system shall meet the following requirements for installation of software, including hardware with embedded firmware. To prevent alteration of executable code, no software shall be permanently installed or resident in the voting system unless the system documentation states that the jurisdiction shall provide a secure physical and procedural environment for the storage, handling, preparation, and transportation of the system hardware.	Software	Not Applicable		
AE4-P3	475	zz - Not Applicable	TRUE	TRUE	TRUE	Using the replacement rule to replace one or both of the processes in the Sequence construct with other Sequence constructs, a large block of sequential code may be formed. The entire chain is recognized as a Sequence construct and is sometimes called a BLOCK construct. Sequences shall be marked with special symbols or punctuation to delimit where it starts and where it ends.	Software	Not Applicable		
AE4-P3	476	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following encapsulation conditions in accordance with section 45.5.2.4.3: Leftover Debug Code.	Software	Not Applicable		
AE4-P3	477	zz - Not Applicable	TRUE	TRUE	TRUE	Assembly code shall contain descriptive and informative comments such that its executable lines can be clearly understood.	Software	Not Applicable		
AE4-P3	478	zz - Not Applicable	TRUE	TRUE	TRUE	Independent analysis will test for the following conditions and report on absence or presence of the following input validations in accordance with section 45.5.2.4.3: SQL Injection.	Software	Not Applicable		

98

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE4-P3	479	zz - Not Applicable	TRUE	TRUE	TRUE	Descriptive comments shall be provided to identify objects and data types. All variables shall have comments at the point of declaration clearly explaining their use. Where multiple variables that share the same meaning are required, the variables may share the same comment.	Software	Not Applicable		
AE4-P3	480	zz - Not Applicable	TRUE	TRUE	TRUE	All modules shall contain headers. For small modules of 10 lines or less, the header may be limited to identification of unit and revision information. Other header information should be included in the small unit headers if not clear from the actual lines of code. Header comments shall provide the following information: Date of creation and a revision record.	Software	Not Applicable		
AE4-P3	481	zz - Not Applicable	TRUE	TRUE	TRUE	All modules shall contain headers. For small modules of 10 lines or less, the header may be limited to identification of unit and revision information. Other header information should be included in the small unit headers if not clear from the actual lines of code. Header comments shall provide the following information: Global variables used.	Software	Not Applicable		
AE4-P3	482	zz - Not Applicable	TRUE	TRUE	TRUE	All modules shall contain headers. For small modules of 10 lines or less, the header may be limited to identification of unit and revision information. Other header information should be included in the small unit headers if not clear from the actual lines of code. Header comments shall provide the following information: File references by name and method of access (i.e., read, write, modify or append).	Software	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
AE4-P3	483	zz - Not Applicable	TRUE	TRUE	TRUE	All modules shall contain headers. For small modules of 10 lines or less, the header may be limited to identification of unit and revision information. Other header information should be included in the small unit headers if not clear from the actual lines of code. Header comments shall provide the following information: Other units called and the calling sequence.	Software	Not Applicable		
AE4-P3	484	zz - Not Applicable	TRUE	TRUE	TRUE	All modules of the system shall meet the following requirements for installation of software, including hardware with embedded firmware. The voting 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 exception handlers.	Software	Not Applicable		
BA1-P3	102	01-Pass	TRUE	TRUE	TRUE	The voting system shall accommodate a general system of access by least privilege and role based access control. The following requirements shall apply: Voting system provider shall not have administrative account, or administrative account access.	DRE	Pass		
BA1-P3	103	zz - Not Applicable	TRUE	TRUE	TRUE	By 3/31/08 all voting systems being submitted for certification shall have all components of voting system capable of supporting passwords of a minimum of 8 characters, which shall be capable of including numeric, alpha and special characters in upper case or lower case used in any combination.	DRE	Not Applicable		
BA1-P3	107	01-Pass	TRUE	TRUE	TRUE	The use of blank or empty passwords shall not be permitted at any time with the exception of a limited one-time use startup password which requires a new password to be assigned before the system can be used.	DRE	Pass		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
BA1-P3	111	01-Pass	TRUE	TRUE	TRUE	The voting system shall meet the following requirements for password security: All passwords shall be stored and used in a non-reversible format.	DRE	Pass		
BA1-P3	112	01-Pass	TRUE	TRUE	TRUE	The voting system shall meet the following requirements for password security: The application's database management system shall require separate passwords for the administrative and each user/operator accounts with access to the application.	DRE	Pass		
BA1-P3	113	01-Pass	TRUE	TRUE	TRUE	The voting system shall meet the following requirements for password security: The system shall be designed in such a way that the use of any administrative account password shall not be required for normal operating functions at any remote location.	DRE	Pass		
BA1-P3	114	01-Pass	TRUE	TRUE	TRUE	The voting system shall meet the following requirements for password security: The system shall be designed in such a way to facilitate the changing of passwords for each election cycle.	DRE	Pass		
BA2-P3	201	01-Pass	TRUE	TRUE	TRUE	The voting system shall accommodate a general system of access by least privilege and role based access control. The following requirements shall apply: Voting system provider shall not have administrative account, or administrative account access.	PCOS	Pass		
BA2-P3	202	01-Pass	TRUE	TRUE	TRUE	The voting system shall meet the following requirements for password security: The application's database management system shall require separate passwords for the administrative and each user/operator accounts with access to the application.	PCOS	Pass		
BA2-P3	203	01-Pass	TRUE	TRUE	TRUE	The voting system shall meet the following requirements for password security: The system shall be designed in such a way that the use of any administrative account password shall not be required for normal operating functions at any remote location.	PCOS	Pass		

101

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
BA2-P3	208	01-Pass	TRUE	TRUE	TRUE	The use of blank or empty passwords shall not be permitted at any time with the exception of a limited one-time use startup password which requires a new password to be assigned before the system can be used.	PCOS	Pass		
BA2-P3	209	zz - Not Applicable	TRUE	TRUE	TRUE	By 3/31/08 all voting systems being submitted for certification shall have all components of voting system capable of supporting passwords of a minimum of 8 characters, which shall be capable of including numeric, alpha and special characters in upper case or lower case used in any combination.	PCOS	Not Applicable		
BA2-P3	211	01-Pass	TRUE	TRUE	TRUE	The voting system shall meet the following requirements for password security: The system shall be designed in such a way to facilitate the changing of passwords for each election cycle.	PCOS	Pass		
BA2-P3	213	01-Pass	TRUE	TRUE	TRUE	The voting system shall meet the following requirements for password security: All passwords shall be stored and used in a non-reversible format.	PCOS	Pass		
BA3-P3	306	01-Pass	TRUE	TRUE	TRUE	The voting system shall accommodate a general system of access by least privilege and role based access control. The following requirements shall apply: Voting system provider shall not have administrative account, or administrative account access.	CCOS	Pass		
BA3-P3	308	zz - Not Applicable	TRUE	TRUE	TRUE	By 3/31/08 all voting systems being submitted for certification shall have all components of voting system capable of supporting passwords of a minimum of 8 characters, which shall be capable of including numeric, alpha and special characters in upper case or lower case used in any combination.	CCOS	Not Applicable		
BA3-P3	311	01-Pass	TRUE	TRUE	TRUE	The voting system shall meet the following requirements for password security: All passwords shall be stored and used in a non-reversible format.	CCOS	Pass		

102

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
BA3-P3	312	01-Pass	TRUE	TRUE	TRUE	The voting system shall meet the following requirements for password security: The application's database management system shall require separate passwords for the administrative and each user/operator accounts with access to the application.	CCOS	Pass		
BA3-P3	313	01-Pass	TRUE	TRUE	TRUE	The use of blank or empty passwords shall not be permitted at any time with the exception of a limited one-time use startup password which requires a new password to be assigned before the system can be used.	CCOS	Pass		
BA3-P3	314	01-Pass	TRUE	TRUE	TRUE	The voting system shall meet the following requirements for password security: The system shall be designed in such a way to facilitate the changing of passwords for each election cycle.	CCOS	Pass		
BA4-P3	401	01-Pass	TRUE	TRUE	TRUE	The voting system shall accommodate a general system of access by least privilege and role based access control. The following requirements shall apply: A unique System User/operator account shall be created for operating system use that is restricted from the following aspects of the operating system: No access to modify other user/operator accounts on the system.	Software	Pass		
BA4-P3	402	01-Pass	TRUE	TRUE	TRUE	The voting system shall meet the following requirements for password security: The system shall be designed in such a way to facilitate the changing of passwords for each election cycle.	Software	Pass		
BA4-P3	403	01-Pass	TRUE	TRUE	TRUE	The voting system shall accommodate a general system of access by least privilege and role based access control. The following requirements shall apply: A unique application administrative account shall be created which has full access and rights to the application and database;	Software	Pass		

103

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
BA4-P3	404	zz - Not Applicable	TRUE	TRUE	TRUE	By 3/31/08 all voting systems being submitted for certification shall have all components of voting system capable of supporting passwords of a minimum of 8 characters, which shall be capable of including numeric, alpha and special characters in upper case or lower case used in any combination.	Software	Not Applicable		
BA4-P3	405	01-Pass	TRUE	TRUE	TRUE	The voting system shall meet the following requirements for password security: All passwords shall be stored and used in a non-reversible format.	Software	Pass		
BA4-P3	406	04-Fail	TRUE	TRUE	TRUE	The voting system shall accommodate a general system of access by least privilege and role based access control. The following requirements shall apply: The operating system administrative account does not have access to the database and does not have the ability or knowledge of the database administrator password.	Software	Indeterminate	Category 4 - Insufficient description to support the finding and status	The test record states "Unable to verify due to proprietary software. Request Vendor to prove status. Did the system not meet the requirement or was the requirement implemented so that it prevented access to the database and to the administrator privileges?"
BA4-P3	407	01-Pass	TRUE	TRUE	TRUE	The voting system shall meet the following requirements for password security: The application's database management system shall require separate passwords for the administrative and each user/operator accounts with access to the application.	Software	Pass		
BA4-P3	408	01-Pass	TRUE	TRUE	TRUE	The voting system shall accommodate a general system of access by least privilege and role based access control. The following requirements shall apply: A unique application user/operator account shall be created with limited rights specifically designed to perform functional operation within the scope of the application. This user/operator shall be restricted in the creation or modification of any user/operator accounts.	Software	Pass		

104

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
BA4-P3	409	01-Pass	TRUE	TRUE	TRUE	The voting system shall accommodate a general system of access by least privilege and role based access control. The following requirements shall apply: A unique System User/operator account shall be created for operating system use that is restricted from the following aspects of the operating system: No access to install or remove programs.	Software	Pass		
BA4-P3	410	01-Pass	TRUE	TRUE	TRUE	The voting system shall accommodate a general system of access by least privilege and role based access control. The following requirements shall apply: Voting system provider shall not have administrative account, or administrative account access.	Software	Pass		
BA4-P3	411	04-Fail	TRUE	TRUE	TRUE	The voting system shall meet the following requirements for password security: Password to database shall be owned and only known by application;	Software	Indeterminate	Category 4 - Insufficient description to support the finding and status	The test record states "Unable to verify due to proprietary software. Request Vendor to prove status. Did the system not meet the requirement or was the requirement implemented so that it prevented access to the database?"
BA4-P3	412	01-Pass	TRUE	TRUE	TRUE	The voting system shall accommodate a general system of access by least privilege and role based access control. The following requirements shall apply: The operating system administrative account shall not be required to be used by any function of the voting system during normal operations;	Software	Pass		
BA4-P3	413	01-Pass	TRUE	TRUE	TRUE	The voting system shall accommodate a general system of access by least privilege and role based access control. The following requirements shall apply: A unique System User/operator account shall be created for operating system use that is restricted from the following aspects of the operating system: No Access to System Root directory.	Software	Indeterminate	Category 4 - Insufficient description to support the finding and status	The record says that in the windows environment the test restriction was "Possible". Was it implemented and would the system operate when it was implemented?

105

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
BA4-P3	414	01-Pass	TRUE	TRUE	TRUE	The voting system shall accommodate a general system of access by least privilege and role based access control. The following requirements shall apply: A unique System User/operator account shall be created for operating system use that is restricted from the following aspects of the operating system: No access to operating system specific folders.	Software	Indeterminate	Category 4 - Insufficient description to support the finding and status	The record says that in the windows environment the test restriction was "Possible". Was it implemented and would the system operate when it was implemented?
BA4-P3	415	01-Pass	TRUE	TRUE	TRUE	The use of blank or empty passwords shall not be permitted at any time with the exception of a limited one-time use startup password which requires a new password to be assigned before the system can be used.	Software	Pass		
BA4-P3	416	04-Fail	TRUE	TRUE	TRUE	The voting system shall meet the following requirements for password security: Passwords to database shall not be stored in database.	Software	Suspend	Category 1 - Testing to verify compliance could not be completed.	The record says that the testing board was unable to make a determination and additional information is required.
BB1-P3	101	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system shall meet the following requirements for operating system security: If the manufacturer has not established requirements: <input type="checkbox"/> for the specifically designed system, after March 31, 2008, all voting systems being submitted for certification shall have all operating systems hardened to the voting system providers' specifications.	DRE	Not Applicable		
BB1-P3	102	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system shall meet the following requirements for operating system security: After March 31, 2008, all voting systems being <input type="checkbox"/> submitted for certification shall have all operating systems hardened to NSA guidelines for operating systems as follows: <input type="checkbox"/> Microsoft Windows XP Operating systems shall be hardened to the NSA Windows XP Security Guide Version: 2.2 and the NSA Windows XP Security Guide Addendum Version 1.0.	DRE	Not Applicable		

106

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
BB1-P3	103	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system shall meet the following requirements for operating system security: After March 31, 2008, all voting systems being submitted for certification shall have all operating systems hardened to NSA guidelines for operating systems as follows: <ul style="list-style-type: none"> <li>□ Microsoft Windows 2000 operating systems shall be hardened to the following NSA Guides: <ul style="list-style-type: none"> <li>i. Guide to the Secure Configuration and Administration of Microsoft Internet Information Services 5.0 Version 1.4;</li> <li>□ ii. Guide to the Secure Configuration and Administration of Microsoft ISA Server 2000 Version 1.5;</li> <li>□ iii. Guide to Securing Microsoft Windows 2000 Active Directory Version 1.0;</li> <li>□ iv. Guide to the Secure Configuration and Administration of Microsoft Windows 2000 Certificate Services Version 2.1.1;</li> <li>□ v. Guide to Securing Microsoft Windows 2000 DHCP Version 1.3;</li> <li>□ vi. Guide to Securing Microsoft</li> </ul> </li> </ul>	DRE	Not Applicable		
BB1-P3	104	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system shall meet the following requirements for operating system security: After March 31, 2008, all voting systems being submitted for certification shall have all operating systems hardened to NSA guidelines for operating systems as follows: <ul style="list-style-type: none"> <li>□ Microsoft Windows Server 2003 operating systems shall be hardened to the NSA Microsoft Windows Server 2003 Security Guide Version 2.1 and The Microsoft Windows Server 2003 Security Guide Addendum Version 1.0.</li> </ul>	DRE	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
BB1-P3	105	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system shall meet the following requirements for operating system security: After March 31, 2008, all voting systems being submitted for certification shall have all operating systems hardened to NSA guidelines for operating systems as follows: <ul style="list-style-type: none"> <li>□ Sun Solaris 8 operating systems shall be hardened to the NSA Guide to the Secure Configuration of Solaris 8 Version 1.0.</li> </ul>	DRE	Not Applicable		
BB1-P3	106	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system shall meet the following requirements for operating system security: After March 31, 2008, all voting systems being submitted for certification shall have all operating systems hardened to NSA guidelines for operating systems as follows: <ul style="list-style-type: none"> <li>□ Sun Solaris 9 operating systems shall be hardened to the NSA Guide to the Secure Configuration of Solaris 9 Version 1.0.</li> </ul>	DRE	Not Applicable		
BB1-P3	107	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system shall meet the following requirements for operating system security: After March 31, 2008, all voting systems being submitted for certification shall have all operating systems hardened to NSA guidelines for operating systems as follows: <ul style="list-style-type: none"> <li>a. Apple max OS X systems shall be hardened to the NSA Apple Mac OS X v10.3.x "Panther" Security Configuration Guide Version 1.1.</li> </ul>	DRE	Not Applicable		
BB1-P3	108	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system shall meet the following requirements for operating system security: All other voting system operating systems submitted for certification after March 31, 2008 shall have all operating systems hardened to existing manufacturer's hardening requirements.	DRE	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
BB1-P3	109	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system shall meet the following requirements for operating system security: After March 31, 2008, all voting systems being submitted for certification shall have all operating systems hardened to NSA guidelines for operating systems as follows: <input type="checkbox"/> Apple Server Operating Systems shall be hardened to the NSA Apple Mac OS X Server v10.3.x "Panther" Security Configuration Guide.	DRE	Not Applicable		
BB4-P3	401	04-Fail	TRUE	TRUE	TRUE	The voting system shall meet the following requirements for operating system security: The voting system provider shall use a virus protection/prevention application on the election management server(s) /workstations which shall be capable of manual updates without the use of the internet.	Software	Fail		
BB4-P3	402	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system shall meet the following requirements for operating system security: All other voting system operating systems submitted for <input type="checkbox"/> certification after March 31, 2008 shall have all operating systems hardened to existing manufacturer's hardening requirements.	Software	Not Applicable		
BB4-P3	403	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system shall meet the following requirements for operating system security: After March 31, 2008, all voting systems being submitted for certification shall have all operating systems hardened to NSA guidelines for operating systems as follows: <input type="checkbox"/> Sun Solaris 8 operating systems shall be hardened to the NSA Guide to the Secure Configuration of Solaris 8 Version 1.0.	Software	Not Applicable		

109

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
BB4-P3	404	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system shall meet the following requirements for operating system security: After March 31, 2008, all voting systems being submitted for certification shall have all operating systems hardened to NSA guidelines for operating systems as follows: <input type="checkbox"/> Apple Server Operating Systems shall be hardened to the NSA Apple Mac OS X Server v10.3.x "Panther" Security Configuration Guide.	Software	Not Applicable		
BB4-P3	405	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system shall meet the following requirements for operating system security: After March 31, 2008, all voting systems being submitted for certification shall have all operating systems hardened to NSA guidelines for operating systems as follows: <input type="checkbox"/> Microsoft Windows XP Operating systems shall be hardened to the NSA Windows XP Security Guide Version: 2.2 and the NSA Windows XP Security Guide Addendum Version 1.0.	Software	Not Applicable		

110

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
BB4-P3	406	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system shall meet the following requirements for operating system security: After March 31, 2008, all voting systems being submitted for certification shall have all operating systems hardened to NSA guidelines for operating systems as follows: <ul style="list-style-type: none"> <li>□ Microsoft Windows 2000 operating systems shall be hardened to the following NSA Guides: <ul style="list-style-type: none"> <li>i. Guide to the Secure Configuration and Administration of Microsoft Internet Information Services 5.0 Version 1.4;</li> <li>□ ii. Guide to the Secure Configuration and Administration of Microsoft ISA Server 2000 Version 1.5;</li> <li>□ iii. Guide to Securing Microsoft Windows 2000 Active Directory Version 1.0;</li> <li>□ iv. Guide to the Secure Configuration and Administration of Microsoft Windows 2000 Certificate Services Version 2.1.1;</li> <li>□ v. Guide to Securing Microsoft Windows 2000 DHCP Version 1.3;</li> <li>□ vi. Guide to Securing Microsoft</li> </ul> </li> </ul>	Software	Not Applicable		
BB4-P3	407	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system shall meet the following requirements for operating system security: After March 31, 2008, all voting systems being submitted for certification shall have all operating systems hardened to NSA guidelines for operating systems as follows: <ul style="list-style-type: none"> <li>□ a. Apple max OS X systems shall be hardened to the NSA Apple Mac OS X v10.3.x "Panther" Security Configuration Guide Version 1.1;</li> </ul>	Software	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
BB4-P3	408	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system shall meet the following requirements for operating system security: After March 31, 2008, all voting systems being submitted for certification shall have all operating systems hardened to NSA guidelines for operating systems as follows: <ul style="list-style-type: none"> <li>□ Microsoft Windows Server 2003 operating systems shall be hardened to the NSA Microsoft Windows Server 2003 Security Guide Version 2.1 and The Microsoft Windows Server 2003 Security Guide Addendum Version 1.0.</li> </ul>	Software	Not Applicable		
BB4-P3	409	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system shall meet the following requirements for operating system security: After March 31, 2008, all voting systems being submitted for certification shall have all operating systems hardened to NSA guidelines for operating systems as follows: <ul style="list-style-type: none"> <li>□ Sun Solaris 9 operating systems shall be hardened to the NSA Guide to the Secure Configuration of Solaris 9 Version 1.0.</li> </ul>	Software	Not Applicable		
BB4-P3	410	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system shall meet the following requirements for operating system security: If the manufacturer has not established requirements for the specifically designed system, after March 31, 2008, all voting systems being submitted for certification shall have all operating systems hardened to the voting system providers' specifications.	Software	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
BB4-P3	411	02-Pass Conditional	TRUE	TRUE	TRUE	The voting system shall meet the following requirements for operating system security: The voting system provider shall configure the voting system operating system of the workstation and/or server used for the election management software to the following requirements: a. The ability for the system to take an action upon inserting a removable media (Autorun) shall be disabled; and b. The voting system shall only boot from the drive or device identified as the primary drive. The voting system shall not boot from any alternative device.	Software	Conditional Pass		
BC1-P3	101	zz - Not Applicable	TRUE	TRUE	TRUE	After March 31, 2008 all voting systems submitted for certification shall meet the following requirements for database security: All other voting system databases submitted for certification shall have the voting systems databases hardened to database manufacturer's existing hardening requirements.	DRE	Not Applicable		
BC1-P3	102	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system shall meet the following requirements for database security: After March 31, 2008 If manufacturer's requirements do not exist for the specifically designed system, the voting systems submitted for certification shall have the voting systems databases hardened to the database vendors specifications.	DRE	Not Applicable		
BC1-P3	103	zz - Not Applicable	TRUE	TRUE	TRUE	After March 31, 2008 all voting systems submitted for certification shall meet the following requirements for database security: All voting systems submitted for certification shall have all voting systems databases restricted to allowing access to database authentication from application only (or through application only).	DRE	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
BC1-P3	104	zz - Not Applicable	TRUE	TRUE	TRUE	After March 31, 2008 all voting systems submitted for certification shall meet the following requirements for database security: All data stored at rest in any voting system database shall be encrypted in accordance with section (vi) of this requirement.	DRE	Not Applicable		
BC1-P3	105	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system shall meet the following requirements for database security: After March 31, 2008 All Cryptography modules shall be documented by the voting system vendor to be certified to US Federal Information Processing Standard (FIPS-140-2), and validated to FIPS 180 standards.	DRE	Not Applicable		
BC1-P3	106	zz - Not Applicable	TRUE	TRUE	TRUE	After March 31, 2008 all voting systems submitted for certification shall meet the following requirements for database security: (i) All voting systems submitted for certification using Oracle 9i, Oracle 10g, or Microsoft SQL shall be hardened to the existing and published NSA guidelines for databases as follows: (A) Oracle 9i and Oracle 10g databases shall be hardened to the Center for Internet Security Benchmark for Oracle 9i/10g Ver. 2.0; (B) Microsoft SQL databases shall be hardened to the NSA Guide to the Secure Configuration and Administration of Microsoft SQL Server 2000.	DRE	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
BC2-P3	201	zz - Not Applicable	TRUE	TRUE	TRUE	After March 31, 2008 all voting systems submitted for certification shall meet the following requirements for database security: <ul style="list-style-type: none"> <li>□</li> <li>(i) All voting systems submitted for certification using Oracle 9i, Oracle 10g, or Microsoft SQL shall be hardened to the existing and published NSA guidelines for databases as follows: <ul style="list-style-type: none"> <li>□</li> <li>(A) Oracle 9i and Oracle 10g databases shall be hardened to the Center for Internet Security Benchmark for Oracle 9i/10g Ver. 2.0: <ul style="list-style-type: none"> <li>□</li> <li>(B) Microsoft SQL databases shall be hardened to the NSA Guide to the Secure Configuration and Administration of Microsoft SQL Server 2000.</li> </ul> </li> </ul> </li> </ul>	PCOS	Not Applicable		
BC2-P3	202	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system shall meet the following requirements for database security: After March 31, 2008 If manufacturer's requirements do not exist for the specifically designed system, the voting systems submitted for certification shall have the voting systems databases hardened to the database vendors specifications.	PCOS	Not Applicable		
BC2-P3	203	zz - Not Applicable	TRUE	TRUE	TRUE	After March 31, 2008 all voting systems submitted for certification shall meet the following requirements for database security: <ul style="list-style-type: none"> <li>□</li> <li>All data stored at rest in any voting system database shall be encrypted in accordance with section (vi) of this requirement.</li> </ul>	PCOS	Not Applicable		
BC2-P3	204	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system shall meet the following requirements for database security: After March 31, 2008 All Cryptography modules shall be documented by the voting system vendor to be certified to US Federal Information Processing Standard (FIPS-140-2), and validated to FIPS 180 standards.	PCOS	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
BC2-P3	205	zz - Not Applicable	TRUE	TRUE	TRUE	After March 31, 2008 all voting systems submitted for certification shall meet the following requirements for database security: <ul style="list-style-type: none"> <li>□</li> <li>All voting systems submitted for certification shall have all voting systems databases restricted to allowing access to database authentication from application only (or through application only).</li> </ul>	PCOS	Not Applicable		
BC2-P3	206	zz - Not Applicable	TRUE	TRUE	TRUE	After March 31, 2008 all voting systems submitted for certification shall meet the following requirements for database security: <ul style="list-style-type: none"> <li>□</li> <li>All other voting system databases submitted for certification shall have the voting systems databases hardened to database manufacturer's existing hardening requirements.</li> </ul>	PCOS	Not Applicable		
BC3-P3	301	zz - Not Applicable	TRUE	TRUE	TRUE	After March 31, 2008 all voting systems submitted for certification shall meet the following requirements for database security: <ul style="list-style-type: none"> <li>□</li> <li>(i) All voting systems submitted for certification using Oracle 9i, Oracle 10g, or Microsoft SQL shall be hardened to the existing and published NSA guidelines for databases as follows: <ul style="list-style-type: none"> <li>□</li> <li>(A) Oracle 9i and Oracle 10g databases shall be hardened to the Center for Internet Security Benchmark for Oracle 9i/10g Ver. 2.0: <ul style="list-style-type: none"> <li>□</li> <li>(B) Microsoft SQL databases shall be hardened to the NSA Guide to the Secure Configuration and Administration of Microsoft SQL Server 2000.</li> </ul> </li> </ul> </li> </ul>	CCOS	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
BC3-P3	302	zz - Not Applicable	TRUE	TRUE	TRUE	After March 31, 2008 all voting systems submitted for certification shall meet the following requirements for database security: <input type="checkbox"/> All voting systems submitted for certification shall have all voting systems databases restricted to allowing access to database authentication from application only (or through application only).	CCOS	Not Applicable		
BC3-P3	303	zz - Not Applicable	TRUE	TRUE	TRUE	After March 31, 2008 all voting systems submitted for certification shall meet the following requirements for database security: <input type="checkbox"/> All other voting system databases submitted for certification shall have the voting systems databases hardened to database manufacturer's existing hardening requirements.	CCOS	Not Applicable		
BC3-P3	304	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system shall meet the following requirements for database security: After March 31, 2008 All Cryptography modules shall be documented by the voting system vendor to be certified to US Federal Information Processing Standard (FIPS-140-2), and validated to FIPS 180 standards.	CCOS	Not Applicable		
BC3-P3	305	zz - Not Applicable	TRUE	TRUE	TRUE	After March 31, 2008 all voting systems submitted for certification shall meet the following requirements for database security: <input type="checkbox"/> All data stored at rest in any voting system database shall be encrypted in accordance with section (vi) of this requirement.	CCOS	Not Applicable		
BC3-P3	306	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system shall meet the following requirements for database security: After March 31, 2008 If manufacturer's requirements do not exist for the specifically designed system, the voting systems submitted for certification shall have the voting systems databases hardened to the database vendors specifications.	CCOS	Not Applicable		

117

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
BC4-P3	401	zz - Not Applicable	TRUE	TRUE	TRUE	After March 31, 2008 all voting systems submitted for certification shall meet the following requirements for database security: <input type="checkbox"/> All voting systems submitted for certification shall have all voting systems databases restricted to allowing access to database authentication from application only (or through application only).	Software	Not Applicable		
BC4-P3	402	zz - Not Applicable	TRUE	TRUE	TRUE	After March 31, 2008 all voting systems submitted for certification shall meet the following requirements for database security: <input type="checkbox"/> (i) All voting systems submitted for certification using Oracle 9i, Oracle 10g, or Microsoft SQL shall be hardened to the existing and published NSA guidelines for databases as follows: <input type="checkbox"/> (A) Oracle 9i and Oracle 10g databases shall be hardened to the Center for Internet Security Benchmark for Oracle 9i/10g Ver. 2.0; <input type="checkbox"/> (B) Microsoft SQL databases shall be hardened to the NSA Guide to the Secure Configuration and Administration of Microsoft SQL Server 2000.	Software	Not Applicable		
BC4-P3	403	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system shall meet the following requirements for database security: After March 31, 2008 If manufacturer's requirements do not exist for the specifically designed system, the voting systems submitted for certification shall have the voting systems databases hardened to the database vendors specifications.	Software	Not Applicable		
BC4-P3	404	zz - Not Applicable	TRUE	TRUE	TRUE	After March 31, 2008 all voting systems submitted for certification shall meet the following requirements for database security: <input type="checkbox"/> All data stored at rest in any voting system database shall be encrypted in accordance with section (vi) of this requirement.	Software	Not Applicable		

118

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
BC4-P3	405	zz - Not Applicable	TRUE	TRUE	TRUE	The voting system shall meet the following requirements for database security: After March 31, 2008 All Cryptography modules shall be documented by the voting system vendor to be certified to US Federal Information Processing Standard (FIPS-140-2), and validated to FIPS 180 standards.	Software	Not Applicable		
BC4-P3	406	zz - Not Applicable	TRUE	TRUE	TRUE	After March 31, 2008 all voting systems submitted for certification shall meet the following requirements for database security: All other voting system databases submitted for certification shall have the voting systems databases hardened to database manufacturer's existing hardening requirements.	Software	Not Applicable		
BD1-P3	101	zz - Not Applicable	TRUE	TRUE	TRUE	As of March 31 2008, voting systems submitted for certification shall meet the following minimum requirements for removable storage media with data controls: All non-voting data stored shall be authenticated, validated and encrypted in accordance with cryptography requirements of subsection (c)(vi) of this requirement;	DRE	Not Applicable		
BD1-P3	102	zz - Not Applicable	TRUE	TRUE	TRUE	As of March 31 2008, voting systems submitted for certification shall meet the following minimum requirements for removable storage media with data controls: All voting data stored which includes vote records, ballot images, tally data and cast votes, shall be authenticated and validated in accordance with cryptography requirements of subsection (c)(vii) of this requirement;	DRE	Not Applicable		
BD1-P3	103	01-Pass	TRUE	TRUE	TRUE	If a vote tabulation device employs the use of removable memory storage devices, the devices shall allow for an alternate method of transfer of audit records if the device and/or memory storage device is damaged or destroyed.	DRE	Pass		

119

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
BD2-P3	201	zz - Not Applicable	TRUE	TRUE	TRUE	As of March 31 2008, voting systems submitted for certification shall meet the following minimum requirements for removable storage media with data controls: All non-voting data stored shall be authenticated, validated and encrypted in accordance with cryptography requirements of subsection (c)(vi) of this requirement;	PCOS	Not Applicable		
BD2-P3	202	zz - Not Applicable	TRUE	TRUE	TRUE	As of March 31 2008, voting systems submitted for certification shall meet the following minimum requirements for removable storage media with data controls: All voting data stored which includes vote records, ballot images, tally data and cast votes, shall be authenticated and validated in accordance with cryptography requirements of subsection (c)(vii) of this requirement;	PCOS	Not Applicable		
BD2-P3	203	01-Pass	TRUE	TRUE	TRUE	If a vote tabulation device employs the use of removable memory storage devices, the devices shall allow for an alternate method of transfer of audit records if the device and/or memory storage device is damaged or destroyed.	PCOS	Pass		
BD3-P3	301	zz - Not Applicable	TRUE	TRUE	TRUE	As of March 31 2008, voting systems submitted for certification shall meet the following minimum requirements for removable storage media with data controls: All non-voting data stored shall be authenticated, validated and encrypted in accordance with cryptography requirements of subsection (c)(vi) of this requirement;	CCOS	Not Applicable		
BD3-P3	302	zz - Not Applicable	TRUE	TRUE	TRUE	As of March 31 2008, voting systems submitted for certification shall meet the following minimum requirements for removable storage media with data controls: All voting data stored which includes vote records, ballot images, tally data and cast votes, shall be authenticated and validated in accordance with cryptography requirements of subsection (c)(vii) of this requirement;	CCOS	Not Applicable		

120

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
BD3-P3	303	01-Pass	TRUE	TRUE	TRUE	If a vote tabulation device employs the use of removable memory storage devices, the devices shall allow for an alternate method of transfer of audit records if the device and/or memory storage device is damaged or destroyed.	CCOS	Pass		
BD4-P3	401	zz - Not Applicable	TRUE	TRUE	TRUE	As of March 31 2008, voting systems submitted for certification shall meet the following minimum requirements for removable storage media with data controls: All non-voting data stored shall be authenticated, validated and encrypted in accordance with cryptography requirements of subsection (c)(vi) of this requirement;	Software	Not Applicable		
BD4-P3	402	zz - Not Applicable	TRUE	TRUE	TRUE	As of March 31 2008, voting systems submitted for certification shall meet the following minimum requirements for removable storage media with data controls: All voting data stored which includes vote records, ballot images, tally data and cast votes, shall be authenticated and validated in accordance with cryptography requirements of subsection (c)(vii) of this requirement;	Software	Not Applicable		
BD4-P3	403	01-Pass	TRUE	TRUE	TRUE	If a vote tabulation device employs the use of removable memory storage devices, the devices shall allow for an alternate method of transfer of audit records if the device and/or memory storage device is damaged or destroyed.	Software	Pass		
BD4-P3	404	04-Fail	TRUE	TRUE	TRUE	Antivirus software shall be present and scan removable media upon insertion of media or media device on server and/or workstations hosting the elections management software.	Software	Fail		
BE1-P3	101	01-Pass	TRUE	TRUE	TRUE	The voting system shall meet the following requirements for network security: The voting system shall be tested to contain provisions for updating security patches, software and/or service packs without access to the open network.	DRE	Pass		

121

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
BE1-P3	102	04-Fail	TRUE	TRUE	TRUE	The reporting subsystem contains all mechanical, electromechanical, and electronic devices required to print reports of the tabulation. The subsystem also may include data storage media and communications devices for transportation or transmission of data to other sites. Communications Devices shall not be used for the preparation or printing of an official canvass of the vote unless they conform to a data interchange and interface structure and protocol that incorporates auditing and error checking as required by 45.5.2.7.	DRE	Indeterminate	Categories 2 and 4 - Questionable interpretation of the requirement and - Insufficient description to support the finding and status	The requirement is ability to print reports and a prohibition on printing of official Canvass unless other requirements are met. Observations point to test BE1-PC-108 which states that the vendor did not provide sufficient documentation. Can the device print reports. Does the device have telecommunication? Can it be disabled? Why was it not tested?
BE1-P3	103	02-Pass Conditional	TRUE	TRUE	TRUE	The voting system shall meet the following requirements for network security: All components of the voting system shall only be operated on a closed network only for the use of the voting system;	DRE	Conditional Pass		
BE1-P3	104	04-Fail	TRUE	TRUE	TRUE	Failure and recovery of transmissions shall not cause any error in data transmitted from the polling place to the central election site during a recovered transmission session.	DRE	Indeterminate	Categories 2 and 4 - Questionable interpretation of the requirement and - Insufficient description to support the finding and status	The requirement is the ability to recover from interruptions in telecommunication without errors. Observations point to test BE1-PC-108 which states that the vendor did not provide sufficient documentation. Can the device print reports. Does the device have telecommunication? Can it be disabled? Why was it not tested?
BE1-P3	105	04-Fail	TRUE	TRUE	TRUE	The voting system shall meet the following requirements for network security: All components of the voting system shall include the limited use of non-routable IP address configurations for any device connected to the closed network. For the purposes of this requirement non-routable IP addresses are those defined in the RFC 1918 Address base;	DRE	Indeterminate	Categories 2 and 4 - Questionable interpretation of the requirement and - Insufficient description to support the finding and status	The requirement is the use of non routable IP Addresses on the closed network. Observations point to test BE1-PC-108 which states that the vendor did not provide sufficient documentation. Since that test is for encryption and authentication meeting the FIPS 140-2 and 180 standards, how does that relate to the requirement for IP Addresses?

122

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
BE1-P3	106	04-Fail	TRUE	TRUE	TRUE	In any situation in which the voting system provider's system transmits data through any telecommunications medium, the system shall be able to recover, either automatically or with manual intervention, from incomplete or failed transmission sessions and resume transmissions automatically when telecommunications are re-established.	DRE	Suspend	Category 1 - Testing to verify compliance could not be completed.	
BE1-P3	107	04-Fail	TRUE	TRUE	TRUE	All electronic transmissions from a voting system shall meet the following minimum standards: Modems from remote devices shall be "dial only" and cannot be programmed to receive a call;	DRE	Indeterminate	Categories 2 and 4 - Questionable interpretation of the requirement and - Insufficient description to support the finding and status	The requirement is that modems be "dial only." Observations point to test BE1-PC-108 which states that the vendor did not provide sufficient documentation. Since that test is for encryption and authentication meeting the FIPS 140-2 and 180 standards, how does that relate to the requirement for configuring modems to "dial only"?
BE1-P3	108	04-Fail	TRUE	TRUE	TRUE	All electronic transmissions from a voting system shall meet the following minimum standards: All communications of data in transfer shall be encrypted, authenticated and verified to the Fips 140-2 standard and verified to the FIPS 180 standard.	DRE	Suspend	Category 1 - Testing to verify compliance could not be completed.	
BE1-P3	109	01-Pass	TRUE	TRUE	TRUE	All wireless components on voting systems shall be disabled with the exception of line of sight infrared technology used in a closed environment where the transmission and reception is shielded from external infrared signals and can only accept infrared signals generated from within the system.	DRE	Not Applicable	Categories 2 and 4 - Questionable interpretation of the requirement and - Insufficient description to support the finding and status	Does this Device have any wireless components? The Observations point to documentation on test BE-4-P3-406. Which appears to relate to disabling wireless communications on Laptops.
BE1-P3	110	04-Fail	TRUE	TRUE	TRUE	All systems that transmit data over public telecommunications networks shall maintain a clear audit trail that can be provided to the Secretary of State when election results are transmitted by telephone, microwave or any other type of electronic communication.	DRE	Indeterminate	Categories 2 and 4 - Questionable interpretation of the requirement and - Insufficient description to support the finding and status	The requirement is for an audit trail when election results are transmitted over public telecom networks. Observations point to test BE1-PC-108 which states that the vendor did not provide sufficient documentation. Since that test is for encryption and authentication meeting the FIPS 140-2 and 180 standards, how does that relate to the requirement for audit trails?

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
BE1-P3	111	zz - Not Applicable	TRUE	TRUE	TRUE	Systems designed for transmission of voter information (i.e. electronic pollbooks) over public networks shall meet security standards that address the security risks attendant with the casting of ballots at remote sites controlled by election officials using the voting system configured and installed by election officials and/or their voting system provider or contractor, and using in-person authentication of individual voters.	DRE	Not Applicable		
BE1-P3	112	04-Fail	TRUE	TRUE	TRUE	Recovery of transmissions shall include notations of the interrupted transmission session and the resumed transmission session in the system and application transaction logs.	DRE	Suspend	Category 1 - Testing to verify compliance could not be completed.	
BE2-P3	201	zz - Not Applicable	TRUE	TRUE	TRUE	Recovery of transmissions shall include notations of the interrupted transmission session and the resumed transmission session in the system and application transaction logs.	PCOS	Not Applicable		
BE2-P3	202	01-Pass	TRUE	TRUE	TRUE	The voting system shall meet the following requirements for network security: All components of the voting system shall only be operated on a closed network only for the use of the voting system;	PCOS	Pass		
BE2-P3	203	zz - Not Applicable	TRUE	TRUE	TRUE	In any situation in which the voting system provider's system transmits data through any telecommunications medium, the system shall be able to recover, either automatically or with manual intervention, from incomplete or failed transmission sessions and resume transmissions automatically when telecommunications are re-established.	PCOS	Not Applicable		
BE2-P3	204	zz - Not Applicable	TRUE	TRUE	TRUE	All electronic transmissions from a voting system shall meet the following minimum standards: Modems from remote devices shall be "dial only" and cannot be programmed to receive a call;	PCOS	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
BE2-P3	205	zz - Not Applicable	TRUE	TRUE	TRUE	The reporting subsystem contains all mechanical, electromechanical, and electronic devices required to print reports of the tabulation. The subsystem also may include data storage media and communications devices for transportation or transmission of data to other sites. Communications Devices shall not be used for the preparation or printing of an official canvass of the vote unless they conform to a data interchange and interface structure and protocol that incorporates auditing and error checking as required by 45.5.2.7.	PCOS	Not Applicable		
BE2-P3	206	04-Fail	TRUE	TRUE	TRUE	All electronic transmissions from a voting system shall meet the following minimum standards: All communications of data in transfer shall be encrypted, authenticated and verified to the Fips 140-2 standard and verified to the FIPS 180 standard.	PCOS	Fail		
BE2-P3	207	01-Pass	TRUE	TRUE	TRUE	All wireless components on voting systems shall be disabled with the exception of line of sight infrared technology used in a closed environment where the transmission and reception is shielded from external infrared signals and can only accept infrared signals generated from within the system.	PCOS	Not Applicable	Categories 2 and 4 - Questionable interpretation of the requirement and - Insufficient description to support the finding and status	Does this Device have any wireless components? The Observations point to documentation on test BE-4-P3-406. Which appears to relate to disabling wireless communications on Laptops.
BE2-P3	208	zz - Not Applicable	TRUE	TRUE	TRUE	Systems designed for transmission of voter information (i.e. electronic pollbooks) over public networks shall meet security standards that address the security risks attendant with the casting of ballots at remote sites controlled by election officials using the voting system configured and installed by election officials and/or their voting system provider or contractor, and using in-person authentication of individual voters.	PCOS	Not Applicable		

125

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
BE2-P3	209	01-Pass	TRUE	TRUE	TRUE	The voting system shall meet the following requirements for network security: All components of the voting system shall include the limited use of non-routable IP address configurations for any device connected to the closed network. For the purposes of this requirement non-routable IP addresses are those defined in the RFC 1918 Address base;	PCOS	Pass		
BE2-P3	210	01-Pass	TRUE	TRUE	TRUE	The voting system shall meet the following requirements for network security: The voting system shall be tested to contain provisions for updating security patches, software and/or service packs without access to the open network.	PCOS	Pass		
BE2-P3	211	zz - Not Applicable	TRUE	TRUE	TRUE	Failure and recovery of transmissions shall not cause any error in data transmitted from the polling place to the central election site during a recovered transmission session.	PCOS	Not Applicable		
BE2-P3	212	zz - Not Applicable	TRUE	TRUE	TRUE	All systems that transmit data over public telecommunications networks shall maintain a clear audit trail that can be provided to the Secretary of State when election results are transmitted by telephone, microwave or any other type of electronic communication.	PCOS	Not Applicable		
BE3-P3	301	zz - Not Applicable	TRUE	TRUE	TRUE	Systems designed for transmission of voter information (i.e. electronic pollbooks) over public networks shall meet security standards that address the security risks attendant with the casting of ballots at remote sites controlled by election officials using the voting system configured and installed by election officials and/or their voting system provider or contractor, and using in-person authentication of individual voters.	CCOS	Not Applicable		

126

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
BE3-P3	302	zz - Not Applicable	TRUE	TRUE	TRUE	In any situation in which the voting system provider's system transmits data through any telecommunications medium, the system shall be able to recover, either automatically or with manual intervention, from incomplete or failed transmission sessions and resume transmissions automatically when telecommunications are re-established.	CCOS	Not Applicable		
BE3-P3	303	zz - Not Applicable	TRUE	TRUE	TRUE	The reporting subsystem contains all mechanical, electromechanical, and electronic devices required to print reports of the tabulation. The subsystem also may include data storage media and communications devices for transportation or transmission of data to other sites. Communications Devices shall not be used for the preparation or printing of an official canvass of the vote unless they conform to a data interchange and interface structure and protocol that incorporates auditing and error checking as required by 45.5.2.7.	CCOS	Not Applicable		
BE3-P3	304	zz - Not Applicable	TRUE	TRUE	TRUE	Recovery of transmissions shall include notations of the interrupted transmission session and the resumed transmission session in the system and application transaction logs.	CCOS	Not Applicable		
BE3-P3	305	zz - Not Applicable	TRUE	TRUE	TRUE	Failure and recovery of transmissions shall not cause any error in data transmitted from the polling place to the central election site during a recovered transmission session.	CCOS	Not Applicable		
BE3-P3	306	zz - Not Applicable	TRUE	TRUE	TRUE	All electronic transmissions from a voting system shall meet the following minimum standards: All communications of data in transfer shall be encrypted, authenticated and verified to the Fips 140-2 standard and verified to the FIPS 180 standard.	CCOS	Not Applicable		

127

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
BE3-P3	307	zz - Not Applicable	TRUE	TRUE	TRUE	All systems that transmit data over public telecommunications networks shall maintain a clear audit trail that can be provided to the Secretary of State when election results are transmitted by telephone, microwave or any other type of electronic communication.	CCOS	Not Applicable		
BE3-P3	308	02-Pass Conditional	TRUE	TRUE	TRUE	The voting system shall meet the following requirements for network security: All components of the voting system shall only be operated on a closed network only for the use of the voting system;	CCOS	Conditional Pass		
BE3-P3	309	02-Pass Conditional	TRUE	TRUE	TRUE	The voting system shall meet the following requirements for network security: All components of the voting system shall include the limited use of non-routable IP address configurations for any device connected to the closed network. For the purposes of this requirement non-routable IP addresses are those defined in the RFC 1918 Address base;	CCOS	Conditional Pass		
BE3-P3	310	01-Pass	TRUE	TRUE	TRUE	The voting system shall meet the following requirements for network security: The voting system shall be tested to contain provisions for updating security patches, software and/or service packs without access to the open network.	CCOS	Pass		
BE3-P3	311	01-Pass	TRUE	TRUE	TRUE	All wireless components on voting systems shall be disabled with the exception of line of sight infrared technology used in a closed environment where the transmission and reception is shielded from external infrared signals and can only accept infrared signals generated from within the system.	CCOS	Conditional Pass		

128

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
BE4-P3	401	04-Fail	TRUE	TRUE	TRUE	The reporting subsystem contains all mechanical, electromechanical, and electronic devices required to print reports of the tabulation. The subsystem also may include data storage media and communications devices for transportation or transmission of data to other sites. Communications Devices shall not be used for the preparation or printing of an official canvass of the vote unless they conform to a data interchange and interface structure and protocol that incorporates auditing and error checking as required by 45.5.2.7.	Software	Suspend	Category 1 - Testing to verify compliance could not be completed.	
BE4-P3	402	02-Pass Conditional	TRUE	TRUE	TRUE	The voting system shall meet the following requirements for network security: All components of the voting system shall include the limited use of non-routable IP address configurations for any device connected to the closed network. For the purposes of this requirement non-routable IP addresses are those defined in the RFC 1918 Address base;	Software	Indeterminate	Category 4 - Insufficient description to support the finding and status	The equipment/Model is Shown as System 6.0. The observation addresses the "Condition" of requiring the stand alone version of Ballot Now. What about the rest of the system?
BE4-P3	403	02-Pass Conditional	TRUE	TRUE	TRUE	The voting system shall meet the following requirements for network security: All components of the voting system shall only be operated on a closed network only for the use of the voting system;	Software	Indeterminate	Category 4 - Insufficient description to support the finding and status	The equipment/Model is Shown as System 6.0. The observation addresses the "Condition" of requiring the stand alone version of Ballot Now. What about the rest of the system?
BE4-P3	404	zz-Not Applicable	TRUE	TRUE	TRUE	Systems designed for transmission of voter information (i.e. electronic pollbooks) over public networks shall meet security standards that address the security risks attendant with the casting of ballots at remote sites controlled by election officials using the voting system configured and installed by election officials and/or their voting system provider or contractor, and using in-person authentication of individual voters.	Software	Not Applicable		

129

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
BE4-P3	405	04-Fail	TRUE	TRUE	TRUE	All systems that transmit data over public telecommunications networks shall maintain a clear audit trail that can be provided to the Secretary of State when election results are transmitted by telephone, microwave or any other type of electronic communication.	Software	Suspend	Category 1 - Testing to verify compliance could not be completed.	
BE4-P3	406	02-Pass Conditional	TRUE	TRUE	TRUE	All wireless components on voting systems shall be disabled with the exception of line of sight infrared technology used in a closed environment where the transmission and reception is shielded from external infrared signals and can only accept infrared signals generated from within the system.	Software	Conditional Pass		
BE4-P3	407	04-Fail	TRUE	TRUE	TRUE	All electronic transmissions from a voting system shall meet the following minimum standards: All communications of data in transfer shall be encrypted, authenticated and verified to the Fips 140-2 standard and verified to the FIPS 180 standard.	Software	Fail		
BE4-P3	408	04-Fail	TRUE	TRUE	TRUE	Recovery of transmissions shall include notations of the interrupted transmission session and the resumed transmission session in the system and application transaction logs.	Software	Suspend	Category 1 - Testing to verify compliance could not be completed.	
BE4-P3	409	01-Pass	TRUE	TRUE	TRUE	The voting system shall meet the following requirements for network security: The voting system shall be tested to contain provisions for updating security patches, software and/or service packs without access to the open network.	Software	Pass		
BE4-P3	410	04-Fail	TRUE	TRUE	TRUE	All electronic transmissions from a voting system shall meet the following minimum standards: Modems from remote devices shall be "dial only" and cannot be programmed to receive a call;	Software	Suspend	Category 1 - Testing to verify compliance could not be completed.	
BE4-P3	411	04-Fail	TRUE	TRUE	TRUE	Failure and recovery of transmissions shall not cause any error in data transmitted from the polling place to the central election site during a recovered transmission session.	Software	Suspend	Category 1 - Testing to verify compliance could not be completed.	

130

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CA1-P3	102	01-Pass	TRUE	TRUE	TRUE	All tests shall be conducted as described in this section 45.6.2.3 in regular election mode. At no point shall testing be conducted in any form of test mode.	DRE	Pass		
CA1-P3	103	01-Pass	TRUE	TRUE	TRUE	The voting system provider shall provide documentation detailing voting system security in the areas listed below, the system shall contain documented configurations, properties and procedures to prevent, detect and log changes to system capabilities for: Preventing access to vote data, including individual votes and vote totals, to unauthorized individuals.	DRE	Pass		
CA1-P3	111	01-Pass	TRUE	TRUE	TRUE	The Voting system shall provide for appropriately authorized operators to setup and prepare ballots for an election.□ □ The ballots shall be printed so as to give to each eligible elector a clear opportunity to designate his or her choice of candidates, joint candidates, ballot issues, and ballot questions by a mark as instructed. On the ballot may be printed words that will aid the elector, such as "vote for not more than one".□ □ At the end of the list of candidates for each different office shall be one or more blank spaces in which the elector may write the name of any eligible person not printed on the ballot who has filed an affidavit of intent of write-in candidate pursuant to section 1-4-1101. The number of spaces provided shall be the lesser of the number of eligible electors who have properly filed an affidavit of intent of write-in candidate pursuant to section 1-4-1101 or the number of persons to be elected to the office. No such blank spaces shall be provided if	DRE	Pass		
CA1-P3	113	01-Pass	TRUE	TRUE	TRUE	The Voting system shall provide for appropriately authorized operators to preserve the system for future election use.	DRE	Pass		

131

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CA1-P3	115	01-Pass	TRUE	TRUE	TRUE	The voting system shall have a high level of integration between the ballot layout subsystem and the vote tabulation subsystem. This integration shall permit and facilitate the automatic transfer of all ballot setup information from the automated ballot layout module to the single ballot tabulation system that will be used in a fully integrated manner for DRE, optical scan, and any other voting devices included in the voting system.	DRE	Pass		
CA1-P3	116	04-Fail	TRUE	TRUE	TRUE	The ballot definition subsystem shall be capable of handling at least 500 potentially active voting positions, arranged to identify party affiliations in a primary election, offices and their associated labels and instructions, candidate names and their associated labels and instructions, and issues or measures and their associated text and instructions.	DRE	Indeterminate	Category 4 - Insufficient description to support the finding and status	There are no observations or references to support the finding. What procedures or observations were taken to arrive at the finding?
CA1-P3	117	01-Pass	TRUE	TRUE	TRUE	The ballot display may consist of a matrix of rows or columns assigned to political parties or non-partisan candidates and columns or rows assigned to offices and contests. The display may consist of a contiguous matrix of the entire ballot or it may be segmented to present portions of the ballot in succession.	DRE	Pass		
CA1-P3	118	01-Pass	TRUE	TRUE	TRUE	All tabulation devices shall display the unit serial number(s) both physically and within any applicable software, logs or reports.	DRE	Pass		
CA1-P3	121	01-Pass	TRUE	TRUE	TRUE	The Voting system shall provide for appropriately authorized operators to prepare the system for an election.	DRE	Pass		

132

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CA2-P3	201	01-Pass	TRUE	TRUE	TRUE	The voting system shall have a high level of integration between the ballot layout subsystem and the vote tabulation subsystem. This integration shall permit and facilitate the automatic transfer of all ballot setup information from the automated ballot tabulation module to the single ballot tabulation system that will be used in a fully integrated manner for DRE, optical scan, and any other voting devices included in the voting system.	PCOS	Pass		
CA2-P3	204	01-Pass	TRUE	TRUE	TRUE	The Voting system shall provide for appropriately authorized operators to preserve the system for future election use.	PCOS	Pass		
CA2-P3	205	04-Fail	TRUE	TRUE	TRUE	The ballot definition subsystem shall be capable of handling at least 500 potentially active voting positions, arranged to identify party affiliations in a primary election, offices and their associated labels and instructions, candidate names and their associated labels and instructions, and issues or measures and their associated text and instructions.	PCOS	Indeterminate	Category 4 - Insufficient description to support the finding and status	There are no observations or references to support the finding. What procedures or observations were taken to arrive at the finding?
CA2-P3	210	01-Pass	TRUE	TRUE	TRUE	All tests shall be conducted as described in this section 45.6.2.3 in regular election mode. At no point shall testing be conducted in any form of test mode.	PCOS	Pass		
CA2-P3	211	01-Pass	TRUE	TRUE	TRUE	All tabulation devices shall display the unit serial number(s) both physically and within any applicable software, logs or reports.	PCOS	Pass		
CA2-P3	213	01-Pass	TRUE	TRUE	TRUE	The Voting system shall provide for appropriately authorized operators to prepare the system for an election.	PCOS	Pass		
CA2-P3	215	01-Pass	TRUE	TRUE	TRUE	The voting system provider shall provide documentation detailing voting system security in the areas listed below. the system shall contain documented configurations, properties and procedures to prevent, detect and log changes to system capabilities for: Preventing access to vote data, including individual votes and vote totals, to unauthorized individuals.	PCOS	Pass		

133

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CA2-P3	222	04-Fail	TRUE	TRUE	TRUE	The voting system provider shall provide documentation detailing voting system security in the areas listed below. the system shall contain documented configurations, properties and procedures to prevent, detect and log changes to system capabilities for: 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.	PCOS	Indeterminate	Category 4 - Insufficient description to support the finding and status	Was the testing board able to make changes, to capabilities for preventing access to voter identification and ballot content which were not logged? Or is there specific categories of information that the logs do not contain?
CA4-P3	401	04-Fail	TRUE	TRUE	TRUE	Demonstrate the ability for a user to generate and maintain a maximum of 10 different counting methods – the minimum is three and they are Absentee, Polling Place (or vote center) and Provisional – most counties shall have early voting as well as this.	Software	Fail	Category 7 - The requirement is not found in the Statute or Rule cited.	
CA4-P3	402	04-Fail	TRUE	TRUE	TRUE	The voting system provider shall provide documentation detailing voting system security in the areas listed below. the system shall contain documented configurations, properties and procedures to prevent, detect and log changes to system capabilities for: Reporting vote totals;	Software	Indeterminate	Category 4 - Insufficient description to support the finding and status	Was the testing board able to make changes, to capabilities for reporting voting totals which were not logged? Or are there specific categories of information that the logs do not contain?
CA4-P3	403	01-Pass	TRUE	TRUE	TRUE	The ballot definition subsystem shall provide for the definition of political and administrative subdivisions where the list of candidates or contests may vary within the remote site and for the activation or exclusion of any portion of the ballot upon which the entitlement of a voter to vote may vary by reason of place of residence or other such administrative or geographical criteria. This database shall be used by the system with the administrative database to format ballots or edit formatted ballots within the jurisdiction.	Software	Pass		
CA4-P3	404	01-Pass	TRUE	TRUE	TRUE	The voting system shall allow the operator to generate and maintain an administrative database containing the definitions and descriptions of political subdivisions and offices within the jurisdiction.	Software	Pass		

134

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CA4-P3	405	04-Fail	TRUE	TRUE	TRUE	The voting system provider shall provide documentation detailing voting system security in the areas listed below. the system shall contain documented configurations, properties and procedures to prevent, detect and log changes to system capabilities for: Casting and recording votes;	Software	Indeterminate	Category 4 - Insufficient description to support the finding and status	Was the testing board able to make changes, to capabilities for casting and recording votes which were not logged? Or are there specific categories of information that the logs do not contain?
CA4-P3	406	04-Fail	TRUE	TRUE	TRUE	The voting system provider shall provide documentation detailing voting system security in the areas listed below. the system shall contain documented configurations, properties and procedures to prevent, detect and log changes to system capabilities for: Calculating vote totals consistent with defined ballot formats;	Software	Indeterminate	Category 4 - Insufficient description to support the finding and status	Was the testing board able to make changes, to capabilities for calculating vote totals consistent with ballot formats which were not logged? Or are there specific categories of information that the logs do not contain?
CA4-P3	407	01-Pass	TRUE	TRUE	TRUE	The voting system application shall provide authorized users with the capability to produce electronic files including election results in either an ASCII (both comma-delimited and fixed-width) format or web based format that shall contain (a) all data or (b) any user selected data elements from the database. The software shall provide authorized users with the ability to generate these files on an "on-demand" basis. After creating such files, the authorized users shall, at their discretion, have the capability to copy the files to diskette, tape, or CD-ROM or to transmit the files to another information system.□ (a)Exports necessary for the Secretary of State shall conform to an agreed upon format.□ (b)Export files shall be generated so that election results can be communicated to the Secretary of State on election night both during the accumulation of results and after all results have been accumulated.	Software	Pass		

135

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CA4-P3	408	04-Fail	TRUE	TRUE	TRUE	The voting system provider shall provide documentation detailing voting system security in the areas listed below. the system shall contain documented configurations, properties and procedures to prevent, detect and log changes to system capabilities for: Changing, or preventing the recording of, a vote;	Software	Indeterminate	Category 4 - Insufficient description to support the finding and status	Was the testing board able to make changes, to capabilities for changing or preventing the recording of a vote which were not logged? Or are there specific categories of information that the logs do not contain?
CA4-P3	409	04-Fail	TRUE	TRUE	TRUE	The voting system provider shall provide documentation detailing voting system security in the areas listed below. the system shall contain documented configurations, properties and procedures to prevent, detect and log changes to system capabilities for: Changing calculated vote totals;	Software	Indeterminate	Category 4 - Insufficient description to support the finding and status	Was the testing board able to make changes, to capabilities for changing calculated vote totals which were not logged? Or are there specific categories of information that the logs do not contain?
CA4-P3	410	04-Fail	TRUE	TRUE	TRUE	The voting system provider shall provide documentation detailing voting system security in the areas listed below. the system shall contain documented configurations, properties and procedures to prevent, detect and log changes to system capabilities for: Preventing access to vote data, including individual votes and vote totals, to unauthorized individuals.	Software	Indeterminate	Category 4 - Insufficient description to support the finding and status	Was the testing board able to make changes, to capabilities for preventing access to vote data including individual votes and vote totals to unauthorized individuals which were not logged? Or are there specific categories of information that the logs do not contain?
CA4-P3	411	01-Pass	TRUE	TRUE	TRUE	For each election, the subsystem shall allow the operator to generate and maintain a candidate and contest database and provide for the production and/or definition of properly formatted ballots and software.	Software	Pass		
CA4-P3	412	04-Fail	TRUE	TRUE	TRUE	Demonstrate the ability for a user to generate and maintain a maximum of 500 remote voting locations each with the ability to contain one or multiple precincts, which does not affect the other counter groups and how many precincts they are able to maintain.	Software	Suspend	Category 1 - Testing to verify compliance could not be completed.	
CA4-P3	413	01-Pass	TRUE	TRUE	TRUE	The Voting system shall provide for appropriately authorized operators to lock and unlock system to prevent or allow changes to ballot design.	Software	Pass		

136

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CA4-P3	414	04-Fail	TRUE	TRUE	TRUE	Demonstrate the ability for a user to generate and maintain the definitions and descriptions of precincts and precinct splits (or sub-precincts) that are contained within a jurisdiction. The database shall allow for a maximum of 2000 precincts, and each precinct has the potential for 50 splits within the precinct.	Software	Suspend	Category 1 - Testing to verify compliance could not be completed.	
CA4-P3	415	04-Fail	TRUE	TRUE	TRUE	The voting system provider shall provide documentation detailing voting system security in the areas listed below. the system shall contain documented configurations, properties and procedures to prevent, detect and log changes to system capabilities for: 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.	Software	Indeterminate	Category 4 - Insufficient description to support the finding and status	Was the testing board able to make changes, to capabilities for preventing access to voter identification data and data for votes cast by voter which were not logged? Or are there specific categories of information that the logs do not contain?
CA4-P3	416	04-Fail	TRUE	TRUE	TRUE	The voting system provider shall provide documentation detailing voting system security in the areas listed below. the system shall contain documented configurations, properties and procedures to prevent, detect and log changes to system capabilities for: Defining ballot formats;	Software	Indeterminate	Category 4 - Insufficient description to support the finding and status	Was the testing board able to make changes, to capabilities for defining ballot formats which were not logged? Or are there specific categories of information that the logs do not contain?
CA4-P3	417	04-Fail	TRUE	TRUE	TRUE	The voting system provider shall provide documentation detailing voting system security in the areas listed below. the system shall contain documented configurations, properties and procedures to prevent, detect and log changes to system capabilities for: Introducing data for a vote not cast by a registered voter;	Software	Indeterminate	Category 4 - Insufficient description to support the finding and status	Was the testing board able to make changes, to capabilities for introducing data for a vote not cast by a registered voter which were not logged? Or are there specific categories of information that the logs do not contain?
CA4-P3	418	01-Pass	TRUE	TRUE	TRUE	All tests shall be conducted as described in this section 45.6.2.3 in regular election mode. At no point shall testing be conducted in any form of test mode.	Software	Pass		

137

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CA4-P3	419	01-Pass	TRUE	TRUE	TRUE	The voting system application shall ensure that an election setup may not be changed once ballots are printed and/or election media devices are downloaded for votes to be conducted without proper authorization and acknowledgement by the application administrative account. The application and database audit transaction logs shall accurately reflect the name of the system operator making the change(s), the date and time of the change(s), and the "old" and "new" values of the change(s).	Software	Pass		
CA4-P3	420	01-Pass	TRUE	TRUE	TRUE	The Voting system shall provide for appropriately authorized operators to setup and prepare ballots for an election.□ □ The ballots shall be printed so as to give to each eligible elector a clear opportunity to designate his or her choice of candidates, joint candidates, ballot issues, and ballot questions by a mark as instructed. On the ballot may be printed words that will aid the elector, such as "vote for not more than one".□ □ At the end of the list of candidates for each different office shall be one or more blank spaces in which the elector may write the name of any eligible person not printed on the ballot who has filed an affidavit of intent of write-in candidate pursuant to section 1-4-1101. The number of spaces provided shall be the lesser of the number of eligible electors who have properly filed an affidavit of intent of write-in candidate pursuant to section 1-4-1101 or the number of persons to be elected to the office. No such blank spaces shall be provided if	Software	Pass		

138

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CA4-P3	421	04-Fail	TRUE	TRUE	TRUE	The voting system provider shall provide documentation detailing voting system security in the areas listed below. The system shall contain documented configurations, properties and procedures to prevent, detect and log changes to system capabilities for: Alteration of voting system audit records.	Software	Indeterminate	Category 4 - Insufficient description to support the finding and status	Was the testing board able to make changes, to capabilities for Alteration of voting system audit records which were not logged? Or are there specific categories of information that the logs do not contain?
CA4-P3	422	01-Pass	TRUE	TRUE	TRUE	The Voting system shall provide for appropriately authorized operators to preserve the system for future election use.	Software	Pass		
CA4-P3	423	04-Fail	TRUE	TRUE	TRUE	The ballot definition subsystem shall be capable of handling at least 500 potentially active voting positions, arranged to identify party affiliations in a primary election, offices and their associated labels and instructions, candidate names and their associated labels and instructions, and issues or measures and their associated text and instructions.	Software	Indeterminate	Category 4 - Insufficient description to support the finding and status	There are no observations or references to support the finding. What procedures or observations were taken to arrive at the finding?
CA4-P3	424	01-Pass	TRUE	TRUE	TRUE	The ballot display may consist of a matrix of rows or columns assigned to political parties or non-partisan candidates and columns or rows assigned to offices and contests. The display may consist of a contiguous matrix of the entire ballot or it may be segmented to present portions of the ballot in succession.	Software	Pass		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CA4-P3	425	04-Fail	TRUE	TRUE	TRUE	The voting system application shall provide a facility for the definition of the ballot, including the definition of the number of allowable choices for each office and contest, and for special voting options such as write-in candidates. It shall provide for all voting options and specifications as provided for in Articles 5 and 7, Title 1, C.R.S. The system shall generate all required masters and distributed copies of the voting program in conformance with the definition of the ballot for each voting device and remote site. The distributed copies, resident or installed in each voting device, shall include all software modules required to: monitor system status and generate machine-level audit reports, accommodate device control functions performed by remote location officials and maintenance personnel, and register and accumulate votes.	Software	Indeterminate	Category 4 - Insufficient description to support the finding and status	The rule citation and test record statement of purpose, relate to generation and distribution of election specific programming. The Observation relates to audit report content and accuracy of counts. Since this was an election management requirement how did the count error on the scanning devices relate. Was there an error in election definition or distribution of programming which caused the error in tabulation?
CA4-P3	426	zz-Not Applicable	TRUE	TRUE	TRUE	All tabulation devices shall display the unit serial number(s) both physically and within any applicable software, logs or reports.	Software	Not Applicable		
CA4-P3	427	01-Pass	TRUE	TRUE	TRUE	The voting system shall contain a control subsystem that consists of the physical devices and software that accomplish and validate the following operations: Voting system Preparation - The control subsystem shall encompass the hardware and software required to prepare remote location voting devices and memory devices for election use. Remote site preparation includes all operations necessary to install ballot displays, software, and memory devices in each voting device. The control subsystem shall be designed in such a manner as to facilitate the automated validation of ballot and software installation and to detect errors arising from their incorrect selection or improper installation.	Software	Pass		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CA4-P3	428	01-Pass	TRUE	TRUE	TRUE	The voting system shall have a high level of integration between the ballot layout subsystem and the vote tabulation subsystem. This integration shall permit and facilitate the automatic transfer of all ballot setup information from the automated ballot layout module to the single ballot tabulation system that will be used in a fully integrated manner for DRE, optical scan, and any other voting devices included in the voting system.	Software	Pass		
CA4-P3	429	04-Fail	TRUE	TRUE	TRUE	Demonstrate how a user can generate and maintain the definitions and descriptions of political subdivisions and offices within the jurisdiction. The system shall be capable of programming for a maximum of 100 jurisdiction types, each containing a potential of 100 districts within each one.	Software	Suspend	Category 1 - Testing to verify compliance could not be completed.	
CA4-P3	430	01-Pass	TRUE	TRUE	TRUE	The Voting system shall provide for appropriately authorized operators to prepare the system for an election.	Software	Pass		
CB3-P3	302	01-Pass	TRUE	TRUE	TRUE	The voting system shall contain a control subsystem that consists of the physical devices and software that accomplish and validate the following operations: <input type="checkbox"/> Voting system Preparation - The control subsystem shall encompass the hardware and software required to prepare remote location voting devices and memory devices for election use. Remote site preparation includes all operations necessary to install ballot displays, software, and memory devices in each voting device. The control subsystem shall be designed in such a manner as to facilitate the automated validation of ballot and software installation and to detect errors arising from their incorrect selection or improper installation.	CCOS	Pass		
CB3-P3	303	04-Fail	TRUE	TRUE	TRUE	All tabulation devices shall display the unit serial number(s) both physically and within any applicable software, logs or reports.	CCOS	Fail		

141

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CB3-P3	304	04-Fail	TRUE	TRUE	TRUE	The voting system application shall provide a facility for the definition of the ballot, including the definition of the number of allowable choices for each office and contest, and for special voting options such as write-in candidates. It shall provide for all voting options and specifications as provided for in Articles 5 and 7, Title 1, C.R.S. The system shall generate all required masters and distributed copies of the voting program in conformance with the definition of the ballot for each voting device and remote site. The distributed copies, resident or installed in each voting device, shall include all software modules required to: monitor system status and generate machine-level audit reports, accommodate device control functions performed by remote location officials and maintenance personnel, and register and accumulate votes.	CCOS	Indeterminate	Category 4 - Insufficient description to support the finding and status	The rule citation and test record statement of purpose, relate to generation and distribution of election specific programming. The Observation relates to audit report content and accuracy of counts.
CB3-P3	305	01-Pass	TRUE	TRUE	TRUE	The ballot display may consist of a matrix of rows or columns assigned to political parties or non-partisan candidates and columns or rows assigned to offices and contests. The display may consist of a contiguous matrix of the entire ballot or it may be segmented to present portions of the ballot in succession.	CCOS	Pass		
CB3-P3	306	04-Fail	TRUE	TRUE	TRUE	The ballot definition subsystem shall be capable of handling at least 500 potentially active voting positions, arranged to identify party affiliations in a primary election, offices and their associated labels and instructions, candidate names and their associated labels and instructions, and issues or measures and their associated text and instructions.	CCOS	Indeterminate	Category 4 - Insufficient description to support the finding and status	There are no observations or references to support the finding. What procedures or observations were taken to arrive at the finding?

142

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CB3-P3	307	01-Pass	TRUE	TRUE	TRUE	The voting system shall have a high level of integration between the ballot layout subsystem and the vote tabulation subsystem. This integration shall permit and facilitate the automatic transfer of all ballot setup information from the automated ballot layout module to the single ballot tabulation system that will be used in a fully integrated manner for DRE, optical scan, and any other voting devices included in the voting system.	CCOS	Pass		
CB3-P3	309	04-Fail	TRUE	TRUE	TRUE	The voting system provider shall provide documentation detailing voting system security in the areas listed below. The system shall contain documented configurations, properties and procedures to prevent, detect and log changes to system capabilities for: 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.	CCOS	Indeterminate	Category 4 - Insufficient description to support the finding and status	Was the testing board able to make changes, to capabilities for preventing access to voter identification data and data for votes cast by voter which were not logged? Or are there specific categories of information that the logs do not contain?
CB3-P3	310	01-Pass	TRUE	TRUE	TRUE	The Voting system shall provide for appropriately authorized operators to prepare the system for an election.	CCOS	Pass		
CB3-P3	312	01-Pass	TRUE	TRUE	TRUE	All tests shall be conducted as described in this section 45.6.2.3 in regular election mode. At no point shall testing be conducted in any form of test mode.	CCOS	Pass		
CB3-P3	315	04-Fail	TRUE	TRUE	TRUE	The voting system provider shall provide documentation detailing voting system security in the areas listed below. The system shall contain documented configurations, properties and procedures to prevent, detect and log changes to system capabilities for: Preventing access to vote data, including individual votes and vote totals, to unauthorized individuals.	CCOS	Indeterminate	Category 4 - Insufficient description to support the finding and status	Was the testing board able to make changes, to capabilities for preventing access to vote data including individual votes and vote totals to unauthorized individuals which were not logged? Or are there specific categories of information that the logs do not contain?
CB3-P3	316	01-Pass	TRUE	TRUE	TRUE	The Voting system shall provide for appropriately authorized operators to preserve the system for future election use.	CCOS	Pass		

143

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CC1-P3	101	01-Pass	TRUE	TRUE	TRUE	Voting systems (including optical scanning voting systems or direct recording electronic systems) certified by the secretary of state and acquired, purchased or leased by counties pursuant to state law shall: <ul style="list-style-type: none"> <li>(c) if the voter selects votes for more than one candidate for a single office: <ul style="list-style-type: none"> <li>□</li> <li>(i) notify the voter that the voter has selected more than 1 candidate for a single office on the ballot; <ul style="list-style-type: none"> <li>□</li> <li>(ii) notify the voter before the ballot is cast and counted of the effect of casting multiple votes for the office; and <ul style="list-style-type: none"> <li>□</li> <li>(iii) provide the voter with the opportunity to correct the ballot before the ballot is cast and counted.</li> </ul> </li> </ul> </li> </ul> </li></ul>	DRE	Pass		
CC1-P3	102	01-Pass	TRUE	TRUE	TRUE	Single cross mark for party slate not permitted. Each office in every election shall be voted upon separately, and no emblem, device, or political party designation shall be used on the official ballot at any election by which an eligible elector may vote for more than one office by placing a single cross mark on the ballot or by writing in the name of any political party or political organization.	DRE	Pass		
CC1-P3	103	01-Pass	TRUE	TRUE	TRUE	The Voting system shall provide for appropriately authorized operators to setup and prepare ballots for an election. The designated election official shall not print, in connection with any name, any title or degree designating the business or profession of the candidate.	DRE	Pass		

144

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CC1-P3	104	01-Pass	TRUE	TRUE	TRUE	The Voting system shall provide for appropriately authorized operators to setup and prepare ballots for an election.□ The names of the candidates for each office shall be arranged under the designation of the office as provided in section 1-5-404. The designated election official shall not print, in connection with any name, any title or degree designating the business or profession of the candidate.□ Whenever candidates are to be voted for only by the eligible electors of a particular district, county, or other political subdivision, the names of those candidates shall not be printed on any ballots other than those provided for use in the district, county, or political subdivision in which those candidates are to be voted on.□ No printing or distinguishing marks shall be on the ballot except as specifically provided in this code.	DRE	Pass		
CC1-P3	105	04-Fail	TRUE	TRUE	TRUE	The voting systems described in the foregoing paragraphs shall produce a record with an audit capacity for such system.□ (d) The paper record shall be accessible for individuals with disabilities including non-visual accessibility for the blind and visually impaired, in a manner that provides the same opportunity for access and participation (including privacy and independence) as for other voters.	DRE	Fail		
CC1-P3	106	02-Pass Conditional	TRUE	TRUE	TRUE	The voting systems described in the foregoing paragraphs shall produce a record with an audit capacity for such system.□ (c) The paper record produced under subparagraph (a) shall be available as an official record for any recount conducted with respect to any election in which the system is used.	DRE	Conditional Pass		

145

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CC1-P3	107	01-Pass	TRUE	TRUE	TRUE	No nonpunch card electronic voting system shall be purchased, leased, or used unless it fulfills the following requirements: □ It provides for voting in secrecy.	DRE	Pass		
CC1-P3	108	01-Pass	TRUE	TRUE	TRUE	Voting systems (including optical scanning voting systems or direct recording electronic systems) certified by the secretary of state and acquired, purchased or leased by counties pursuant to state law shall:□ (d) Ensure that any notification required under this paragraph preserves the privacy of the vote and the confidentiality of the ballot.	DRE	Pass		
CC1-P3	109	01-Pass	TRUE	TRUE	TRUE	The Voting system shall provide for appropriately authorized operators to setup and prepare ballots for an election. If a referred measure, including but not limited to a measure referred by the school board of a multicounty school district or the board of directors of a multicounty special district to the registered electors of the school district or special district, is referred to registered electors of multiple counties, the alphabetical, numerical, or alphanumerical designation used to identify the measure shall be identical on each ballot that includes the measure.	DRE	Pass		
CC1-P3	110	01-Pass	TRUE	TRUE	TRUE	Voting systems (including optical scanning voting systems or direct recording electronic systems) certified by the secretary of state and acquired, purchased or leased by counties pursuant to state law shall:□ (b) provide the voter with the opportunity (in a private and independent manner) to change the ballot or correct any error before the ballot is cast and counted (including the opportunity to correct the error through the issuance of a replacement ballot if the voter was otherwise unable to change the ballot or correct any error).	DRE	Pass		

146

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CC1-P3	111	01-Pass	TRUE	TRUE	TRUE	Voting systems (including optical scanning voting systems or direct recording electronic systems) certified by the secretary of state and acquired, purchased or leased by counties pursuant to state law shall: (a) permit the voter to verify (in a private and independent manner) the votes selected by the voter on the ballot before the ballot is cast and counted;	DRE	Pass		
CC1-P3	112	04-Fail	TRUE	TRUE	TRUE	If there is no candidate on the ballot for any particular office, the ballot shall read, "No candidate for this office."	DRE	Suspend	Category 1 - Testing to verify compliance could not be completed.	The observation states that the vendor failed to define an election in this manner. It is unclear whether the system has this capability or not.
CC1-P3	113	01-Pass	TRUE	TRUE	TRUE	The text of all ballot issues that are subject to Article X, Section 20 shall be printed in all capital letters. The names of all candidates and all other ballot issues and questions shall be printed in upper and lower case.	DRE	Pass		
CC1-P3	114	01-Pass	TRUE	TRUE	TRUE	The voting systems described in the foregoing paragraphs shall produce a record with an audit capacity for such system. (b) The voting system shall provide the voter with an opportunity to change the ballot or correct any error before the permanent paper record is produced.	DRE	Pass		
CC1-P3	115	01-Pass	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: In a primary election, permits each elector to vote only for a candidate seeking nomination by the political party with which the elector is affiliated.	DRE	Pass		
CC1-P3	116	01-Pass	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: In a presidential election, permits each elector to vote by a single operation for all presidential electors of a pair of candidates for president and vice president.	DRE	Pass		

147

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CC1-P3	117	01-Pass	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: Does not use a device for the piercing of ballots by the elector.	DRE	Pass		
CC1-P3	118	01-Pass	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: Provides a method for write-in voting.	DRE	Pass		
CC1-P3	119	zz-NA	TRUE	TRUE	TRUE	Ballot design shall cover the scope of allowable designs for the given system. For example, if a system is capable of producing 11" and 18" ballots, then both ballot styles shall be tested in each of the elections above. If more sizes are available, they shall also be tested. Ballots must be designed and presented with a maximum of four (4) columns and a minimum of one (1) column.	DRE	Pass		
CC1-P3	120	01-Pass	TRUE	TRUE	TRUE	Ballots shall include the following minimum race situations to simulate and test "real world" situations in the State of Colorado: In a general election, allow a voter to vote for any candidate for any office, in the number of positions allowed for the office, and to select any measure on the ballot that the candidate is allowed to vote in, regardless of party.	DRE	Pass		
CC1-P3	121	01-Pass	TRUE	TRUE	TRUE	The voting system shall provide capabilities to enforce confidentiality of voters' ballot choices. All optical scan devices, associated ballot boxes and V-VPAT storage devices shall provide physical locks and procedures to prevent disclosure of voters' confidential ballot choices during and after the vote casting operation.	DRE	Pass		

148

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CC1-P3	122	04-Fail	TRUE	TRUE	TRUE	Ballots shall include the following minimum race situations to simulate and test "real world" situations in the State of Colorado: Allow for programming to accommodate Colorado recall questions as prescribed in Article 12 of Title 1, C.R.S.;	DRE	Indeterminate	Category 4 - Insufficient description to support the finding and status	It is unclear whether this is an election definition error made by the vendor or testing board or whether the system was incapable of performing the required function.
CC1-P3	123	01-Pass	TRUE	TRUE	TRUE	Ballots shall include candidates to represent the maximum number of political parties in the State of Colorado, and shall accommodate all qualified political parties and political organizations.	DRE	Pass		
CC1-P3	124	01-Pass	TRUE	TRUE	TRUE	Ballots shall include the following minimum race situations to simulate and test "real world" situations in the State of Colorado: Ability to contain a ballot question or issue of at least 200 words.	DRE	Pass		
CC1-P3	125	04-Fail	TRUE	TRUE	TRUE	Ballots shall include the following minimum race situations to simulate and test "real world" situations in the State of Colorado: A minimum of 20 pairs of "yes" and "no" positions for voting on ballot issues.	DRE	Suspend	Category 1 - Testing to verify compliance could not be completed.	
CC2-P3	201	01-Pass	TRUE	TRUE	TRUE	No nonpunch card electronic voting system shall be purchased, leased, or used unless it fulfills the following requirements: <input type="checkbox"/> If the system uses a voting device: <input type="checkbox"/> It contains a protective counter with a register which cannot be reset, which shall register the cumulative total number of movements of the operating mechanism.	PCOS	Pass		
CC2-P3	202	01-Pass	TRUE	TRUE	TRUE	No nonpunch card electronic voting system shall be purchased, leased, or used unless it fulfills the following requirements: <input type="checkbox"/> It rejects any vote for an office or on a ballot issue if the number of votes exceeds the number the elector is entitled to cast.	PCOS	Pass		
CC2-P3	203	01-Pass	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: <input type="checkbox"/> Provides a method for write-in voting.	PCOS	Pass		

149

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CC2-P3	204	01-Pass	TRUE	TRUE	TRUE	A duplicate stub is not required for a ballot that is prepared for a mail ballot election pursuant to article 7.5 of this title.	PCOS	Pass		
CC2-P3	205	04-Fail	TRUE	TRUE	TRUE	No nonpunch card electronic voting system shall be purchased, leased, or used unless it fulfills the following requirements: <input type="checkbox"/> If the system uses a voting device: It is suitably designed, of durable construction, and capable of being used safely, efficiently, and accurately in the conduct of elections and the tabulation of votes.	PCOS	Fail		
CC2-P3	206	01-Pass	TRUE	TRUE	TRUE	No nonpunch card electronic voting system shall be purchased, leased, or used unless it fulfills the following requirements: <input type="checkbox"/> It prevents the elector from voting for the same candidates more than once for the same office;	PCOS	Pass		
CC2-P3	207	01-Pass	TRUE	TRUE	TRUE	No nonpunch card electronic voting system shall be purchased, leased, or used unless it fulfills the following requirements: <input type="checkbox"/> It permits each elector, other than at a primary election, to vote for the candidates of one or more parties and for unaffiliated candidates.	PCOS	Pass		
CC2-P3	208	01-Pass	TRUE	TRUE	TRUE	No ballot stub is required for a ballot produced on demand, so long as the quantity of ballots produced for the election can be reconciled by the ballot processing method used by the voting system. Such ballots may contain printed and distinguishing marks, so long as secrecy in voting is protected.	PCOS	Pass		
CC2-P3	209	01-Pass	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: Permits each elector to verify his or her votes privately and independently before the ballot is cast.	PCOS	Pass		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CC2-P3	210	01-Pass	TRUE	TRUE	TRUE	Voting systems (including optical scanning voting systems or direct recording electronic systems) certified by the secretary of state and acquired, purchased or leased by counties pursuant to state law shall: <ul style="list-style-type: none"> <li>□ provide the voter with the opportunity (in a private and independent manner) to change the ballot or correct any error before the ballot is cast and counted (including the opportunity to correct the error through the issuance of a replacement ballot if the voter was otherwise unable to change the ballot or correct any error).</li> </ul>	PCOS	Pass		
CC2-P3	211	zz - Not Applicable	TRUE	TRUE	TRUE	The voting systems described in the foregoing paragraphs shall produce a record with an audit capacity for such system. <ul style="list-style-type: none"> <li>□ (d) The paper record shall be accessible for individuals with disabilities including non-visual accessibility for the blind and visually impaired, in a manner that provides the same opportunity for access and participation (including privacy and independence) as for other voters.</li> </ul>	PCOS	Not Applicable		
CC2-P3	212	01-Pass	TRUE	TRUE	TRUE	Voting systems (including optical scanning voting systems or direct recording electronic systems) certified by the secretary of state and acquired, purchased or leased by counties pursuant to state law shall: <ul style="list-style-type: none"> <li>□ (a) permit the voter to verify (in a private and independent manner) the votes selected by the voter on the ballot before the ballot is cast and counted;</li> </ul>	PCOS	Pass		
CC2-P3	213	01-Pass	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: Permits each elector privately and independently to change the ballot or correct any error before the ballot is cast, including by voting a replacement ballot if the elector is otherwise unable to change the ballot or correct an error.	PCOS	Pass		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CC2-P3	214	01-Pass	TRUE	TRUE	TRUE	The voting systems described in the foregoing paragraphs shall produce a record with an audit capacity for such system. <ul style="list-style-type: none"> <li>□ (c) The paper record produced under subparagraph (a) shall be available as an official record for any recount conducted with respect to any election in which the system is used.</li> </ul>	PCOS	Pass		
CC2-P3	215	01-Pass	TRUE	TRUE	TRUE	The voting systems described in the foregoing paragraphs shall produce a record with an audit capacity for such system. <ul style="list-style-type: none"> <li>□ (b) The voting system shall provide the voter with an opportunity to change the ballot or correct any error before the permanent paper record is produced.</li> </ul>	PCOS	Pass		
CC2-P3	216	04-Fail	TRUE	TRUE	TRUE	Voting systems (including optical scanning voting systems or direct recording electronic systems) certified by the secretary of state and acquired, purchased or leased by counties pursuant to state law shall: <ul style="list-style-type: none"> <li>□ (d) Ensure that any notification required under this paragraph preserves the privacy of the vote and the confidentiality of the ballot.</li> </ul>	PCOS	Fail		
CC2-P3	217	01-Pass	TRUE	TRUE	TRUE	Voting systems (including optical scanning voting systems or direct recording electronic systems) certified by the secretary of state and acquired, purchased or leased by counties pursuant to state law shall: <ul style="list-style-type: none"> <li>□ (c) if the voter selects votes for more than one candidate for a single office: <ul style="list-style-type: none"> <li>□</li> <li>□ (i) notify the voter that the voter has selected more than 1 candidate for a single office on the ballot;</li> <li>□</li> <li>□ (ii) notify the voter before the ballot is cast and counted of the effect of casting multiple votes for the office; and</li> <li>□</li> <li>□ (iii) provide the voter with the opportunity to correct the ballot before the ballot is cast and counted.</li> </ul> </li> </ul>	PCOS	Pass		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CC2-P3	218	01-Pass	TRUE	TRUE	TRUE	The voting system shall provide capabilities to enforce confidentiality of voters' ballot choices. <input type="checkbox"/> All optical scan devices, associated ballot boxes and V-VPAT storage devices shall provide physical locks and procedures to prevent disclosure of voters' confidential ballot choices during and after the vote casting operation.	PCOS	Pass		
CC2-P3	219	01-Pass	TRUE	TRUE	TRUE	Precinct Optical Scan Procedures for voters whose ballots are rejected or sorted by the precinct counter as a blank or overvoted ballot shall be given the opportunity to correct their ballot.	PCOS	Pass		
CC2-P3	220	04-Fail	TRUE	TRUE	TRUE	Precinct Optical Scan Procedures for Ballots sorted to a write-in bin shall be tallied at the conclusion of the voting and delivered to the central counting center in a secure container.	PCOS	Fail		
CC2-P3	221	01-Pass	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: <input type="checkbox"/> If the elector overvotes it notifies the elector before the ballot is cast that the elector has overvoted.	PCOS	Pass		
CC2-P3	222	01-Pass	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: <input type="checkbox"/> In a presidential election, permits each elector to vote by a single operation for all presidential electors of a pair of candidates for president and vice president.	PCOS	Pass		

153

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CC2-P3	223	zz - Not Applicable	TRUE	TRUE	TRUE	No nonpunch card electronic voting system shall be purchased, leased, or used unless it fulfills the following requirements: <input type="checkbox"/> If the system uses a voting device: <input type="checkbox"/> It permits the names of candidates and the text of issues to be printed on pages which are securely attached to the voting device, the pages to be securely locked in a metal frame or sealed to prevent tampering.	PCOS	Not Applicable		
CC2-P3	224	01-Pass	TRUE	TRUE	TRUE	Ballots shall include the following minimum race situations to simulate and test "real world" situations in the State of Colorado: Ability to contain a ballot question or issue of at least 200 words.	PCOS	Pass		
CC2-P3	225	04-Fail	TRUE	TRUE	TRUE	Ballots shall include the following minimum race situations to simulate and test "real world" situations in the State of Colorado: A minimum of 20 pairs of "yes" and "no" positions for voting on ballot issues.	PCOS	Fail		
CC2-P3	226	01-Pass	TRUE	TRUE	TRUE	Ballots shall include the following minimum race situations to simulate and test "real world" situations in the State of Colorado: In a general election, allow a voter to vote for any candidate for any office, in the number of positions allowed for the office, and to select any measure on the ballot that the candidate is allowed to vote in, regardless of party.	PCOS	Pass		
CC2-P3	227	01-Pass	TRUE	TRUE	TRUE	Ballots shall include candidates to represent the maximum number of political parties in the State of Colorado, and shall accommodate all qualified political parties and political organizations.	PCOS	Pass		

154

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CC2-P3	228	04-Fail	TRUE	TRUE	TRUE	Ballot design shall cover the scope of allowable designs for the given system. For example, if a system is capable of producing 11" and 18" ballots, then both ballot styles shall be tested in each of the elections above. If more sizes are available, they shall also be tested. Ballots must be designed and presented with a maximum of four (4) columns and a minimum of one (1) column.	PCOS	Indeterminate	Category 4 - Insufficient description to support the finding and status	It is unclear whether this is a lack of materials provided by the vendor or whether the system is incapable of meeting the requirement. The ballot templates are part of the trusted build provided by the ITA's under the NASED Qualification. Would Colorado allow the introduction of a four column template?
CC2-P3	229	01-Pass	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: <input type="checkbox"/> If the elector overvotes it notifies the elector before the vote is cast that an overvote for any office, ballot question, or ballot issue will not be counted.	PCOS	Pass		
CC2-P3	230	01 - Pass	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: <input type="checkbox"/> Can tabulate votes from ballots of different political parties at the same polling place in a primary election.	PCOS	Pass		
CC2-P3	231	04-Fail	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: <input type="checkbox"/> Counts votes correctly.	PCOS	Fail		
CC2-P3	232	01-Pass	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: <input type="checkbox"/> Does not use a device for the piercing of ballots by the elector.	PCOS	Pass		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CC2-P3	233	04-Fail	TRUE	TRUE	TRUE	Except as provided in subsections (1.5) and (1.6) of this section, the extreme top part of each ballot may be divided into two spaces by two perforated or dotted lines. Each space shall be not less than one inch wide. The top portion is called the stub, and the next portion is called the duplicate stub. The same number shall be printed upon both the stub and the duplicate stub. All ballots shall be numbered consecutively. All ballots shall be uniform and of sufficient length and width to allow for the names of candidates, officers, ballot issues, and ballot questions to be printed in clear, plain type, with a space of at least one-half inch between the different columns on the ballot. On each ballot shall be printed the endorsement "Official ballot for .....", and after the word "for" shall follow the designation of the precinct, if appropriate, and the political subdivision for which the ballot is prepared, the date of the election, and a facsimile of the signature of the election official. The election official shall use precise	PCOS	Indeterminate	Category 4 - Insufficient description to support the finding and status	It is unclear whether this is a lack of materials provided by the vendor or whether the system is incapable of meeting the requirement. The test record says that this requirement is "possible." If there is any factual basis for the testing board determining that it is possible, why did the system not pass. If "possible" was asserted and not verified why not a status of "suspend"
CC2-P3	234	01-Pass	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: <input type="checkbox"/> In a primary election, permits each elector to vote only for a candidate seeking nomination by the political party with which the elector is affiliated.	PCOS	Pass		
CC2-P3	235	01-Pass	TRUE	TRUE	TRUE	The text of all ballot issues that are subject to Article X, Section 20 shall be printed in all capital letters. The names of all candidates and all other ballot issues and questions shall be printed in upper and lower case.	PCOS	Pass		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CC2-P3	236	01-Pass	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: Permits each elector to vote for all offices for which the elector is lawfully entitled to vote and no others, to vote for as many candidates for an office as the elector is entitled to vote for, and to vote for or against any ballot question or ballot issue on which the elector is entitled to vote.	PCOS	Pass		
CC2-P3	237	04-Fail	TRUE	TRUE	TRUE	Ballots shall include the following minimum race situations to simulate and test "real world" situations in the State of Colorado: Allow for programming to accommodate Colorado recall questions as prescribed in Article 12 of Title 1, C.R.S.;	PCOS	Indeterminate	Category 4 - Insufficient description to support the finding and status	The test record makes it clear that the recall was tabulated incorrectly. It is unclear whether this is an operator error in the way the election definition was set up, whether the system is incapable of creating a complaint election definition or whether with a compliant election definition the system incorrectly tabulated.
CC2-P3	238	04-Fail	TRUE	TRUE	TRUE	No nonpunch card electronic voting system shall be purchased, leased, or used unless it fulfills the following requirements: <input type="checkbox"/> It provides for voting in secrecy.	PCOS	Fail		
CC2-P3	239	01-Pass	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: <input type="checkbox"/> For electronic and electromechanical voting systems using ballot cards, accepts an overvoted or undervoted ballot if the elector chooses to cast the ballot, but it does not record a vote for any office, ballot question, or ballot issue that has been overvoted.	PCOS	Pass		
CC2-P3	240	04-Fail	TRUE	TRUE	TRUE	If there is no candidate on the ballot for any particular office, the ballot shall read, "No candidate for this office."	PCOS	Indeterminate	Category 4 - Insufficient description to support the finding and status	The record does not tell us whether the vendor simply failed to create an election definition and ballots that met the requirement or whether the system is incapable of meeting the requirement.
CC2-P3	242	01-Pass	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: <input type="checkbox"/> Does not record a vote for any office, ballot question, or ballot issue that is overvoted on a ballot cast by an elector.	PCOS	Pass		

157

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CC2-P3	244	01-Pass	TRUE	TRUE	TRUE	Single cross mark for party slate not permitted. Each office in every election shall be voted upon separately, and no emblem, device, or political party designation shall be used on the official ballot at any election by which an eligible elector may vote for more than one office by placing a single cross mark on the ballot or by writing in the name of any political party or political organization.	PCOS	Pass		
CC2-P3	245	01-Pass	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: <input type="checkbox"/> If the elector overvotes it gives the elector the opportunity to correct the ballot before the ballot is cast.	PCOS	Pass		
CC2-P3	246	04-Fail	TRUE	TRUE	TRUE	No nonpunch card electronic voting system shall be purchased, leased, or used unless it fulfills the following requirements: <input type="checkbox"/> If the system uses a voting device: <input type="checkbox"/> It is capable of providing printouts of vote totals by office and candidate or by ballot issue, including a numeric-only printout to be used for testing as provided in section 1-7-509.	PCOS	Fail		
CC2-P3	248	01-Pass	TRUE	TRUE	TRUE	No nonpunch card electronic voting system shall be purchased, leased, or used unless it fulfills the following requirements It permits each elector to write in the names of eligible candidates not appearing on the printed ballot, to vote for as many candidates for an office as there are vacancies for which the elector is entitled to vote, and to vote for or against any ballot issue upon which the elector is entitled to vote.	PCOS	Pass		

158

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CC2-P3	249	01 - Pass	TRUE	TRUE	TRUE	The voting system shall contain a control subsystem that consists of the physical devices and software that accomplish and validate the following operations: <input type="checkbox"/> Error Detection – the voting system shall contain a detailed list and description of the error messages that will appear on the voting devices, the controller (if any), the paper ballot printer, programmer, or any other device used in the voting process to indicate that a component has failed or is malfunctioning.	CCOS	Pass		
CC3-P3	301	04-Fail	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: <input type="checkbox"/> For electronic and electromechanical voting systems using ballot cards, accepts an overvoted or undervoted ballot if the elector chooses to cast the ballot, but it does not record a vote for any office, ballot question, or ballot issue that has been overvoted.	CCOS	Indeterminate	Category 4 - Insufficient description to support the finding and status	The requirement is that the system accept and properly tabulate ballots with undervotes. The record shows that the race was incorrectly tabulated. It is unclear whether the inaccuracy was a product of undervotes being incorrectly handled or whether the system was incorrectly tabulating candidate votes .
CC3-P3	302	01-Pass	TRUE	TRUE	TRUE	The text of all ballot issues that are subject to Article X, Section 20 shall be printed in all capital letters. The names of all candidates and all other ballot issues and questions shall be printed in upper and lower case.	CCOS	Pass		
CC3-P3	303	04-Fail	TRUE	TRUE	TRUE	If there is no candidate on the ballot for any particular office, the ballot shall read, "No candidate for this office."	CCOS	Indeterminate	Category 4 - Insufficient description to support the finding and status	The record does not tell us whether the vendor simply failed to create an election definition and ballots that met the requirement or whether the system is incapable of meeting the requirement.
CC3-P3	307	01-Pass	TRUE	TRUE	TRUE	Single cross mark for party slate not permitted. Each office in every election shall be voted upon separately, and no emblem, device, or political party designation shall be used on the official ballot at any election by which an eligible elector may vote for more than one office by placing a single cross mark on the ballot or by writing in the name of any political party or political organization.	CCOS	Pass		

159

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CC3-P3	308	04-Fail	TRUE	TRUE	TRUE	Ballots shall include the following minimum race situations to simulate and test "real world" situations in the State of Colorado: Allow for programming to accommodate Colorado recall questions as prescribed in Article 12 of Title 1, C.R.S.	CCOS	Indeterminate	Category 4 - Insufficient description to support the finding and status	The record does not tell us whether the vendor simply failed to create an election definition and ballots that met the requirement or whether the system is incapable of meeting the requirement.
CC3-P3	309	04-Fail	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: <input type="checkbox"/> Does not record a vote for any office, ballot question, or ballot issue that is overvoted on a ballot cast by an elector.	CCOS	Indeterminate	Category 4 - Insufficient description to support the finding and status	The requirement is for proper tabulation of ballots with overvotes. The observation is that the system did not handle the recall election and vote for three contests correctly.
CC3-P3	310	zz-Not Applicable	TRUE	TRUE	TRUE	No nonpunch card electronic voting system shall be purchased, leased, or used unless it fulfills the following requirements: <input type="checkbox"/> If the system uses a voting device: <input type="checkbox"/> It permits the names of candidates and the text of issues to be printed on pages which are securely attached to the voting device, the pages to be securely locked in a metal frame or sealed to prevent tampering.	CCOS	Not Applicable		
CC3-P3	311	01-Pass	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: <input type="checkbox"/> In a presidential election, permits each elector to vote by a single operation for all presidential electors of a pair of candidates for president and vice president.	CCOS	Pass		
CC3-P3	312	01-Pass	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: <input type="checkbox"/> Provides a method for write-in voting.	CCOS	Pass		
CC3-P3	313	04-Fail	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: <input type="checkbox"/> Counts votes correctly.	CCOS	Indeterminate	Category 4 - Insufficient description to support the finding and status	The requirement is to count votes correctly The observation is that the system did not handle the recall election and vote for three contests correctly. As with other findings on this issue, the record is unclear whether this is an issue of correct counts, one of election definition capability or simply that the vendor did not provide ballots and election definitions compliant with the requirement.

160

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CC3-P3	314	04-Fail	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: <input type="checkbox"/> Can tabulate the total number of votes for each candidate for each office and the total number of votes for and against each ballot question and ballot issue for the polling place.	CCOS	Fail		
CC3-P3	315	01-Pass	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: <input type="checkbox"/> Can tabulate votes from ballots of different political parties at the same polling place in a primary election.	CCOS	Pass		
CC3-P3	316	01-Pass	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: <input type="checkbox"/> If the elector overvotes it notifies the elector before the ballot is cast that the elector has overvoted.	CCOS	Pass		
CC3-P3	317	zz-Not Applicable	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: <input type="checkbox"/> If the elector overvotes it notifies the elector before the vote is cast that an overvote for any office, ballot question, or ballot issue will not be counted.	CCOS	Not Applicable		
CC3-P3	318	zz-Not Applicable	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: <input type="checkbox"/> If the elector overvotes it gives the elector the opportunity to correct the ballot before the ballot is cast.	CCOS	Not Applicable		

161

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CC3-P3	319	zz-Not Applicable	TRUE	TRUE	TRUE	The voting system shall provide capabilities to enforce confidentiality of voters' ballot choices. <input type="checkbox"/> All optical scan devices, associated ballot boxes and V-VPAT storage devices shall provide physical locks and procedures to prevent disclosure of voters' confidential ballot choices during and after the vote casting operation.	CCOS	Not Applicable		
CC3-P3	320	01-Pass	TRUE	TRUE	TRUE	A duplicate stub is not required for a ballot that is prepared for a mail ballot election pursuant to article 7.5 of this title.	CCOS	Pass		
CC3-P3	321	01-Pass	TRUE	TRUE	TRUE	No ballot stub is required for a ballot produced on demand, so long as the quantity of ballots produced for the election can be reconciled by the ballot processing method used by the voting system. Such ballots may contain printed and distinguishing marks, so long as secrecy in voting is protected.	CCOS	Pass		
CC3-P3	322	04-Fail	TRUE	TRUE	TRUE	Voting systems (including optical scanning voting systems or direct recording electronic systems) certified by the secretary of state and acquired, purchased or leased by counties pursuant to state law shall: <input type="checkbox"/> (b) provide the voter with the opportunity (in a private and independent manner) to change the ballot or correct any error before the ballot is cast and counted (including the opportunity to correct the error through the issuance of a replacement ballot if the voter was otherwise unable to change the ballot or correct any error).	CCOS	Not Applicable	Category 2 - Questionable interpretation of the requirement	The requirement is for rejection of overvoted ballots in the precinct. This would be Non Applicable to Central Count Scanners. The central count scanner system not handling the overvotes correctly is not relevant to this requirement.
CC3-P3	323	zz-Not Applicable	TRUE	TRUE	TRUE	The voting systems described in the foregoing paragraphs shall produce a record with an audit capacity for such system. <input type="checkbox"/> (d) The paper record shall be accessible for individuals with disabilities including non-visual accessibility for the blind and visually impaired, in a manner that provides the same opportunity for access and participation (including privacy and independence) as for other voters.	CCOS	Not Applicable		

162

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CC3-P3	324	zz-Not Applicable	TRUE	TRUE	TRUE	Voting systems (including optical scanning voting systems or direct recording electronic systems) certified by the secretary of state and acquired, purchased or leased by counties pursuant to state law shall: <input type="checkbox"/> (a) permit the voter to verify (in a private and independent manner) the votes selected by the voter on the ballot before the ballot is cast and counted;	CCOS	Not Applicable		
CC3-P3	325	01-Pass	TRUE	TRUE	TRUE	The voting systems described in the foregoing paragraphs shall produce a record with an audit capacity for such system. <input type="checkbox"/> (c) The paper record produced under subparagraph (a) shall be available as an official record for any recount conducted with respect to any election in which the system is used.	CCOS	Pass		
CC3-P3	326	zz-Not Applicable	TRUE	TRUE	TRUE	The voting systems described in the foregoing paragraphs shall produce a record with an audit capacity for such system. <input type="checkbox"/> (b) The voting system shall provide the voter with an opportunity to change the ballot or correct any error before the permanent paper record is produced.	CCOS	Not Applicable		
CC3-P3	327	zz-Not Applicable	TRUE	TRUE	TRUE	No nonpunch card electronic voting system shall be purchased, leased, or used unless it fulfills the following requirements: <input type="checkbox"/> It provides for voting in secrecy.	CCOS	Not Applicable		

163

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CC3-P3	328	04-Fail	TRUE	TRUE	TRUE	Voting systems (including optical scanning voting systems or direct recording electronic systems) certified by the secretary of state and acquired, purchased or leased by counties pursuant to state law shall: <input type="checkbox"/> (c) if the voter selects votes for more than one candidate for a single office: <input type="checkbox"/> <input type="checkbox"/> (i) notify the voter that the voter has selected more than 1 candidate for a single office on the ballot; <input type="checkbox"/> <input type="checkbox"/> (ii) notify the voter before the ballot is cast and counted of the effect of casting multiple votes for the office; and <input type="checkbox"/> <input type="checkbox"/> (iii) provide the voter with the opportunity to correct the ballot before the ballot is cast and counted.	CCOS	Not Applicable	Category 2 - Questionable interpretation of the requirement	The requirement is for specific functions by precinct equipment. This would be Non Applicable to Central Count Scanners. The central count scanner system not handling the overvotes correctly is not relevant to this requirement.
CC3-P3	329	04-Fail	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: Permits each elector to vote for all offices for which the elector is lawfully entitled to vote and no others, to vote for as many candidates for an office as the elector is entitled to vote for, and to vote for or against any ballot question or ballot issue on which the elector is entitled to vote.	CCOS	Indeterminate	Category 4 - Insufficient description to support the finding and status	The record is unclear whether this is an issue of correct counts, one of election definition capability or simply that the vendor did not provide ballots and election definitions compliant with the requirement.
CC3-P3	330	01-Pass	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: Permits each elector to verify his or her votes privately and independently before the ballot is cast.	CCOS	Not Applicable	Category 2 - Questionable interpretation of the requirement	Would this requirement be Non Applicable to Central Count Optical Scan?

164

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CC3-P3	331	04-Fail	TRUE	TRUE	TRUE	No nonpunch card electronic voting system shall be purchased, leased, or used unless it fulfills the following requirements: <input type="checkbox"/> If the system uses a voting device: <input type="checkbox"/> It contains a protective counter with a register which cannot be reset, which shall register the cumulative total number of movements of the operating mechanism.	CCOS	Indeterminate	Category 2 - Questionable interpretation of the requirement	Is a Central Count OS device a "Voting Device"? If so, is a system reset during a reinstall of the system fatal?
CC3-P3	332	04-Fail	TRUE	TRUE	TRUE	No nonpunch card electronic voting system shall be purchased, leased, or used unless it fulfills the following requirements: <input type="checkbox"/> If the system uses a voting device: It is suitably designed, of durable construction, and capable of being used safely, efficiently, and accurately in the conduct of elections and the tabulation of votes.	CCOS	Fail		
CC3-P3	333	zz-Not Applicable	TRUE	TRUE	TRUE	No nonpunch card electronic voting system shall be purchased, leased, or used unless it fulfills the following requirements: <input type="checkbox"/> It prevents the elector from voting for the same candidates more than once for the same office;	CCOS	Not Applicable		
CC3-P3	334	01-Pass	TRUE	TRUE	TRUE	No nonpunch card electronic voting system shall be purchased, leased, or used unless it fulfills the following requirements: <input type="checkbox"/> It permits each elector, other than at a primary election, to vote for the candidates of one or more parties and for unaffiliated candidates.	CCOS	Pass		
CC3-P3	335	04-Fail	TRUE	TRUE	TRUE	No nonpunch card electronic voting system shall be purchased, leased, or used unless it fulfills the following requirements: <input type="checkbox"/> It rejects any vote for an office or on a ballot issue if the number of votes exceeds the number the elector is entitled to cast.	CCOS	Indeterminate	Category 2 - Questionable interpretation of the requirement	The requirement is for rejection of overvotes. This may be Non Applicable to Central Count Scanners. If this is a functional requirement for precinct scanners then the central count scanner system not handling the overvotes correctly is not relevant to this requirement.

165

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CC3-P3	336	zz-Not Applicable	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: <input type="checkbox"/> Does not use a device for the piercing of ballots by the elector.	CCOS	Not Applicable		
CC3-P3	337	04-Fail	TRUE	TRUE	TRUE	Voting systems (including optical scanning voting systems or direct recording electronic systems) certified by the secretary of state and acquired, purchased or leased by counties pursuant to state law shall: <input type="checkbox"/> (d) Ensure that any notification required under this paragraph preserves the privacy of the vote and the confidentiality of the ballot.	CCOS	Indeterminate	Category 2 - Questionable interpretation of the requirement	The requirement is for preservation of voter secrecy during notification. This appears to be a functional requirement for precinct scanners and may be Non Applicable to Central Count Scanners. If this is a functional requirement for precinct scanners then the central count scanner system not handling the overvotes correctly is not relevant to this requirement.
CC3-P3	338	01-Pass	TRUE	TRUE	TRUE	Ballots shall include candidates to represent the maximum number of political parties in the State of Colorado, and shall accommodate all qualified political parties and political organizations.	CCOS	Pass		
CC3-P3	339	04-Fail	TRUE	TRUE	TRUE	Ballots shall include the following minimum race situations to simulate and test "real world" situations in the State of Colorado: In a general election, allow a voter to vote for any candidate for any office, in the number of positions allowed for the office, and to select any measure on the ballot that the candidate is allowed to vote in, regardless of party.	CCOS	Indeterminate	Category 4 - Insufficient description to support the finding and status	The requirement is to allow voters to cast votes for the number of positions allowed and in contests allowed. The observation a lack of tabulation accuracy
CC3-P3	340	04-Fail	TRUE	TRUE	TRUE	Ballots shall include the following minimum race situations to simulate and test "real world" situations in the State of Colorado: A minimum of 20 pairs of "yes" and "no" positions for voting on ballot issues.	CCOS	Indeterminate	Category 4 - Insufficient description to support the finding and status	It is unclear whether this is an lack of materials provided by the vendor or whether the system is incapable of meeting the requirement. The ballot templates are part of the trusted build provided by the ITA's under the NASED Qualification. Would Colorado allow the introduction of a four column template?
CC3-P3	341	01-Pass	TRUE	TRUE	TRUE	Ballots shall include the following minimum race situations to simulate and test "real world" situations in the State of Colorado: Ability to contain a ballot question or issue of at least 200 words.	CCOS	Pass		

166

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CC3-P3	342	04-Fail	TRUE	TRUE	TRUE	Except as provided in subsections (1.5) and (1.6) of this section, the extreme top part of each ballot may be divided into two spaces by two perforated or dotted lines. Each space shall be not less than one inch wide. The top portion is called the stub, and the next portion is called the duplicate stub. The same number shall be printed upon both the stub and the duplicate stub. All ballots shall be numbered consecutively. All ballots shall be uniform and of sufficient length and width to allow for the names of candidates, officers, ballot issues, and ballot questions to be printed in clear, plain type, with a space of at least one-half inch between the different columns on the ballot. On each ballot shall be printed the endorsement "Official ballot for .....", and after the word "for" shall follow the designation of the precinct, if appropriate, and the political subdivision for which the ballot is prepared, the date of the election, and a facsimile of the signature of the election official. The election official shall use precise	CCOS	Indeterminate	Category 4 - Insufficient description to support the finding and status	As with the test referenced in the record, CC2-P3-233, it is unclear whether this is an lack of materials provided by the vendor or whether the system is incapable of meeting the requirement. The test record says that this requirement is "possible." If there is any factual basis for the testing board determining that it is possible, why did the system not pass. If "possible" was asserted and not verified why not a status of "suspend"
CC3-P3	343	04-Fail	TRUE	TRUE	TRUE	Ballot design shall cover the scope of allowable designs for the given system. For example, if a system is capable of producing 11" and 18" ballots, then both ballot styles shall be tested in each of the elections above. If more sizes are available, they shall also be tested. Ballots must be designed and presented with a maximum of four (4) columns and a minimum of one (1) column.	CCOS	Indeterminate	Category 4 - Insufficient description to support the finding and status	It is unclear whether this is an lack of materials provided by the vendor or whether the system is incapable of meeting the requirement. The ballot templates are part of the trusted build provided by the ITA's under the NASED Qualification. Would Colorado allow the introduction of a four column template?
CC3-P3	344	01-Pass	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: <input type="checkbox"/> In a primary election, permits each elector to vote only for a candidate seeking nomination by the political party with which the elector is affiliated.	CCOS	Pass		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CC3-P3	345	04-Fail	TRUE	TRUE	TRUE	Sequence of Resolution Procedures for Central Count Optical Scan Procedures are (2) Official ballots shall be processed through the optical scanner, with sorted overvotes, blank ballots, and write-in ballots viewed and resolved by the resolution board. Only ballots sorted by the machine shall be subject to review by the resolution board. If there are no legally qualified write-in candidates, the write-in sort option shall not be utilized. The number of each duplicated ballot shall be entered on the resolution board log sheet.	CCOS	Fail		
CC3-P3	346	01-Pass	TRUE	TRUE	TRUE	The voting system shall contain a control subsystem that consists of the physical devices and software that accomplish and validate the following operations: <input type="checkbox"/> Error Detection – the voting system shall contain a detailed list and description of the error messages that will appear on the voting devices, the controller (if any), the paper ballot printer, programmer, or any other device used in the voting process to indicate that a component has failed or is malfunctioning.	CCOS	Pass		
CC3-P3	347	04-Fail	TRUE	TRUE	TRUE	No nonpunch card electronic voting system shall be purchased, leased, or used unless it fulfills the following requirements: <input type="checkbox"/> If the system uses a voting device: <input type="checkbox"/> It is capable of providing printouts of vote totals by office and candidate or by ballot issue, including a numeric-only printout to be used for testing as provided in section 1-7-509.	CCOS	Fail		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CC3-P3	348	01-Pass	TRUE	TRUE	TRUE	No nonpunch card electronic voting system shall be purchased, leased, or used unless it fulfills the following requirements It permits each elector to write in the names of eligible candidates not appearing on the printed ballot, to vote for as many candidates for an office as there are vacancies for which the elector is entitled to vote, and to vote for or against any ballot issue upon which the elector is entitled to vote.	CCOS	Pass		
CC3-P3	360	zz-Not Applicable	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: Permits each elector privately and independently to change the ballot or correct any error before the ballot is cast, including by voting a replacement ballot if the elector is otherwise unable to change the ballot or correct an error.	CCOS	Not Applicable		
CC4-P3	401	04-Fail	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: <input type="checkbox"/> For electronic and electromechanical voting systems using ballot cards, accepts an overvoted or undervoted ballot if the elector chooses to cast the ballot, but it does not record a vote for any office, ballot question, or ballot issue that has been overvoted.	Software	Indeterminate	Category 2 - Questionable interpretation of the requirement	The requirement is allowing the voter to choose to cast an overvoted ballot and properly tabulating it. The Observation is regarding unsuccessful tabulation, including the problem with the recall
CC4-P3	402	01-Pass	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: <input type="checkbox"/> In a primary election, permits each elector to vote only for a candidate seeking nomination by the political party with which the elector is affiliated.	Software	Pass		

169

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CC4-P3	403	01-Pass	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: <input type="checkbox"/> In a presidential election, permits each elector to vote by a single operation for all presidential electors of a pair of candidates for president and vice president.	Software	Pass		
CC4-P3	404	zz-Not Applicable	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: <input type="checkbox"/> Does not use a device for the piercing of ballots by the elector.	Software	Not Applicable		
CC4-P3	405	01-Pass	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: <input type="checkbox"/> Provides a method for write-in voting.	Software	Pass		
CC4-P3	406	04-Fail	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: <input type="checkbox"/> Counts votes correctly.	Software	Indeterminate	Category 4 - Insufficient description to support the finding and status	As with other test records regarding the same or a similar incident, it is unclear whether the system was properly programmed for this function, capable of meeting the requirement or simply produced erroneous results.
CC4-P3	407	04-Fail	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: <input type="checkbox"/> Can tabulate the total number of votes for each candidate for each office and the total number of votes for and against each ballot question and ballot issue for the polling place.	Software	Indeterminate	Category 4 - Insufficient description to support the finding and status	As with other test records regarding the same or a similar incident, it is unclear whether the system was properly programmed for this function, capable of meeting the requirement or simply produced erroneous results.
CC4-P3	408	01-Pass	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: <input type="checkbox"/> Can tabulate votes from ballots of different political parties at the same polling place in a primary election.	Software	Pass		

170

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CC4-P3	409	04-Fail	TRUE	TRUE	TRUE	Ballot design shall cover the scope of allowable designs for the given system. For example, if a system is capable of producing 11" and 18" ballots, then both ballot styles shall be tested in each of the elections above. If more sizes are available, they shall also be tested. Ballots must be designed and presented with a maximum of four (4) columns and a minimum of one (1) column.	Software	Suspend	Category 1 - Testing to verify compliance could not be completed.	The record reflects that the materials were not provided by the vendor. There is the question of whether Colorado would accept a four column template since the templates are part of the trusted install of the system from the ITA.
CC4-P3	411	04-Fail	TRUE	TRUE	TRUE	Ballots shall include the following minimum race situations to simulate and test "real world" situations in the State of Colorado: Allow for programming to accommodate Colorado recall questions as prescribed in Article 12 of Title 1, C.R.S.;	Software	Indeterminate	Category 4 - Insufficient description to support the finding and status	As with other test records regarding the same or a similar incident, it is unclear whether the system was properly programmed for this function, capable of meeting the requirement or simply produced erroneous results.
CC4-P3	412	01-Pass	TRUE	TRUE	TRUE	Ballots shall include candidates to represent the maximum number of political parties in the State of Colorado, and shall accommodate all qualified political parties and political organizations.	Software	Pass		
CC4-P3	413	04-Fail	TRUE	TRUE	TRUE	Ballots shall include the following minimum race situations to simulate and test "real world" situations in the State of Colorado: A minimum of 20 pairs of "yes" and "no" positions for voting on ballot issues.	Software	Indeterminate	Category 4 - Insufficient description to support the finding and status	The requirement is for 20 yes no contests. The observation is that Boss was unable to create ballots.
CC4-P3	414	04-Fail	TRUE	TRUE	TRUE	Ballots shall include the following minimum race situations to simulate and test "real world" situations in the State of Colorado: In a general election, allow a voter to vote for any candidate for any office, in the number of positions allowed for the office, and to select any measure on the ballot that the candidate is allowed to vote in, regardless of party.	Software	Indeterminate	Category 4 - Insufficient description to support the finding and status	The requirement is to allow voters to cast votes for the number of positions allowed and in contests allowed. The observation a lack of tabulation accuracy

171

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CC4-P3	415	zz-Not Applicable	TRUE	TRUE	TRUE	No nonpunch card electronic voting system shall be purchased, leased, or used unless it fulfills the following requirements: □ If the system uses a voting device: It is suitably designed, of durable construction, and capable of being used safely, efficiently, and accurately in the conduct of elections and the tabulation of votes.	Software	Not Applicable		
CC4-P3	416	04-Fail	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: □ Does not record a vote for any office, ballot question, or ballot issue that is overvoted on a ballot cast by an elector.	Software	Indeterminate	Category 4 - Insufficient description to support the finding and status	As with other test records regarding the same or a similar incident, it is unclear whether the system was properly programmed for this function, capable of meeting the requirement or simply produced erroneous results.
CC4-P3	418	04-Fail	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: Permits each elector to vote for all offices for which the elector is lawfully entitled to vote and no others, to vote for as many candidates for an office as the elector is entitled to vote for, and to vote for or against any ballot question or ballot issue on which the elector is entitled to vote.	Software	Indeterminate	Category 2 - Questionable interpretation of the requirement	The requirement is for the voter to be able to vote the races and number of candidates in each race which he is entitled to. The observation is for errors in vote processing and a failure in overvote protection.
CC4-P3	419	01-Pass	TRUE	TRUE	TRUE	A duplicate stub is not required for a ballot that is prepared for a mail ballot election pursuant to article 7.5 of this title.	Software	Pass		
CC4-P3	420	01-Pass	TRUE	TRUE	TRUE	No ballot stub is required for a ballot produced on demand, so long as the quantity of ballots produced for the election can be reconciled by the ballot processing method used by the voting system. Such ballots may contain printed and distinguishing marks, so long as secrecy in voting is protected.	Software	Pass		
CC4-P3	421	01-Pass	TRUE	TRUE	TRUE	Ballots shall include the following minimum race situations to simulate and test "real world" situations in the State of Colorado: Ability to contain a ballot question or issue of at least 200 words.	Software	Pass		

172

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CC4-P3	422	zz-Not Applicable	TRUE	TRUE	TRUE	No nonpunch card electronic voting system shall be purchased, leased, or used unless it fulfills the following requirements: <input type="checkbox"/> If the system uses a voting device: <input type="checkbox"/> It contains a protective counter with a register which cannot be reset, which shall register the cumulative total number of movements of the operating mechanism.	Software	Not Applicable		
CC4-P3	423	zz-Not Applicable	TRUE	TRUE	TRUE	No nonpunch card electronic voting system shall be purchased, leased, or used unless it fulfills the following requirements: <input type="checkbox"/> It prevents the elector from voting for the same candidates more than once for the same office;	Software	Not Applicable		
CC4-P3	424	04-Fail	TRUE	TRUE	TRUE	No nonpunch card electronic voting system shall be purchased, leased, or used unless it fulfills the following requirements: <input type="checkbox"/> It rejects any vote for an office or on a ballot issue if the number of votes exceeds the number the elector is entitled to cast.	Software	Indeterminate	Category 4	The requirement is for proper tabulation of overvoted ballots the observation is for unsuccessful tabulation in the recall and coordinated election. As with earlier findings the records are unclear whether those issues were caused by human error or were an actual tabulation error in the system. Also, it is unclear whether they directly related to handling of overvoted ballots.
CC4-P3	425	01- Pass	TRUE	TRUE	TRUE	No nonpunch card electronic voting system shall be purchased, leased, or used unless it fulfills the following requirements: <input type="checkbox"/> It permits each elector, other than at a primary election, to vote for the candidates of one or more parties and for unaffiliated candidates.	Software	Pass		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CC4-P3	426	01-Pass	TRUE	TRUE	TRUE	The ballot definition subsystem of the voting system consists of hardware and software required to accomplish the functions outlined in this section 45.5.2.3. System databases contained in the Ballot Definition Subsystem may be constructed individually or they may be integrated into one database. These databases are treated as separate databases to identify the necessary types of data that shall be handled and to specify, where appropriate, those attributes that can be measured or assessed for determining compliance with the requirements of this standard.	Software	Pass		
CC4-P3	428	zz-Not Applicable	TRUE	TRUE	TRUE	No nonpunch card electronic voting system shall be purchased, leased, or used unless it fulfills the following requirements: <input type="checkbox"/> It provides for voting in secrecy.	Software	Not Applicable		
CC4-P3	429	01-Pass	TRUE	TRUE	TRUE	The text of all ballot issues that are subject to Article X, Section 20 shall be printed in all capital letters. The names of all candidates and all other ballot issues and questions shall be printed in upper and lower case.	Software	Pass		
CC4-P3	430	04-Fail	TRUE	TRUE	TRUE	If there is no candidate on the ballot for any particular office, the ballot shall read, "No candidate for this office."	Software	Indeterminate	Category 4 - Insufficient description to support the finding and status	It is unclear whether the inability to demonstrate this function was an omission during the election definition process or whether the system was unable to meet the requirement

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CC4-P3	431	01-Pass	TRUE	TRUE	TRUE	The Voting system shall provide for appropriately authorized operators to setup and prepare ballots for an election.□ The names of the candidates for each office shall be arranged under the designation of the office as provided in section 1-5-404. The designated election official shall not print, in connection with any name, any title or degree designating the business or profession of the candidate.□ Whenever candidates are to be voted for only by the eligible electors of a particular district, county, or other political subdivision, the names of those candidates shall not be printed on any ballots other than those provided for use in the district, county, or political subdivision in which those candidates are to be voted on.□ No printing or distinguishing marks shall be on the ballot except as specifically provided in this code.	Software	Pass		
CC4-P3	432	01-Pass	TRUE	TRUE	TRUE	The Voting system shall provide for appropriately authorized operators to setup and prepare ballots for an election. If a referred measure, including but not limited to a measure referred by the school board of a multicounty school district or the board of directors of a multicounty special district to the registered electors of the school district or special district, is referred to registered electors of multiple counties, the alphabetical, numerical, or alphanumerical designation used to identify the measure shall be identical on each ballot that includes the measure.	Software	Pass		
CC4-P3	433	01-Pass	TRUE	TRUE	TRUE	The Voting system shall provide for appropriately authorized operators to setup and prepare ballots for an election. The designated election official shall not print, in connection with any name, any title or degree designating the business or profession of the candidate.	Software	Pass		

175

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CC4-P3	434	01-Pass	TRUE	TRUE	TRUE	Single cross mark for party slate not permitted. Each office in every election shall be voted upon separately, and no emblem, device, or political party designation shall be used on the official ballot at any election by which an eligible elector may vote for more than one office by placing a single cross mark on the ballot or by writing in the name of any political party or political organization.	Software	Pass		
CC4-P3	435	zz-Not Applicable	TRUE	TRUE	TRUE	No nonpunch card electronic voting system shall be purchased, leased, or used unless it fulfills the following requirements: □ If the system uses a voting device: □ It permits the names of candidates and the text of issues to be printed on pages which are securely attached to the voting device, the pages to be securely locked in a metal frame or sealed to prevent tampering.	Software	Not Applicable		
CC4-P3	436	01-Pass	TRUE	TRUE	TRUE	The voting system shall contain a control subsystem that consists of the physical devices and software that accomplish and validate the following operations: □ Error Detection – the voting system shall contain a detailed list and description of the error messages that will appear on the voting devices, the controller (if any), the paper ballot printer, programmer, or any other device used in the voting process to indicate that a component has failed or is malfunctioning.	Software	Pass		
CC4-P3	437	04-Fail	TRUE	TRUE	TRUE	No nonpunch card electronic voting system shall be purchased, leased, or used unless it fulfills the following requirements It permits each elector to write in the names of eligible candidates not appearing on the printed ballot, to vote for as many candidates for an office as there are vacancies for which the elector is entitled to vote, and to vote for or against any ballot issue upon which the elector is entitled to vote.	Software	Fail		

176

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CC4-P3	438	04-Fail	TRUE	TRUE	TRUE	No nonpunch card electronic voting system shall be purchased, leased, or used unless it fulfills the following requirements: <input type="checkbox"/> If the system uses a voting device: <input type="checkbox"/> It is capable of providing printouts of vote totals by office and candidate or by ballot issue, including a numeric-only printout to be used for testing as provided in section 1-7-509.	Software	Fail		
CD1-P3	101	04-Fail	TRUE	TRUE	TRUE	All electrical voting devices provided by the voting system provider shall have the capability to continue operations and provide continuous device availability during a period of electrical outage without any loss of election data. for DRE devices, this capability shall include at a minimum for a period of not less than 3 hours the ability to: store voters' choices accurately in all storage locations on the device.	DRE	Fail		
CD1-P3	102	04-Fail	TRUE	TRUE	TRUE	All electrical voting devices provided by the voting system provider shall have the capability to continue operations and provide continuous device availability during a period of electrical outage without any loss of election data. for DRE devices, this capability shall include at a minimum for a period of not less than 3 hours the ability to: continue to present ballot accurately to voters;	DRE	Fail		
CD1-P3	103	01-Pass	TRUE	TRUE	TRUE	The voting system shall meet the following minimum requirements for casting ballots. Speed requirements are based on a printed double sided complete 18" ballot with a minimum of 20 contests: DRE / Touch Screen = 20 ballots per hour.	DRE	Pass		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CD1-P3	104	04-Fail	TRUE	TRUE	TRUE	All electrical voting devices provided by the voting system provider shall have the capability to continue operations and provide continuous device availability during a period of electrical outage without any loss of election data. for DRE devices, this capability shall include at a minimum for a period of not less than 3 hours the ability to: tabulate voters' choices accurately;	DRE	Fail		
CD1-P3	106	zz - Not Applicable	TRUE	TRUE	TRUE	All electrical voting devices provided by the voting system provider shall have the capability to continue operations and provide continuous device availability during a period of electrical outage without any loss of election data. for DRE devices, this capability shall include at a minimum for a period of not less than 3 hours the ability to: transmit required results files accurately if power failure experienced during transmittal of results.	DRE	Not Applicable		
CD1-P3	107	04-Fail	TRUE	TRUE	TRUE	All electrical voting devices provided by the voting system provider shall have the capability to continue operations and provide continuous device availability during a period of electrical outage without any loss of election data. For V-VPAT devices connected to DREs, this capability shall include at a minimum for a period of not less than 3 hours the ability to: continue to print voters' choices on the DRE accurately and in a manner that is identical to the manner of the printers' operations during a period of normal electrical operations.	DRE	Fail		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CD1-P3	108	04-Fail	TRUE	TRUE	TRUE	All electrical voting devices provided by the voting system provider shall have the capability to continue operations and provide continuous device availability during a period of electrical outage without any loss of election data. For V-VPAT devices connected to DREs, this capability shall include at a minimum for a period of not less than 3 hours the ability to: continue to store the printed ballots in a secure manner that is identical to the manner of the printers' operations during a period of normal electrical operations.	DRE	Fail		
CD1-P3	109	04-Fail	TRUE	TRUE	TRUE	All electrical voting devices provided by the voting system provider shall have the capability to continue operations and provide continuous device availability during a period of electrical outage without any loss of election data. for DRE devices, this capability shall include at a minimum for a period of not less than 3 hours the ability to: accept voters' choices accurately on the devices;	DRE	Fail		
CD2-P3	201	01-Pass	TRUE	TRUE	TRUE	The voting system shall meet the following minimum requirements for casting ballots. Speed requirements are based on a printed double sided complete 18" ballot with a minimum of 20 contests: <input type="checkbox"/> Optical Scan Ballots at voting location(s) = 100 ballots per hour.	PCOS	Pass		
CD2-P3	202	04-Fail	TRUE	TRUE	TRUE	All electrical voting devices provided by the voting system provider shall have the capability to continue operations and provide continuous device availability during a period of electrical outage without any loss of election data. For optical scan devices, this capability shall include at a minimum for a period of not less than three hours the ability to: transmit required results files accurately if power failure experienced during transmittal of results.	PCOS	Fail		

179

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CD2-P3	203	04-Fail	TRUE	TRUE	TRUE	All electrical voting devices provided by the voting system provider shall have the capability to continue operations and provide continuous device availability during a period of electrical outage without any loss of election data. For optical scan devices, this capability shall include at a minimum for a period of not less than three hours the ability to: Store accurately a voters' ballot choices during a period of electrical outage.	PCOS	Fail		
CD2-P3	204	04-Fail	TRUE	TRUE	TRUE	All electrical voting devices provided by the voting system provider shall have the capability to continue operations and provide continuous device availability during a period of electrical outage without any loss of election data. For optical scan devices, this capability shall include at a minimum for a period of not less than three hours the ability to: tabulate accurately voters' choices from the ballots,	PCOS	Fail		
CD2-P3	205	04-Fail	TRUE	TRUE	TRUE	All electrical voting devices provided by the voting system provider shall have the capability to continue operations and provide continuous device availability during a period of electrical outage without any loss of election data. For optical scan devices, this capability shall include at a minimum for a period of not less than three hours the ability to: Continue to scan or image voters' ballots;	PCOS	Fail		
CD3-P3	301	01-Pass	TRUE	TRUE	TRUE	The voting system shall meet the following minimum requirements for casting ballots. Speed requirements are based on a printed double sided complete 18" ballot with a minimum of 20 contests: Central Count Optical Scan Ballots = 100 ballots per hour.	CCOS	Pass		

180

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CD3-P3	302	04-Fail	TRUE	TRUE	TRUE	All electrical voting devices provided by the voting system provider shall have the capability to continue operations and provide continuous device availability during a period of electrical outage without any loss of election data. For optical scan devices, this capability shall include at a minimum for a period of not less than three hours the ability to: transmit required results files accurately if power failure experienced during transmittal of results.	CCOS	Indeterminate	Category 2 - Questionable interpretation of the requirement	Is a Central Count OS device a "Voting Device"? Is this requirement applicable to central count OS devices?
CD3-P3	303	04-Fail	TRUE	TRUE	TRUE	All electrical voting devices provided by the voting system provider shall have the capability to continue operations and provide continuous device availability during a period of electrical outage without any loss of election data. For optical scan devices, this capability shall include at a minimum for a period of not less than three hours the ability to: Store accurately a voters' ballot choices during a period of electrical outage.	CCOS	Indeterminate	Category 2 - Questionable interpretation of the requirement	Is a Central Count OS device a "Voting Device"? Is this requirement applicable to central count OS devices?
CD3-P3	304	04-Fail	TRUE	TRUE	TRUE	All electrical voting devices provided by the voting system provider shall have the capability to continue operations and provide continuous device availability during a period of electrical outage without any loss of election data. For optical scan devices, this capability shall include at a minimum for a period of not less than three hours the ability to: tabulate accurately voters' choices from the ballots.	CCOS	Indeterminate	Category 2 - Questionable interpretation of the requirement	Is a Central Count OS device a "Voting Device"? Is this requirement applicable to central count OS devices?
CD3-P3	305	04-Fail	TRUE	TRUE	TRUE	All electrical voting devices provided by the voting system provider shall have the capability to continue operations and provide continuous device availability during a period of electrical outage without any loss of election data. For optical scan devices, this capability shall include at a minimum for a period of not less than three hours the ability to: Continue to scan or image voters' ballots;	CCOS	Indeterminate	Category 2 - Questionable interpretation of the requirement	Is a Central Count OS device a "Voting Device"? Is this requirement applicable to central count OS devices?

181

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CD4-P3	401	04-Fail	TRUE	TRUE	TRUE	The voting system provider's software application shall be able to recover operations after a power outage or other abnormal shutdown of the system on which that application and database are operating without loss of more than the current transaction data record on which the administrative account or authorized operator account is currently working.	Software	Fail		
CD4-P3	402	01-Pass	TRUE	TRUE	TRUE	At no time shall third party hardware or software negatively impact performance levels of voting system application, unless a voting system provider specifically details through documentation the specific hardware or software, the performance impact, and a workaround for the end user to overcome the issue.	Software	Pass		
CD4-P3	403	04-Fail	TRUE	TRUE	TRUE	For the purposes of evaluating software, the voting system provider shall be required to provide detailed information as to the type of hardware required to execute the software. The performance level shall be such that an evaluator of the software would have pauses equal to less than 5 seconds in the system during the ballot design and creation, along with the downloading and uploading of election media devices. The application software upon creation of the layout of races on ballots shall view the ballot image (on screen) for the evaluator in less than 30 seconds per ballot image.	Software	Fail		

182

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CD4-P3	404	01-Pass	TRUE	TRUE	TRUE	For the purposes of evaluating software, the voting system provider shall be required to provide detailed information as to the type of hardware required to execute the software. The performance level shall be such that an evaluator of the software would have pauses equal to less than 5 seconds in the system during the ballot design and creation, along with the downloading and uploading of election media devices. Specifically, the following minimum standards are required: Election Media Upload is less than 20 seconds per media.	Software	Pass		
CD4-P3	405	01-Pass	TRUE	TRUE	TRUE	For the purposes of evaluating software, the voting system provider shall be required to provide detailed information as to the type of hardware required to execute the software. The performance level shall be such that an evaluator of the software would have pauses equal to less than 5 seconds in the system during the ballot design and creation, along with the downloading and uploading of election media devices. Specifically, the following minimum standards are required: Election Media Download is less than 35 seconds per media.	Software	Pass		
CD4-P3	406	01-Pass	TRUE	TRUE	TRUE	For the purposes of evaluating software, the voting system provider shall be required to provide detailed information as to the type of hardware required to execute the software. The performance level shall be such that an evaluator of the software would have pauses equal to less than 5 seconds in the system during the ballot design and creation, along with the downloading and uploading of election media devices. Specifically, the following minimum standards are required: Ballot style assignment is less than 10 seconds per ballot style.	Software	Pass		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CE1-P3	101	zz - Not Applicable	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: <input type="checkbox"/> If the elector overvotes it notifies the elector before the vote is cast that an overvote for any office, ballot question, or ballot issue will not be counted.	DRE	Not Applicable		
CE1-P3	102	zz - Not Applicable	TRUE	TRUE	TRUE	No nonpunch card electronic voting system shall be purchased, leased, or used unless it fulfills the following requirements: <input type="checkbox"/> It rejects any vote for an office or on a ballot issue if the number of votes exceeds the number the elector is entitled to cast.	DRE	Not Applicable		
CE1-P3	103	01-Pass	TRUE	TRUE	TRUE	No nonpunch card electronic voting system shall be purchased, leased, or used unless it fulfills the following requirements: <input type="checkbox"/> It permits each elector, other than at a primary election, to vote for the candidates of one or more parties and for unaffiliated candidates.	DRE	Pass		
CE1-P3	104	01-Pass	TRUE	TRUE	TRUE	No nonpunch card electronic voting system shall be purchased, leased, or used unless it fulfills the following requirements: <input type="checkbox"/> It prevents the elector from voting for the same candidates more than once for the same office;	DRE	Pass		
CE1-P3	105	01-Pass	TRUE	TRUE	TRUE	No nonpunch card electronic voting system shall be purchased, leased, or used unless it fulfills the following requirements: <input type="checkbox"/> If the system uses a voting device: It is suitably designed, of durable construction, and capable of being used safely, efficiently, and accurately in the conduct of elections and the tabulation of votes.	DRE	Pass		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CE1-P3	106	zz - Not Applicable	TRUE	TRUE	TRUE	No nonpunch card electronic voting system shall be purchased, leased, or used unless it fulfills the following requirements: <input type="checkbox"/> If the system uses a voting device: <input type="checkbox"/> It permits the names of candidates and the text of issues to be printed on pages which are securely attached to the voting device, the pages to be securely locked in a metal frame or sealed to prevent tampering.	DRE	Not Applicable		
CE1-P3	107	01-Pass	TRUE	TRUE	TRUE	No nonpunch card electronic voting system shall be purchased, leased, or used unless it fulfills the following requirements: <input type="checkbox"/> If the system uses a voting device: <input type="checkbox"/> It contains a protective counter with a register which cannot be reset, which shall register the cumulative total number of movements of the operating mechanism.	DRE	Pass		
CE1-P3	108	04-Fail	TRUE	TRUE	TRUE	No nonpunch card electronic voting system shall be purchased, leased, or used unless it fulfills the following requirements: <input type="checkbox"/> If the system uses a voting device: <input type="checkbox"/> It is capable of providing printouts of vote totals by office and candidate or by ballot issue, including a numeric-only printout to be used for testing as provided in section 1-7-509.	DRE	Fail		
CE1-P3	109	01-Pass	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: Permits each elector to vote for all offices for which the elector is lawfully entitled to vote and no others, to vote for as many candidates for an office as the elector is entitled to vote for, and to vote for or against any ballot question or ballot issue on which the elector is entitled to vote.	DRE	Pass		

185

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CE1-P3	110	01-Pass	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: Permits each elector to verify his or her votes privately and independently before the ballot is cast.	DRE	Pass		
CE1-P3	111	01-Pass	TRUE	TRUE	TRUE	No nonpunch card electronic voting system shall be purchased, leased, or used unless it fulfills the following requirements It permits each elector to write in the names of eligible candidates not appearing on the printed ballot, to vote for as many candidates for an office as there are vacancies for which the elector is entitled to vote, and to vote for or against any ballot issue upon which the elector is entitled to vote.	DRE	Pass		
CE1-P3	112	01-Pass	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: <input type="checkbox"/> If the elector overvotes it notifies the elector before the ballot is cast that the elector has overvoted.	DRE	Not Applicable	Category 2 - Questionable interpretation of the requirement	Would this requirement be Non Applicable to DRE's as were the requirements in test records CE1-PC-101 and 102?
CE1-P3	113	01-Pass	TRUE	TRUE	TRUE	The voting system shall provide capabilities to enforce confidentiality of voters' ballot choices. <input type="checkbox"/> All DRE devices shall provide randomization of all voter choices and stored, electronic ballot information, regardless of format, to prevent disclosure of voters' confidential ballot choices during and after storage of the voters' ballot selections.	DRE	Pass		
CE1-P3	114	01-Pass	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: <input type="checkbox"/> If the elector overvotes it gives the elector the opportunity to correct the ballot before the ballot is cast.	DRE	Not Applicable	Category 2 - Questionable interpretation of the requirement	Would this requirement be Non Applicable to DRE's as were the requirements in test records CE1-PC-101 and 102?

186

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CE1-P3	115	01-Pass	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: <input type="checkbox"/> Does not record a vote for any office, ballot question, or ballot issue that is overvoted on a ballot cast by an elector.	DRE	Not Applicable	Category 2 - Questionable interpretation of the requirement	Would this requirement be Non Applicable to DRE's as were the requirements in test records CE1-PC-101 and 102?
CE1-P3	116	01-Pass	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: <input type="checkbox"/> For electronic and electromechanical voting systems using ballot cards, accepts an overvoted or undervoted ballot if the elector chooses to cast the ballot, but it does not record a vote for any office, ballot question, or ballot issue that has been overvoted.	DRE	Not Applicable	Category 2 - Questionable interpretation of the requirement	Would this requirement be Non Applicable to DRE's as were the requirements in test records CE1-PC-101 and 102?
CE1-P3	117	01-Pass	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: <input type="checkbox"/> Counts votes correctly.	DRE	Pass		
CE1-P3	118	01-Pass	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: <input type="checkbox"/> Can tabulate the total number of votes for each candidate for each office and the total number of votes for and against each ballot question and ballot issue for the polling place.	DRE	Pass		
CE1-P3	119	01-Pass	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: <input type="checkbox"/> Can tabulate votes from ballots of different political parties at the same polling place in a primary election.	DRE	Pass		
CE1-P3	120	01-Pass	TRUE	TRUE	TRUE	The voting system shall provide a means for a voter to change the voter's selection prior to the voter casting the ballot.	DRE	Pass		

187

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CE1-P3	121	01-Pass	TRUE	TRUE	TRUE	Voters voting on DRE devices shall be able to navigate through the screens without the use of page scrolling. Features such as next or previous page options shall be used.	DRE	Pass		
CE1-P3	122	04-Fail	TRUE	TRUE	TRUE	All DRE voting devices shall use touch screen technology or other technology providing visual ballot display and selection. The voting system provider shall include documentation concerning the use of touch screen or other display and selection technology, including but not limited to: <input type="checkbox"/> Technical documentation describing the nature and sensitivity of any other technology used to display and select offices, candidates, or issues;	DRE	Fail		
CE1-P3	123	01-Pass	TRUE	TRUE	TRUE	The voting system shall contain a control subsystem that consists of the physical devices and software that accomplish and validate the following operations: <input type="checkbox"/> Error Detection – the voting system shall contain a detailed list and description of the error messages that will appear on the voting devices, the controller (if any), the paper ballot printer, programmer, or any other device used in the voting process to indicate that a component has failed or is malfunctioning.	DRE	Pass		
CE1-P3	124	01-Pass	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: Permits each elector privately and independently to change the ballot or correct any error before the ballot is cast, including by voting a replacement ballot if the elector is otherwise unable to change the ballot or correct an error.	DRE	Pass		
CF1-P3	101	04-Fail	TRUE	TRUE	TRUE	The voting system shall track and maintain audit information of the following voting system application events: <input type="checkbox"/> Hardware events – add hardware, remove hardware, initialize hardware and change hardware properties.	DRE	Fail		

188

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CF1-P3	102	04-Fail	TRUE	TRUE	TRUE	The voting system shall track and maintain audit information of the following voting system application events: <input type="checkbox"/> Election events – setup, set for election, unset for election, open polls, close polls, end election, upload devices, download devices, create ballots, create precincts, create districts, create poll places (or Vote Centers), initialize devices, backup devices, and voting activity.	DRE	Indeterminate	Category 4 - Insufficient description to support the finding and status	The record does not describe which required items are missing from the log.
CF1-P3	103	04-Fail	TRUE	TRUE	TRUE	The voting system shall track and maintain audit information of the following voting system application events: Printing activity (where applicable).	DRE	Fail		
CF1-P3	104	01-Pass	TRUE	TRUE	TRUE	The voting system shall track and maintain audit information of the following voting system application events: <input type="checkbox"/> Application start and stop.	DRE	Pass		
CF1-P3	105	04-Fail	TRUE	TRUE	TRUE	The voting system shall track and maintain audit information of the following voting system application events: <input type="checkbox"/> Log on and log off activity.	DRE	Fail		
CF1-P3	106	04-Fail	TRUE	TRUE	TRUE	The voting system shall be capable of producing electronic and printed audit logs of system operation and system operators actions which shall be sufficient to allow all operations and input commands to be audited.	DRE	Indeterminate	Category 4 - Insufficient description to support the finding and status	The record does not describe which required information is missing. Is it relying on the findings of tests?
CF1-P3	107	04-Fail	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: Saves and produces the records necessary to audit the operation of the electronic or electromechanical voting system, including a permanent paper record with a manual audit capacity.	DRE	Indeterminate	Category 4 - Insufficient description to support the finding and status	What specific information is missing?
CF2-P3	201	01-Pass	TRUE	TRUE	TRUE	The voting system shall track and maintain audit information of the following voting system application events: Printing activity (where applicable).	PCOS	Pass		

189

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CF2-P3	202	04-Fail	TRUE	TRUE	TRUE	The voting system shall track and maintain audit information of the following voting system application events: <input type="checkbox"/> Hardware events – add hardware, remove hardware, initialize hardware and change hardware properties.	PCOS	Fail		
CF2-P3	203	04-Fail	TRUE	TRUE	TRUE	The voting system shall track and maintain audit information of the following voting system application events: <input type="checkbox"/> Election events – setup, set for election, unset for election, open polls, close polls, end election, upload devices, download devices, create ballots, create precincts, create districts, create poll places (or Vote Centers), initialize devices, backup devices, and voting activity.	PCOS	Fail		
CF2-P3	204	04-Fail	TRUE	TRUE	TRUE	The voting system shall track and maintain audit information of the following voting system application events: <input type="checkbox"/> Application start and stop.	PCOS	Fail		
CF2-P3	205	04-Fail	TRUE	TRUE	TRUE	The voting system shall track and maintain audit information of the following voting system application events: <input type="checkbox"/> Log on and log off activity.	PCOS	Fail		
CF2-P3	206	04-Fail	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: Saves and produces the records necessary to audit the operation of the electronic or electromechanical voting system, including a permanent paper record with a manual audit capacity.	PCOS	Indeterminate	Category 4 - Insufficient description to support the finding and status	What specific information is missing from the permanent paper record?
CF2-P3	207	04-Fail	TRUE	TRUE	TRUE	The voting system shall be capable of producing electronic and printed audit logs of system operation and system operators actions which shall be sufficient to allow all operations and input commands to be audited.	PCOS	Indeterminate	Category 4 - Insufficient description to support the finding and status	What specific information is missing?

190

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CF3-P3	301	04-Fail	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: Saves and produces the records necessary to audit the operation of the electronic or electromechanical voting system, including a permanent paper record with a manual audit capacity.	CCOS	Indeterminate	Category 4 - Insufficient description to support the finding and status	What specific information is missing?
CF3-P3	302	04-Fail	TRUE	TRUE	TRUE	The voting system shall track and maintain audit information of the following voting system application events: <input type="checkbox"/> Election events – setup, set for election, unset for election, open polls, close polls, end election, upload devices, download devices, create ballots, create precincts, create districts, create poll places (or Vote Centers), initialize devices, backup devices, and voting activity.	CCOS	Fail		
CF3-P3	303	04-Fail	TRUE	TRUE	TRUE	The voting system shall track and maintain audit information of the following voting system application events: Printing activity (where applicable).	CCOS	Fail		
CF3-P3	304	04-Fail	TRUE	TRUE	TRUE	The voting system shall track and maintain audit information of the following voting system application events: <input type="checkbox"/> Application start and stop.	CCOS	Fail		
CF3-P3	305	04-Fail	TRUE	TRUE	TRUE	The voting system shall be capable of producing electronic and printed audit logs of system operation and system operators actions which shall be sufficient to allow all operations and input commands to be audited.	CCOS	Indeterminate	Category 4 - Insufficient description to support the finding and status	What specific information is missing?
CF3-P3	306	01-Pass	TRUE	TRUE	TRUE	The voting system shall track and maintain audit information of the following voting system application events: <input type="checkbox"/> Hardware events – add hardware, remove hardware, initialize hardware and change hardware properties.	CCOS	Pass		
CF3-P3	307	01-Pass	TRUE	TRUE	TRUE	The voting system shall track and maintain audit information of the following voting system application events: <input type="checkbox"/> Log on and log off activity.	CCOS	Pass		

191

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CF4-P3	401	04-Fail	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: Saves and produces the records necessary to audit the operation of the electronic or electromechanical voting system, including a permanent paper record with a manual audit capacity.	Software	Indeterminate	Category 4 - Insufficient description to support the finding and status	What specific information is missing from the permanent paper record?
CF4-P3	402	04-Fail	TRUE	TRUE	TRUE	All transaction audit records of the database shall be maintained in a file outside or separate from the database which is not accessible by standard user/operator accounts.	Software	Fail		
CF4-P3	403	04-Fail	TRUE	TRUE	TRUE	The voting system shall track and maintain audit information of the following voting system application events: <input type="checkbox"/> Hardware events – add hardware, remove hardware, initialize hardware and change hardware properties.	Software	Fail		
CF4-P3	404	04-Fail	TRUE	TRUE	TRUE	The voting system shall track and maintain audit information of the following voting system application events: <input type="checkbox"/> Election events – setup, set for election, unset for election, open polls, close polls, end election, upload devices, download devices, create ballots, create precincts, create districts, create poll places (or Vote Centers), initialize devices, backup devices, and voting activity.	Software	Indeterminate	Category 4 - Insufficient description to support the finding and status	What specific information is missing?
CF4-P3	405	04-Fail	TRUE	TRUE	TRUE	The voting system shall track and maintain audit information of the following voting system application events: Printing activity (where applicable).	Software	Fail		
CF4-P3	406	04-Fail	TRUE	TRUE	TRUE	The voting system shall track and maintain audit information of the following voting system application events: <input type="checkbox"/> Application start and stop.	Software	Fail		
CF4-P3	407	04-Fail	TRUE	TRUE	TRUE	The voting system shall track and maintain audit information of the following voting system application events: <input type="checkbox"/> Log on and log off activity.	Software	Fail		

192

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CF4-P3	408	04-Fail	TRUE	TRUE	TRUE	The voting system shall be capable of producing electronic and printed audit logs of system operation and system operators actions which shall be sufficient to allow all operations and input commands to be audited.	Software	Indeterminate	Category 4 - Insufficient description to support the finding and status	What specific information is missing?
CG1-P3	101	01-Pass	TRUE	TRUE	TRUE	The official abstract shall include, by precinct/ballot style or vote center, where applicable The statement of votes counted by race and ballot question or issue;	DRE	Pass	Category 2 - Questionable interpretation of the requirement	While the device met the particular requirement are the Official Abstract requirements applicable to Precinct Equipment?
CG1-P3	102	01-Pass	TRUE	TRUE	TRUE	The voting system shall provide for the tabulation of votes cast in combined precincts at remote sites, where more than one precinct is voting at the same location, on either the same ballot style or a different ballot style.	DRE	Indeterminate	Category 4 - Insufficient description to support the finding and status	The requirement is for combined totals when more than one precinct is in a location. The observation is for two different ballot styles in a split precinct and indicates that the totals for each split were not combined.
CG1-P3	103	01-Pass	TRUE	TRUE	TRUE	The voting system shall provide for the tabulation of votes cast in split precincts where all voters residing in one precinct are not voting the same ballot style.	DRE	Pass		
CG1-P3	104	04-Fail	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: <input type="checkbox"/> Can automatically produce vote totals for the polling place in printed form.	DRE	Indeterminate	Category 2 - Questionable interpretation of the requirement	Does Automatic require that reports be created without operator action other than closing the polls?
CG1-P3	105	04-Fail	TRUE	TRUE	TRUE	If the total number of votes cast and counted in any precinct by early voters' and absentee ballot is less than ten, the returns for all such precincts in the political subdivision shall be reported together.	DRE	Fail		
CG1-P3	106	zz-Not Applicable	TRUE	TRUE	TRUE	The voting system shall accurately integrate election day voting results with absentee, early voting as well as provisional ballot results.	DRE	Not Applicable		
CG1-P3	107	04-Fail	TRUE	TRUE	TRUE	The official abstract shall include, by precinct/ballot style or vote center, where applicable The total active registered electors in the precinct and the total for the jurisdiction holding the election;	DRE	Indeterminate	Category 2 - Questionable interpretation of the requirement	While the device did not meet the particular requirement are the Official Abstract requirements applicable to Precinct Equipment?

193

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CG1-P3	108	04-Fail	TRUE	TRUE	TRUE	The official abstract shall include, by precinct/ballot style or vote center, where applicable The total number of electors voting in each precinct, and the total for the jurisdiction holding the election;	DRE	Indeterminate	Category 2 - Questionable interpretation of the requirement	Are the Official Abstract requirements applicable to Precinct Equipment? How could a precinct device reasonably obtain the total number of electors in the whole jurisdiction?
CG1-P3	109	04-Fail	TRUE	TRUE	TRUE	The official abstract shall include, by precinct/ballot style or vote center, where applicable The number of voters who voted early;	DRE	Indeterminate	Category 2 - Questionable interpretation of the requirement	Are the Official Abstract requirements applicable to Precinct Equipment? How could a precinct device reasonably obtain the total number of electors who voted early?
CG1-P3	110	zz-Not Applicable	TRUE	TRUE	TRUE	The official abstract shall include, by precinct/ballot style or vote center, where applicable The number of emergency registrations;	DRE	Not Applicable		
CG1-P3	111	zz-Not Applicable	TRUE	TRUE	TRUE	The official abstract shall include, by precinct/ballot style or vote center, where applicable The number of absentee or mail ballots counted and the number rejected;	DRE	Not Applicable		
CG1-P3	112	04-Fail	TRUE	TRUE	TRUE	The official abstract shall include, by precinct/ballot style or vote center, where applicable The number of provisional ballots counted and the number rejected listed by each rejection code pursuant to Rule 26.5.4 .	DRE	Indeterminate	Categories 1 and 2 Testing to verify compliance could not be completed and Questionable interpretation of the requirement	The Observation states that the testing was not conducted at vendor's request. Are the Official Abstract requirements applicable to Precinct Equipment? That said, is it reasonable to expect a precinct device to provide statistics on resolution of provisional's?
CG1-P3	113	zz_Not Applicable	TRUE	TRUE	TRUE	Beginning with the 2008 general election, and for all elections thereafter, the returns certified by the judges and the abstract of votes cast certified by the canvass board shall indicate the number of votes cast by early voters' or absentee ballot in each precinct for each candidate and for and against each ballot issue and ballot question and the number of ballots rejected, except as otherwise provided in paragraph (b) of this subsection (3).	DRE	Not Applicable		

194

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CG2-P3	201	zz-Not Applicable	TRUE	TRUE	TRUE	Beginning with the 2008 general election, and for all elections thereafter, the returns certified by the judges and the abstract of votes cast certified by the canvass board shall indicate the number of votes cast by early voters' or absentee ballot in each precinct for each candidate and for and against each ballot issue and ballot question and the number of ballots rejected, except as otherwise provided in paragraph (b) of this subsection (3).	PCOS	Not Applicable		
CG2-P3	202	zz-Not Applicable	TRUE	TRUE	TRUE	The official abstract shall include, by precinct/ballot style or vote center, where applicable The number of absentee or mail ballots counted and the number rejected;	PCOS	Not Applicable		
CG2-P3	203	01-Pass	TRUE	TRUE	TRUE	The voting system shall provide for the tabulation of votes cast in combined precincts at remote sites, where more than one precinct is voting at the same location, on either the same ballot style or a different ballot style.	PCOS	Indeterminate	Category 4 - Insufficient description to support the finding and status	Same as the referenced test DB2-P3-102. The requirement is for combined totals when more than one precinct is in a location. The observation is for two different ballot styles in a split precinct and indicates that the totals for each split were not combined.
CG2-P3	204	04-Fail	TRUE	TRUE	TRUE	If the total number of votes cast and counted in any precinct by early voters' and absentee ballot is less than ten, the returns for all such precincts in the political subdivision shall be reported together.	PCOS	Fail		
CG2-P3	205	04-Fail	TRUE	TRUE	TRUE	The official abstract shall include, by precinct/ballot style or vote center, where applicable The total active registered electors in the precinct and the total for the jurisdiction holding the election;	PCOS	Indeterminate	Category 2 - Questionable interpretation of the requirement	While the device did not meet the particular requirement are the Official Abstract requirements applicable to Precinct Equipment?
CG2-P3	206	01-Pass	TRUE	TRUE	TRUE	The official abstract shall include, by precinct/ballot style or vote center, where applicable The statement of votes counted by race and ballot question or issue;	PCOS	Pass	Category 2 - Questionable interpretation of the requirement	While the device met the particular requirement are the Official Abstract requirements applicable to Precinct Equipment?
CG2-P3	207	zz-Not Applicable	TRUE	TRUE	TRUE	The official abstract shall include, by precinct/ballot style or vote center, where applicable The number of emergency registrations;	PCOS	Not Applicable		

195

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CG2-P3	208	04-Fail	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: <input type="checkbox"/> Can automatically produce vote totals for the polling place in printed form.	PCOS	Indeterminate	Category 2 - Questionable interpretation of the requirement	Does Automatic require that reports be created without operator action other than closing the polls?
CG2-P3	209	01-Pass	TRUE	TRUE	TRUE	The voting system shall provide for the tabulation of votes cast in split precincts where all voters residing in one precinct are not voting the same ballot style.	PCOS	Pass		
CG2-P3	210	04-Fail	TRUE	TRUE	TRUE	The official abstract shall include, by precinct/ballot style or vote center, where applicable The total number of electors voting in each precinct, and the total for the jurisdiction holding the election;	PCOS	Indeterminate	Category 2 - Questionable interpretation of the requirement	Are the Official Abstract requirements applicable to Precinct Equipment? How could a precinct device reasonably obtain the total number of electors in the whole jurisdiction?
CG2-P3	211	04-Fail	TRUE	TRUE	TRUE	The official abstract shall include, by precinct/ballot style or vote center, where applicable The number of provisional ballots counted and the number rejected listed by each rejection code pursuant to Rule 26.5.4 .	PCOS	Indeterminate	Categories 1 and 2 Testing to verify compliance could not be completed and Questionable interpretation of the requirement	Are the Official Abstract requirements applicable to Precinct Equipment? That said, is it required that precinct devices resolve provisional ballots?
CG2-P3	212	04-Fail	TRUE	TRUE	TRUE	The voting system shall accurately integrate election day voting results with absentee, early voting as well as provisional ballot results.	PCOS	Not Applicable	Category 2 - Questionable interpretation of the requirement	The e-Scan device would not be used to integrate results from outside the site where it was used.
CG2-P3	213	04-Fail	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: <input type="checkbox"/> Can tabulate the total number of votes for each candidate for each office and the total number of votes for and against each ballot question and ballot issue for the polling place.	PCOS	Indeterminate	Category 4 - Insufficient description to support the finding and status	As with other test records regarding the same or a similar incident, it is unclear whether the system was properly programmed for this function, capable of meeting the requirement or simply produced erroneous results.

196

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CG2-P3	214	01-Pass	TRUE	TRUE	TRUE	The official abstract shall include, by precinct/ballot style or vote center, where applicable The number of voters who voted early;	PCOS	Indeterminate	Category 2 and 4 - Questionable interpretation of the requirement and Insufficient description to support the finding and status	Are the Official Abstract requirements applicable to Precinct Equipment? Then while the requirement is for inclusion of the number of early voters, the observation is that the name of the voting location was included.
CG3-P3	301	04-Fail	TRUE	TRUE	TRUE	The official abstract shall include, by precinct/ballot style or vote center, where applicable The number of voters who voted early;	CCOS	Indeterminate	Category 2 - Questionable interpretation of the requirement	Are the Official Abstract requirements applicable to the central count paper ballot component of the system? The observation is that this report would be developed in the Tally Software. That would seem to be appropriate.
CG3-P3	302	04-Fail	TRUE	TRUE	TRUE	If the total number of votes cast and counted in any precinct by early voters' and absentee ballot is less than ten, the returns for all such precincts in the political subdivision shall be reported together.	CCOS	Fail		
CG3-P3	303	04-Fail	TRUE	TRUE	TRUE	The official abstract shall include, by precinct/ballot style or vote center, where applicable The total active registered electors in the precinct and the total for the jurisdiction holding the election;	CCOS	Indeterminate	Category 2 - Questionable interpretation of the requirement	Are the Official Abstract requirements applicable to the central count paper ballot component of the system? The observation is that this report would be developed in the Tally Software. That would seem to be appropriate. Why would the Central Count tabulator need to tabulate turnout statistics?
CG3-P3	304	04-Fail	TRUE	TRUE	TRUE	The official abstract shall include, by precinct/ballot style or vote center, where applicable The statement of votes counted by race and ballot question or issue;	CCOS	Indeterminate	Category 2 - Questionable interpretation of the requirement	Are the Official Abstract requirements applicable to the central count paper ballot component of the system? The observation is that this report would be developed in the Tally Software. That would seem to be appropriate. Why would the Central Count tabulator need to tabulate statements of votes cast statistics?
CG3-P3	305	zz-Not Applicable	TRUE	TRUE	TRUE	The official abstract shall include, by precinct/ballot style or vote center, where applicable The number of emergency registrations.	CCOS	Not Applicable		
CG3-P3	306	04-Fail	TRUE	TRUE	TRUE	Beginning with the 2008 general election, and for all elections thereafter, the returns certified by the judges and the abstract of votes cast certified by the canvass board shall indicate the number of votes cast by early voters' or absentee ballot in each precinct for each candidate and for and against each ballot issue and ballot question and the number of ballots rejected, except as otherwise provided in paragraph (b) of this subsection (3).	CCOS	Indeterminate	Category 2 - Questionable interpretation of the requirement	Are the Official Abstract requirements applicable to the central count paper ballot component of the system? The observation says the Voting System. Is it the system or this particular component of the voting system?

197

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CG3-P3	307	zz-Not Applicable	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: <input type="checkbox"/> Can automatically produce vote totals for the polling place in printed form.	CCOS	Not Applicable		
CG3-P3	308	04-Fail	TRUE	TRUE	TRUE	The official abstract shall include, by precinct/ballot style or vote center, where applicable The total number of electors voting in each precinct, and the total for the jurisdiction holding the election;	CCOS	Not Applicable	Category 2 - Questionable interpretation of the requirement	Are the Official Abstract requirements applicable to the central count paper ballot component of the system? The observation says the Voting System cannot meet the requirements. Is it the system or this particular component of the voting system?
CG3-P3	309	04-Fail	TRUE	TRUE	TRUE	The official abstract shall include, by precinct/ballot style or vote center, where applicable The number of provisional ballots counted and the number rejected listed by each rejection code pursuant to Rule 26.5.4.	CCOS	Not Applicable	Category 2 - Questionable interpretation of the requirement	Are the Official Abstract requirements applicable to the central count paper ballot component of the system? The observation is that this report would be developed in the Tally Software. That would seem to be appropriate. Why would the Central Count tabulator need to tabulate provisional ballot statistics?
CG3-P3	310	zz-Not Applicable	TRUE	TRUE	TRUE	The official abstract shall include, by precinct/ballot style or vote center, where applicable The number of absentee or mail ballots counted and the number rejected;	CCOS	Not Applicable		
CG3-P3	311	04-Fail	TRUE	TRUE	TRUE	The voting system shall accurately integrate election day voting results with absentee, early voting as well as provisional ballot results.	CCOS	Not Applicable	Category 2 - Questionable interpretation of the requirement	The central count optical scan component would not be used to integrate results from outside the site where it was used.
CG3-P3	312	04-Fail	TRUE	TRUE	TRUE	The voting system shall provide for the tabulation of votes cast in split precincts where all voters residing in one precinct are not voting the same ballot style.	CCOS	Indeterminate	Category 5 - Observations do not support the Status	The requirement is for handling split precincts. The observation is that the system will handle 'split' precincts. The Status of Fail was for a tabulation error which was apparently unrelated to this requirement.
CG4-P3	401	01-Pass	TRUE	TRUE	TRUE	The official abstract shall include, by precinct/ballot style or vote center, where applicable The total active registered electors in the precinct and the total for the jurisdiction holding the election;	Software	Pass		
CG4-P3	402	04-Fail	TRUE	TRUE	TRUE	The official abstract shall include, by precinct/ballot style or vote center, where applicable The number of absentee or mail ballots counted and the number rejected;	Software	Indeterminate	Category 2 - Questionable interpretation of the requirement	Since the determination of legality of absentees takes place outside of the tabulation system is this applicable? Is the requirement for the software to support data entry to produce such a report or is this a requirement for the official election results reported by the election authority?
CG4-P3	403	04-Fail	TRUE	TRUE	TRUE	The official abstract shall include, by precinct/ballot style or vote center, where applicable The number of provisional ballots counted and the number rejected listed by each rejection code pursuant to Rule 26.5.4.	Software	Indeterminate	Category 2 - Questionable interpretation of the requirement	The requirement is for content of the official abstract report. The status of Fail appears to be based upon the fact that the system requires resolution of provisional ballots to occur outside the tabulation system. Is there a requirement for automated resolution of provisional's?

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CG4-P3	404	01-Pass	TRUE	TRUE	TRUE	The official abstract shall include, by precinct/ballot style or vote center, where applicable The number of voters who voted early;	Software	Pass		
CG4-P3	405	01-Pass	TRUE	TRUE	TRUE	The official abstract shall include, by precinct/ballot style or vote center, where applicable The total number of electors voting in each precinct, and the total for the jurisdiction holding the election;	Software	Pass		
CG4-P3	406	01-Pass	TRUE	TRUE	TRUE	The voting system shall provide for the tabulation of votes cast in split precincts where all voters residing in one precinct are not voting the same ballot style.	Software	Pass		
CG4-P3	407	zz-Not Applicable	TRUE	TRUE	TRUE	No electronic or electromechanical voting system shall be certified by the secretary of state unless such system: <input type="checkbox"/> Can automatically produce vote totals for the polling place in printed form.	Software	Indeterminate	Category 2 - Questionable interpretation of the requirement	Is the requirement for production of printed polling place results only applicable to precinct count devices?
CG4-P3	408	02-Pass Conditional	TRUE	TRUE	TRUE	Beginning with the 2008 general election, and for all elections thereafter, the returns certified by the judges and the abstract of votes cast certified by the canvass board shall indicate the number of votes cast by early voters' or absentee ballot in each precinct for each candidate and for and against each ballot issue and ballot question and the number of ballots rejected, except as otherwise provided in paragraph (b) of this subsection (3).	Software	Indeterminate	Category 4 - Insufficient description to support the finding and status	The requirement is for content of the abstract report. The observation is that the Canvass report meets the requirements. The finding is that with "the controls" the requirement can be met. What controls? Why are they necessary?
CG4-P3	409	01-Pass	TRUE	TRUE	TRUE	The official abstract shall include, by precinct/ballot style or vote center, where applicable The statement of votes counted by race and ballot question or issue;	Software	Pass		
CG4-P3	410	01-Pass	TRUE	TRUE	TRUE	If the total number of votes cast and counted in any precinct by early voters' and absentee ballot is less than ten, the returns for all such precincts in the political subdivision shall be reported together.	Software	Pass		
CG4-P3	411	04-Fail	TRUE	TRUE	TRUE	The voting system shall accurately integrate election day voting results with absentee, early voting as well as provisional ballot results.	Software	Indeterminate	Category 2 - Questionable interpretation of the requirement	The requirement is for integration of four counting group types. The observation is that the system can combine counting groups but can only provide separate reports for three of the counting group types.

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
CG4-P3	412	zz-Not Applicable	TRUE	TRUE	TRUE	Any report or export (electronic or paper based) generated from an Electronic Pollbook shall remove the date/time stamp from the record and not use this field as a sort method. Any assignment of Record IDs, Key ID, or Serial Number stored in the database of votes shall be randomly assigned.	Software	Not Applicable		
CG4-P3	413	zz-Not Applicable	TRUE	TRUE	TRUE	The official abstract shall include, by precinct/ballot style or vote center, where applicable The number of emergency registrations;	Software	Not Applicable		
DA1-P3	101	02-Pass Conditional	TRUE	TRUE	TRUE	The Voting system shall provide for appropriately authorized operators to conduct logic and accuracy testing as required herein: <input type="checkbox"/> All V-VPAT components shall be capable of integrating into existing state testing and auditing requirements of the voting system. <input type="checkbox"/> Election Judges shall attest to the V-VPAT record having no votes included on the paper record prior to the start of voting, and prior to the installation or replacement of a new V-VPAT record.	DRE	Conditional Pass		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
DA1-P3	102	04-Fail	TRUE	TRUE	TRUE	The Voting system shall provide for appropriately authorized operators to conduct hardware and diagnostics testing as required herein; Hardware Diagnostic Test for All input and output devices; Hardware Diagnostic Test for Communications ports; Hardware Diagnostic Test for System printers; Hardware Diagnostic Test for System modems when applicable; Hardware Diagnostic Test for System Screen displays; Hardware Diagnostic Test for Boot performance and initializations; Hardware Diagnostic Test for Firmware loads; Hardware Diagnostic Test for Software loads; Hardware Diagnostic Test for Confirmation that screen displays are functioning; Hardware Diagnostic Test for Date, time and calibration of systems.	DRE	Indeterminate	Category 4 - Insufficient description to support the finding and status	The requirement is for the system to allow authorized operators to perform ten specific diagnostic tests. The observation is that these tests are only performed in the power up self test. Which of the ten required tests are not performed? When should the operator be able to perform these tests? Is not the step of power up an operator initiation of self tests?
DA2-P3	201	04-Fail	TRUE	TRUE	TRUE	The Voting system shall provide for appropriately authorized operators to conduct hardware and diagnostics testing as required herein; Hardware Diagnostic Test for All input and output devices; Hardware Diagnostic Test for Communications ports; Hardware Diagnostic Test for System printers; Hardware Diagnostic Test for System modems when applicable; Hardware Diagnostic Test for System Screen displays; Hardware Diagnostic Test for Boot performance and initializations; Hardware Diagnostic Test for Firmware loads; Hardware Diagnostic Test for Software loads; Hardware Diagnostic Test for Confirmation that screen displays are functioning; Hardware Diagnostic Test for Date, time and calibration of systems.	PCOS	Indeterminate	Category 4 - Insufficient description to support the finding and status	The requirement is for the system to allow authorized operators to perform ten specific diagnostic tests. The observation is that these tests are only performed in the power up self test. Which of the ten required tests are not performed? When should the operator be able to perform these tests? Is not the step of power up an operator initiation of self tests?

201

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
DA2-P3	202	zz-Not Applicable	TRUE	TRUE	TRUE	The Voting system shall provide for appropriately authorized operators to conduct logic and accuracy testing as required herein. All V-VPAT components shall be capable of integrating into existing state testing and auditing requirements of the voting system. Election Judges shall attest to the V-VPAT record having no votes included on the paper record prior to the start of voting, and prior to the installation or replacement of a new V-VPAT record.	PCOS	Not Applicable		
DA3-P3	301	04-Fail	TRUE	TRUE	TRUE	The Voting system shall provide for appropriately authorized operators to conduct hardware and diagnostics testing as required herein; Hardware Diagnostic Test for All input and output devices; Hardware Diagnostic Test for Communications ports; Hardware Diagnostic Test for System printers; Hardware Diagnostic Test for System modems when applicable; Hardware Diagnostic Test for System Screen displays; Hardware Diagnostic Test for Boot performance and initializations; Hardware Diagnostic Test for Firmware loads; Hardware Diagnostic Test for Software loads; Hardware Diagnostic Test for Confirmation that screen displays are functioning; Hardware Diagnostic Test for Date, time and calibration of systems.	CCOS	Indeterminate	Category 4 - Insufficient description to support the finding and status	Some of these diagnostic tests could and would appropriately be performed in the operating system supporting the Ballot Now application and scanner. Some may be inapplicable. Within the applicable items in the ten requirements, which were not met by the combination of the Operating system, application and hardware of the Central Count Optical Scan module?

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
DA3-P3	302	zz-Not Applicable	TRUE	TRUE	TRUE	The Voting system shall provide for appropriately authorized operators to conduct logic and accuracy testing as required herein. All V-VPAT components shall be capable of integrating into existing state testing and auditing requirements of the voting system. Election Judges shall attest to the V-VPAT record having no votes included on the paper record prior to the start of voting, and prior to the installation or replacement of a new V-VPAT record.	CCOS	Not Applicable		
DA4-P3	401	zz_Not Applicable	TRUE	TRUE	TRUE	The Voting system shall provide for appropriately authorized operators to conduct hardware and diagnostics testing as required herein; Hardware Diagnostic Test for All input and output devices; Hardware Diagnostic Test for Communications ports; Hardware Diagnostic Test for System printers; Hardware Diagnostic Test for System modems when applicable; Hardware Diagnostic Test for System Screen displays; Hardware Diagnostic Test for Boot performance and initializations; Hardware Diagnostic Test for Firmware loads; Hardware Diagnostic Test for Software loads; Hardware Diagnostic Test for Confirmation that screen displays are functioning; Hardware Diagnostic Test for Date, time and calibration of systems.	Software	Indeterminate	Category 2 - Questionable interpretation of the requirement	The requirement is applicable to the "voting system." While certain of these requirements may be non applicable to this module of the system, were all of them non applicable? Why?

203

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
DA4-P3	402	zz-Not Applicable	TRUE	TRUE	TRUE	The Voting system shall provide for appropriately authorized operators to conduct logic and accuracy testing as required herein. All V-VPAT components shall be capable of integrating into existing state testing and auditing requirements of the voting system. Election Judges shall attest to the V-VPAT record having no votes included on the paper record prior to the start of voting, and prior to the installation or replacement of a new V-VPAT record.	Software	Not Applicable		
DB1-P3	101	04-Fail	TRUE	TRUE	TRUE	Ballots shall be cast and counted in all applicable counter types (or counter groups) as necessary based on the parts included in the voting system. These are at a minimum: Poll Place (or Vote Center), Absentee, Provisional, and Early Voting. Ballots may be run through components 10 or more times depending on components and counter group being tested to achieve a minimum number of ballots cast as follows for each group: Polling Place / DRE 500.	DRE	Indeterminate	Category 4 - Insufficient description to support the finding and status	The observation states that the voting system could not properly process the recall election. Which elements of the requirement could not be met?
DB1-P3	102	04-Fail	TRUE	TRUE	TRUE	The voting system provider is required to produce ballots in quantities identified below for each of the two elections. Enough ballots need to be created to conduct the testing of the voting system as defined in this rule. One complete set of ballots will be tested in each of the applicable counter types (or groups): Provisional – ballots are flat- no score marks.	DRE	Indeterminate	Category 4 - Insufficient description to support the finding and status	The requirement is for the Voting System Vendor to provide a supply of ballots including provisional ballots. The intent appears to be for a supply of printed paper ballots. The observation is that the Vendor has restricted provisional balloting to paper ballots, providing no provisional ballot capability on the DRE module of the system.

204

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
DB1-P3	103	01-Pass	TRUE	TRUE	TRUE	All ballots provided shall be blank with no marks on them. The following combinations of ballots are required: Four separate decks of ballots shall be provided consisting of 25 ballots for each precinct/precinct split generated for each election that are flat (1500 minimum combined). At least one deck shall have the General Election data, and at least one shall have the Primary election data as indicated in the instructions for voting system providers;	DRE	Not Applicable	Category 2 - Questionable interpretation of the requirement	The requirement is for attributes of the test ballots including being blank and specific quantities and numbers of decks. Apparently a requirement for paper ballots. The observation is that the device (a DRE) successfully voted all races provided.
DB1-P3	104	01-Pass	TRUE	TRUE	TRUE	The voting system provider is required to produce ballots in quantities identified below for each of the two elections. Enough ballots need to be created to conduct the testing of the voting system as defined in this rule. One complete set of ballots will be tested in each of the applicable counter types (or groups): Absentee – ballots are scored and folded to fit in standard Colorado Absentee Mailing Envelopes.	DRE	Not Applicable	Category 2 - Questionable interpretation of the requirement	The requirement is clearly for a supply of paper ballots and that the ballots be scored and folded. The item being tested a DRE device.
DB1-P3	105	01-Pass	TRUE	TRUE	TRUE	The voting system provider is required to produce ballots in quantities identified below for each of the two elections. Enough ballots need to be created to conduct the testing of the voting system as defined in this rule. One complete set of ballots will be tested in each of the applicable counter types (or groups): Early Voting – ballots are flat – no score marks.	DRE	Not Applicable	Category 2 - Questionable interpretation of the requirement	The requirement is clearly for a supply of paper ballots and that the ballots not have score marks. The item being tested a DRE device.
DB1-P3	106	01-Pass	TRUE	TRUE	TRUE	All ballots provided shall be blank with no marks on them. The following combinations of ballots are required: Four separate decks of ballots shall be provided consisting of 25 ballots for each precinct/precinct split generated for each election that are folded (1500 minimum combined). At least one deck shall have the General Election data, and at least one shall have the Primary election data as indicated in the instructions for voting system providers;	DRE	Not Applicable	Category 2 - Questionable interpretation of the requirement	The requirement is clearly for a supply of paper ballots and that some of the ballots be folded. The item being tested a DRE device.

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
DB1-P3	107	01-Pass	TRUE	TRUE	TRUE	The voting system provider is required to produce ballots in quantities identified below for each of the two elections. Enough ballots need to be created to conduct the testing of the voting system as defined in this rule. One complete set of ballots will be tested in each of the applicable counter types (or groups): Poll Place or Vote Center - ballots are flat – no score marks.	DRE	Not Applicable	Category 2 - Questionable interpretation of the requirement	The requirement is clearly for a supply of paper ballots and that the ballots be flat with no score marks. The item being tested a DRE device.
DB1-P3	108	04-Fail	TRUE	TRUE	TRUE	Ballots shall be cast and counted in all applicable counter types (or counter groups) as necessary based on the parts included in the voting system. These are at a minimum: Poll Place (or Vote Center), Absentee, Provisional, and Early Voting. Ballots may be run through components 10 or more times depending on components and counter group being tested to achieve a minimum number of ballots cast as follows for each group: Early Voting / DRE 250.	DRE	Indeterminate	Category 4 - Insufficient description to support the finding and status	The requirement is for ballots to be run in four counter groups and allows ballots to be run ten or more times. Apparently applicable to the use of paper ballots in testing. The observation from testing of a DRE device it that the voting system could not properly process the recall election. If the requirement is applicable to the device then which elements of the requirement were not met by the device?
DB1-P3	109	zz-Not Applicable	TRUE	TRUE	TRUE	Votes cast for an office to be filled or a ballot question or ballot issue to be decided shall not be counted if a voter marks more names than there are persons to be elected to an office or if for any reason it is impossible to determine the elector's choice of candidate or vote concerning the ballot question or ballot issue. A defective or an incomplete mark on any ballot in a proper place shall be counted if no other mark is on the ballot indicating an intention to vote for some other candidate or ballot question or ballot issue.	DRE	Not Applicable		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
DB1-P3	110	04-Fail	TRUE	TRUE	TRUE	Ballots shall be cast and counted in all applicable counter types (or counter groups) as necessary based on the parts included in the voting system. These are at a minimum: Poll Place (or Vote Center), Absentee, Provisional, and Early Voting. Ballots may be run through components 10 or more times depending on components and counter group being tested to achieve a minimum number of ballots cast as follows for each group: Vote Center / DRE 500.	DRE	Indeterminate	Category 4 - Insufficient description to support the finding and status	The requirement is for ballots to be run in four counter groups and allows ballots to be run ten or more times. Apparently applicable to the use of paper ballots in testing. The observation from testing of a DRE device is that the voting system could not properly process the recall election. If the requirement is applicable to the device then which elements of the requirement were not met by the device?
DB1-P3	111	zz-Not Applicable	TRUE	TRUE	TRUE	All ballots provided shall be blank with no marks on them. The following combinations of ballots are required: One separate deck of ballots consisting of 200 ballots of any single precinct from the Coordinated election shall be provided that contains a two page ballot (races on four faces).	DRE	Not Applicable		
DB1-P3	112	04-Fail	TRUE	TRUE	TRUE	Each voting system shall be tested and examined by conducting at least three mock elections which shall include voting scenarios that exist within a primary election, a coordinated election, and a recall election.	DRE	Fail	Category 4 - Insufficient description to support the finding and status	The requirement is for the conduct of three test elections. The observation is that the voting system did not accurately count votes for the recall election. This should be expanded. What was the nature and magnitude of the error? What is the error rate? How does it compare to the acceptable error rate?
DB1-P3	113	01-Pass	TRUE	TRUE	TRUE	All ballots provided shall be blank with no marks on them. The following combinations of ballots are required: Four separate decks of ballots consisting of 300 ballots of any single precinct from each election. Two of these decks shall be printed in all alternative languages as required for the State of Colorado pursuant to section 45.5.2.3.5.	DRE	Not Applicable	Category 2 - Questionable interpretation of the requirement	The requirement is clearly for a supply of paper ballots and that two of the decks of ballots be printed in alternative languages. The item being tested a DRE device. The Observation is that the system successfully processed ballot sin both English and Spanish.
DB1-P3	114	zz-Not Applicable	TRUE	TRUE	TRUE	The testing board shall mark a minimum of 300 ballots with marking devices of various color, weight, and consistency to determine accurate counting with a variety of marking devices.	DRE	Not Applicable		
DB1-P3	115	zz-Not Applicable	TRUE	TRUE	TRUE	The voting system provider shall provide 10 ballot marking pens/pencils/markers as defined by their system for marking ballots by the Secretary of State or the designee.	DRE	Not Applicable		

207

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
DB1-P3	116	zz-Not Applicable	TRUE	TRUE	TRUE	All ballots provided shall be blank with no marks on them. The following combinations of ballots are required: Any vendor that uses serial numbers printed on ballots for processing shall produce ballots of each requirement printed both with and without serial numbers.	DRE	Not Applicable		
DB1-P3	117	04-Fail	TRUE	TRUE	TRUE	All ballots provided shall be blank with no marks on them. The following combinations of ballots are required: One separate deck of ballots consisting of 10 ballots for each precinct generated for the Recall election that are flat as indicated in the instructions for vendors.	DRE	Not Applicable	Category 4 - Insufficient description to support the finding and status	The requirement is for a Supply of ballots generated for the Recall Election that are "flat." This would appear to be a paper ballot requirement. This is Not Applicable to testing of a DRE. The observation states that the Voting System was not programmed correctly for counting recall ballots. While this finding deserves a Suspend status, it is not applicable to the requirement cited.
DB2-P3	201	04-Fail	TRUE	TRUE	TRUE	Ballots shall be cast and counted in all applicable counter types (or counter groups) as necessary based on the parts included in the voting system. These are at a minimum: Poll Place (or Vote Center), Absentee, Provisional, and Early Voting. Ballots may be run through components 10 or more times depending on components and counter group being tested to achieve a minimum number of ballots cast as follows for each group: Early Voting / OS 5000.	PCOS	Indeterminate	Category 4 - Insufficient description to support the finding and status	The observation says to see notes on test DB2-P3-220 which says See Notes on DB2-P3-201. What specifically was unsuccessful about the way the system processed ballots for the recall election? Was this a matter of how the system was programmed or was it a tabulation error? If so, what was the nature of the error, the error rate and how did it compare to the standard?
DB2-P3	202	04-Fail	TRUE	TRUE	TRUE	Ballots shall be cast and counted in all applicable counter types (or counter groups) as necessary based on the parts included in the voting system. These are at a minimum: Poll Place (or Vote Center), Absentee, Provisional, and Early Voting. Ballots may be run through components 10 or more times depending on components and counter group being tested to achieve a minimum number of ballots cast as follows for each group: Provisional 5,000.	PCOS	Indeterminate	Category 4 - Insufficient description to support the finding and status	The observation says to see notes on test DB2-P3-220 which says See Notes on DB2-P3-201 which says to See notes on test DB2-P3-220. What specifically was unsuccessful about the way the system processed ballots for the recall election? What was the problem with the vote for 3 races? Was this a matter of how the system was programmed or was it a tabulation error? If so, what was the nature of the error, the error rate and how did it compare to the standard?

208

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
DB2-P3	203	04-Fail	TRUE	TRUE	TRUE	Ballots shall be cast and counted in all applicable counter types (or counter groups) as necessary based on the parts included in the voting system. These are at a minimum: Poll Place (or Vote Center), Absentee, Provisional, and Early Voting. Ballots may be run through components 10 or more times depending on components and counter group being tested to achieve a minimum number of ballots cast as follows for each group: Polling Place / OS 1500.	PCOS	Indeterminate	Category 4 - Insufficient description to support the finding and status	The observation says to seen notes on test DB2-P3-220 which says See Notes on DB2-P3-201 which says to See notes on test DB2-P3-220. What specifically was unsuccessful about the way the system processed ballots for the recall election? What was the problem with the vote for 3 race? Was this a matter of how the system was programmed or was it a tabulation error? If so, what was the nature of the error, the error rate and how did it compare to the standard?
DB2-P3	204	04-Fail	TRUE	TRUE	TRUE	All ballots provided shall be blank with no marks on them. The following combinations of ballots are required: Four separate decks of ballots shall be provided consisting of 25 ballots for each precinct/precinct split generated for each election that are folded (1500 minimum combined). At least one deck shall have the General Election data, and at least one shall have the Primary election data as indicated in the instructions for voting system providers;	PCOS	Suspend	Category 1 - Testing to verify compliance could not be completed.	It is clear that the voting system vendor did not provide folded ballots. What prevented the ballots supplied from being folded? It appears the system was not tested with folded ballots.
DB2-P3	205	04-Fail	TRUE	TRUE	TRUE	Test all ballot reading functions – are they accurate and reliable as described in the requirement - how do scanner(s) responds to smudges, folds, etc; response to valid and invalid or absence of marks.	PCOS	Indeterminate	Category 4 and 7- Insufficient description to support the finding and status and the requirement is not found in the Statute or Rule cited	What was the nature of the inconsistency in the processing of the ballots? Of the errors described in the test log, what was the error rate on the test and how does it compare to the allowable error rate?
DB2-P3	206	04-Fail	TRUE	TRUE	TRUE	Ballots shall be cast and counted in all applicable counter types (or counter groups) as necessary based on the parts included in the voting system. These are at a minimum: Poll Place (or Vote Center), Absentee, Provisional, and Early Voting. Ballots may be run through components 10 or more times depending on components and counter group being tested to achieve a minimum number of ballots cast as follows for each group: Vote Center/ OS 5000.	PCOS	Indeterminate	Category 4 - Insufficient description to support the finding and status	The observation says to seen notes on test DB2-P3-220 which says See Notes on DB2-P3-201 which says to See notes on test DB2-P3-220. What specifically was unsuccessful about the way the system processed ballots for the recall election? What was the problem with the vote for 3 race? Was this a matter of how the system was programmed or was it a tabulation error? If so, what was the nature of the error, the error rate and how did it compare to the standard?

209

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
DB2-P3	207	04-Fail	TRUE	TRUE	TRUE	Votes cast for an office to be filled or a ballot question or ballot issue to be decided shall not be counted if a voter marks more names than there are persons to be elected to an office or if for any reason it is impossible to determine the elector's choice of candidate or vote concerning the ballot question or ballot issue. A defective or an incomplete mark on any ballot in a proper place shall be counted if no other mark is on the ballot indicating an intention to vote for some other candidate or ballot question or ballot issue.	PCOS	Indeterminate	Category 4 - Insufficient description to support the finding and status	The requirement is for rejection of ballots with overvoted races. Is the outcome of this test that the e-Scan was incapable of this function or that it was unable to perform the function because of an error in the creation of the election definition.
DB2-P3	208	01-Pass	TRUE	TRUE	TRUE	The voting system provider is required to produce ballots in quantities identified below for each of the two elections. Enough ballots need to be created to conduct the testing of the voting system as defined in this rule. One complete set of ballots will be tested in each of the applicable counter types (or groups): Provisional – ballots are flat- no score marks.	PCOS	Pass		
DB2-P3	209	04-Fail	TRUE	TRUE	TRUE	The voting system provider is required to produce ballots in quantities identified below for each of the two elections. Enough ballots need to be created to conduct the testing of the voting system as defined in this rule. One complete set of ballots will be tested in each of the applicable counter types (or groups): Absentee – ballots are scored and folded to fit in standard Colorado Absentee Mailing Envelopes.	PCOS	Suspend	Category 1 - Testing to verify compliance could not be completed.	It is clear that the voting system vendor did not provide folded ballots. What prevented the ballots supplied from being folded? It appears the system was not tested with folded ballots.
DB2-P3	210	01-Pass	TRUE	TRUE	TRUE	The voting system provider is required to produce ballots in quantities identified below for each of the two elections. Enough ballots need to be created to conduct the testing of the voting system as defined in this rule. One complete set of ballots will be tested in each of the applicable counter types (or groups): Early Voting – ballots are flat – no score marks.	PCOS	Pass		

210

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
DB2-P3	211	04-Fail	TRUE	TRUE	TRUE	All ballots provided shall be blank with no marks on them. The following combinations of ballots are required: Any vendor that uses serial numbers printed on ballots for processing shall produce ballots of each requirement printed both with and without serial numbers.	PCOS	Pass	Category 5 - Observations do not support the Status	The requirement is for the vendor to provide both serialized and non serialized ballots for testing. The observation is that the vendor complied with this requirement. The errors observed in processing ballots are significant but not material to compliance with this requirement.
DB2-P3	212	01-Pass	TRUE	TRUE	TRUE	The voting system provider is required to produce ballots in quantities identified below for each of the two elections. Enough ballots need to be created to conduct the testing of the voting system as defined in this rule. One complete set of ballots will be tested in each of the applicable counter types (or groups): Poll Place or Vote Center - ballots are flat – no score marks.	PCOS	Pass		
DB2-P3	213	04-Fail	TRUE	TRUE	TRUE	All ballots provided shall be blank with no marks on them. The following combinations of ballots are required: One separate deck of ballots consisting of 200 ballots of any single precinct from the Coordinated election shall be provided that contains a two page ballot (races on four faces).	PCOS	Pass	Category 5 - Observations do not support the Status	The requirement is for the vendor to provide multipage ballots. The observation is that the system was unable to process the multipaged ballot. Apparently the vendor met the requirement. The inability of the system to process the ballot is an important anomaly but not material to meeting this requirement.
DB2-P3	214	04-Fail	TRUE	TRUE	TRUE	The testing board shall mark a minimum of 300 ballots with marking devices of various color, weight, and consistency to determine accurate counting with a variety of marking devices.	PCOS	Indeterminate	Category 4 - Insufficient description to support the finding and status	The requirement is to determine accurate counting with a variety of marking devices. What was the nature of the inconsistency. Were there particular colors or inks that were not readable? Was the system inconsistent in the reading of any particular marker?
DB2-P3	215	04-Fail	TRUE	TRUE	TRUE	The voting system provider shall provide 10 ballot marking pens/pencils/markers as defined by their system for marking ballots by the Secretary of State or the designee.	PCOS	Fail		
DB2-P3	216	04-Fail	TRUE	TRUE	TRUE	All ballots provided shall be blank with no marks on them. The following combinations of ballots are required: One separate deck of ballots consisting of 10 ballots for each precinct generated for the Recall election that are flat as indicated in the instructions for vendors.	PCOS	Indeterminate	Category 4 - Insufficient description to support the finding and status	The requirement is for the vendor to provide ballots for the recall election. The observation is that the system was not programmed for counting recall ballots. It does not say if the ballots were provided.

211

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
DB2-P3	217	01-Pass	TRUE	TRUE	TRUE	All ballots provided shall be blank with no marks on them. The following combinations of ballots are required: Four separate decks of ballots consisting of 300 ballots of any single precinct from each election. Two of these decks shall be printed in all alternative languages as required for the State of Colorado pursuant to section 45.5.2.3.5;	PCOS	Pass		
DB2-P3	218	04-Fail	TRUE	TRUE	TRUE	All ballots provided shall be blank with no marks on them. The following combinations of ballots are required: Four separate decks of ballots shall be provided consisting of 25 ballots for each precinct/precinct split generated for each election that are flat (1500 minimum combined). At least one deck shall have the General Election data, and at least one shall have the Primary election data as indicated in the instructions for voting system providers;	PCOS	Indeterminate	Category 4 - Insufficient description to support the finding and status	The requirement is for the vendor to provide a supply of ballots with certain characteristics. The observation is that the device did not successfully process all ballots provided.
DB2-P3	219	04-Fail	TRUE	TRUE	TRUE	The system shall stop and inform operator of ballot handling errors such as misfeeds, damaged ballot, and multiple feeds. Also, give corrective measures to remove the ballot, sort is as unreadable (out stack) and gives a way to restart or recount the uncounted ballots. (Mis-feeds =< 1 per 5,000).	PCOS	Fail		
DB2-P3	220	04-Fail	TRUE	TRUE	TRUE	Each voting system shall be tested and examined by conducting at least three mock elections which shall include voting scenarios that exist within a primary election, a coordinated election, and a recall election.	PCOS	Fail	Category 4 - Insufficient description to support the finding and status	The requirement is for the conduct of three test elections. The observation is that the voting system did not accurately count votes for the recall election. This should be expanded. What was the nature and magnitude of the error? What is the error rate? How does it compare to the acceptable error rate?
DB3-P3	301	04-Fail	TRUE	TRUE	TRUE	All ballots provided shall be blank with no marks on them. The following combinations of ballots are required: One separate deck of ballots consisting of 10 ballots for each precinct generated for the Recall election that are flat as indicated in the instructions for vendors.	PCOS	Indeterminate	Category 4 - Insufficient description to support the finding and status	The requirement is for the vendor to provide ballots for the recall election. The observation is that the system was not programmed for counting recall ballots. It does not say if the ballots were provided.

212

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
DB3-P3	302	04-Fail	TRUE	TRUE	TRUE	Ballots shall be cast and counted in all applicable counter types (or counter groups) as necessary based on the parts included in the voting system. These are at a minimum: Poll Place (or Vote Center), Absentee, Provisional, and Early Voting. Ballots may be run through components 10 or more times depending on components and counter group being tested to achieve a minimum number of ballots cast as follows for each group: Vote Center/ OS 5000.	CCOS	Indeterminate	Category 4 - Insufficient description to support the finding and status	The requirement is for ballots to be run in four counter groups and allows ballots to be run ten or more times. The observation refers to DB3-P3-307 which refers to itself. In what way was the processing of the recall ballots incorrect. Was this a result of the way the recall election definition was set up or other issues. What was the nature of the problems tabulating the vote for three race.
DB3-P3	303	04-Fail	TRUE	TRUE	TRUE	Ballots shall be cast and counted in all applicable counter types (or counter groups) as necessary based on the parts included in the voting system. These are at a minimum: Poll Place (or Vote Center), Absentee, Provisional, and Early Voting. Ballots may be run through components 10 or more times depending on components and counter group being tested to achieve a minimum number of ballots cast as follows for each group: Provisional 5,000.	CCOS	Indeterminate	Category 4 - Insufficient description to support the finding and status	Was the problem that Ballot Now did not have a counter group for Provisional's or that the overall system including Tally could not report a separate counter group for Provisional's?
DB3-P3	304	04-Fail	TRUE	TRUE	TRUE	Test all ballot reading functions – are they accurate and reliable as described in the requirement - how do scanner(s) responds to smudges, folds, etc; response to valid and invalid or absence of marks.	CCOS	Fail	Category 7 - The requirement is not found in the Statute or Rule cited.	
DB3-P3	305	04-Fail	TRUE	TRUE	TRUE	Ballots shall be cast and counted in all applicable counter types (or counter groups) as necessary based on the parts included in the voting system. These are at a minimum: Poll Place (or Vote Center), Absentee, Provisional, and Early Voting. Ballots may be run through components 10 or more times depending on components and counter group being tested to achieve a minimum number of ballots cast as follows for each group: Early Voting / OS 5000.	CCOS	Indeterminate	Category 4 - Insufficient description to support the finding and status	The requirement is for ballots to be run in four counter groups and allows ballots to be run ten or more times. The observation refers to DB3-P3-307 which refers to itself. In what way was the processing of the recall ballots incorrect. Was this a result of the way the recall election definition was set up or other issues. What was the nature of the problems tabulating the vote for three race.

213

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
DB3-P3	306	01-Pass	TRUE	TRUE	TRUE	The system shall stop and inform operator of ballot handling errors such as misfeeds, damaged ballot, and multiple feeds. Also, give corrective measures to remove the ballot, sort is as unreadable (out stack) and gives a way to restart or recount the uncouned ballots. (Mis-feeds =< 1 per 5,000).	CCOS	Pass	Category 7 - The requirement is not found in the Statute or Rule cited.	
DB3-P3	307	04-Fail	TRUE	TRUE	TRUE	Ballots shall be cast and counted in all applicable counter types (or counter groups) as necessary based on the parts included in the voting system. These are at a minimum: Poll Place (or Vote Center), Absentee, Provisional, and Early Voting. Ballots may be run through components 10 or more times depending on components and counter group being tested to achieve a minimum number of ballots cast as follows for each group: Absentee 10,000.	CCOS	Indeterminate	Category 4 - Insufficient description to support the finding and status	The observation refers to itself. In what way was the processing of the recall ballots incorrect. Was this a result of the way the recall election definition was set up or other issues. What was the nature of the problems tabulating the vote for three race.
DB3-P3	308	04-Fail	TRUE	TRUE	TRUE	All ballots provided shall be blank with no marks on them. The following combinations of ballots are required: Any vendor that uses serial numbers printed on ballots for processing shall produce ballots of each requirement printed both with and without serial numbers.	CCOS	Indeterminate	Category 5 - Observations do not support the Status	The requirement is for the vendor to provide both serialized and non serialized ballots for testing. The observation is that the vendor complied with this requirement. The errors observed in processing ballots are significant but not material to compliance with the cited requirement
DB3-P3	309	04-Fail	TRUE	TRUE	TRUE	All ballots provided shall be blank with no marks on them. The following combinations of ballots are required: Four separate decks of ballots shall be provided consisting of 25 ballots for each precinct/precinct split generated for each election that are flat (1500 minimum combined). At least one deck shall have the General Election data, and at least one shall have the Primary election data as indicated in the instructions for voting system providers;	CCOS	Indeterminate	Category 4 - Insufficient description to support the finding and status	The requirement is for the vendor to supply test ballots in certain numbers and in four separate test decks. The Observation is that the system was unable to process the ballots as required.

214

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
DB3-P3	310	01-Pass	TRUE	TRUE	TRUE	All ballots provided shall be blank with no marks on them. The following combinations of ballots are required: Four separate decks of ballots consisting of 300 ballots of any single precinct from each election. Two of these decks shall be printed in all alternative languages as required for the State of Colorado pursuant to section 45.5.2.3.5;	CCOS	Pass		
DB3-P3	311	04-Fail	TRUE	TRUE	TRUE	The voting system provider shall provide 10 ballot marking pens/pencils/markers as defined by their system for marking ballots by the Secretary of State or the designee.	CCOS	Fail		
DB3-P3	312	04-Fail	TRUE	TRUE	TRUE	The testing board shall mark a minimum of 300 ballots with marking devices of various color, weight, and consistency to determine accurate counting with a variety of marking devices.	CCOS	Indeterminate	Category 4 - Insufficient description to support the finding and status	The requirement is to determine accurate counting with a variety of marking devices. What was the nature of the inconsistency. Were there particular colors or inks that were not readable? Was the system inconsistent in the reading of any particular marker?
DB3-P3	313	04-Fail	TRUE	TRUE	TRUE	All ballots provided shall be blank with no marks on them. The following combinations of ballots are required: One separate deck of ballots consisting of 200 ballots of any single precinct from the Coordinated election shall be provided that contains a two page ballot (races on four faces).	CCOS	Pass	Category 5 - Observations do not support the Status	The requirement is for the vendor to provide a two page ballot. The Observation is the system processed multi paged ballots. Apparently the vendor did provide the ballots as required. The inaccuracy of the count, while a serious anomaly is not relevant to compliance with this requirement.
DB3-P3	314	01-Pass	TRUE	TRUE	TRUE	The voting system provider is required to produce ballots in quantities identified below for each of the two elections. Enough ballots need to be created to conduct the testing of the voting system as defined in this rule. One complete set of ballots will be tested in each of the applicable counter types (or groups): Poll Place or Vote Center - ballots are flat - no score marks.	CCOS	Pass		

215

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
DB3-P3	315	01-Pass	TRUE	TRUE	TRUE	The voting system provider is required to produce ballots in quantities identified below for each of the two elections. Enough ballots need to be created to conduct the testing of the voting system as defined in this rule. One complete set of ballots will be tested in each of the applicable counter types (or groups): Provisional - ballots are flat- no score marks.	CCOS	Pass		
DB3-P3	316	04-Fail	TRUE	TRUE	TRUE	The voting system provider is required to produce ballots in quantities identified below for each of the two elections. Enough ballots need to be created to conduct the testing of the voting system as defined in this rule. One complete set of ballots will be tested in each of the applicable counter types (or groups): Absentee - ballots are scored and folded to fit in standard Colorado Absentee Mailing Envelopes.	CCOS	Indeterminate	Category 4 - Insufficient description to support the finding and status	The requirement is that the ballots be provided both scored and folded. The observation is that they were not provided folded. Were they scored? Why could they not be folded as they were marked? Does this mean that the system cannot handle folded ballots or only that it was not tested with folded ballots.
DB3-P3	317	01-Pass	TRUE	TRUE	TRUE	The voting system provider is required to produce ballots in quantities identified below for each of the two elections. Enough ballots need to be created to conduct the testing of the voting system as defined in this rule. One complete set of ballots will be tested in each of the applicable counter types (or groups): Early Voting - ballots are flat - no score marks.	CCOS	Pass		
DB3-P3	318	04-Fail	TRUE	TRUE	TRUE	All ballots provided shall be blank with no marks on them. The following combinations of ballots are required: Four separate decks of ballots shall be provided consisting of 25 ballots for each precinct/precinct split generated for each election that are folded (1500 minimum combined). At least one deck shall have the General Election data, and at least one shall have the Primary election data as indicated in the instructions for voting system providers;	CCOS	Fail	Category 4 - Insufficient description to support the finding and status	While it is clear that the vendor did not provide folded ballots, why were they not folded after marking?

216

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
DB3-P3	319	04-Fail	TRUE	TRUE	TRUE	Each voting system shall be tested and examined by conducting at least three mock elections which shall include voting scenarios that exist within a primary election, a coordinated election, and a recall election.	CCOS	Indeterminate	Category 4 - Insufficient description to support the finding and status	As with other test records regarding the same or a similar incident, it is unclear whether the system was properly programmed for this function, capable of meeting the requirement or simply produced erroneous results.
DB3-P3	320	04-Fail	TRUE	TRUE	TRUE	Votes cast for an office to be filled or a ballot question or ballot issue to be decided shall not be counted if a voter marks more names than there are persons to be elected to an office or if for any reason it is impossible to determine the elector's choice of candidate or vote concerning the ballot question or ballot issue. A defective or an incomplete mark on any ballot in a proper place shall be counted if no other mark is on the ballot indicating an intention to vote for some other candidate or ballot question or ballot issue.	CCOS	Indeterminate	Category 4 - Insufficient description to support the finding and status	The requirement is for the proper handling of overvotes. The observation refers to test DB3-P3-307 which refers to itself. In what way did the system inaccurately process overvotes on the vote for three race?
DB3-P3	321	01-Pass	TRUE	TRUE	TRUE	Demonstrate the ability to process ballots in batch or non-batch format. (Central Count Scanners only).	CCOS	Pass	Category 7 - The requirement is not found in the Statute or Rule cited.	
DB4-P3	401	01-Pass	TRUE	TRUE	TRUE	Election scenarios shall feature at least 10 districts (or district types), comprised of at least 20 precincts that will result in a minimum of 5 unique ballot styles or combinations as indicated in the instructions to providers.	Software	Pass		
DB4-P3	402	01-Pass	TRUE	TRUE	TRUE	The voting system provider is required to produce ballots in quantities identified below for each of the two elections. Enough ballots need to be created to conduct the testing of the voting system as defined in this rule. One complete set of ballots will be tested in each of the applicable counter types (or groups): Provisional – ballots are flat- no score marks.	Software	Pass		

217

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
DB4-P3	403	04-Fail	TRUE	TRUE	TRUE	Votes cast for an office to be filled or a ballot question or ballot issue to be decided shall not be counted if a voter marks more names than there are persons to be elected to an office or if for any reason it is impossible to determine the elector's choice of candidate or vote concerning the ballot question or ballot issue. A defective or an incomplete mark on any ballot in a proper place shall be counted if no other mark is on the ballot indicating an intention to vote for some other candidate or ballot question or ballot issue.	Software	Indeterminate	Category 4 - Insufficient description to support the finding and status	The requirement is for the proper handling of overvotes. The observation is that the system was unsuccessful in tabulating ballots from the Coordinated and recall elections. Were the anomalies in the tabulation related to the proper handling of overvotes?, If so, how? What was the actual error rate and how does it compare to the acceptable error rate?
DB4-P3	404	04-Fail	TRUE	TRUE	TRUE	The voting system provider is required to produce ballots in quantities identified below for each of the two elections. Enough ballots need to be created to conduct the testing of the voting system as defined in this rule. One complete set of ballots will be tested in each of the applicable counter types (or groups): Poll Place or Vote Center - ballots are flat – no score marks.	Software	Pass	Category 5 - Observations do not support the Status	The requirement is for the vendor to provide ballots with no score marks. The Observation is that the ballots were provided but the system did not tabulate them correctly. While incorrect tabulation is a serious anomaly it is not relevant the the requirement cited.
DB4-P3	405	04-Fail	TRUE	TRUE	TRUE	Each voting system shall be tested and examined by conducting at least three mock elections which shall include voting scenarios that exist within a primary election, a coordinated election, and a recall election.	Software	Indeterminate	Category 4 - Insufficient description to support the finding and status	As with other test records regarding the same or a similar incident, it is unclear whether the system was properly programmed for this function, capable of meeting the requirement or simply produced erroneous results.
DB4-P3	406	04-Fail	TRUE	TRUE	TRUE	The voting system provider is required to produce ballots in quantities identified below for each of the two elections. Enough ballots need to be created to conduct the testing of the voting system as defined in this rule. One complete set of ballots will be tested in each of the applicable counter types (or groups): Early Voting – ballots are flat – no score marks.	Software	Pass	Category 5 - Observations do not support the Status	The requirement is for the vendor to provide ballots with no score marks. The Observation is that the ballots were provided but the system did not tabulate them correctly. While incorrect tabulation is a serious anomaly it is not relevant the the requirement cited.

218

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
DB4-P3	407	04-Fail	TRUE	TRUE	TRUE	The voting system provider is required to produce ballots in quantities identified below for each of the two elections. Enough ballots need to be created to conduct the testing of the voting system as defined in this rule. One complete set of ballots will be tested in each of the applicable counter types (or groups). Absentee – ballots are scored and folded to fit in standard Colorado Absentee Mailing Envelopes.	Software	Indeterminate	Category 4 - Insufficient description to support the finding and status	While it is clear that the vendor did not provide folded ballots, why were they not folded after marking?
DC1-P3	101	zz-Not Applicable	TRUE	TRUE	TRUE	The voting system shall include hardware and software to enable the closing of the voting location and disabling acceptance of ballots on all vote tabulation devices to allow for the following: Ability to accommodate a two page ballot (races on four faces) is required.	DRE	Not Applicable		
DC1-P3	102	zz-Not Applicable	TRUE	TRUE	TRUE	Multiple Page Ballots. In any election where a multiple page printed ballot is used, a voter must vote and return all pages of the ballot at the same time. Any voter who has returned at least one page of a multiple page printed ballot will be considered to have voted. Any additional page returned at a later time shall not be counted but shall be appropriately marked, set aside, and preserved as other election materials in accordance with section 1-7-802, C.R.S.	DRE	Not Applicable		
DC2-P3	201	04-Fail	TRUE	TRUE	TRUE	Multiple Page Ballots. In any election where a multiple page printed ballot is used, a voter must vote and return all pages of the ballot at the same time. Any voter who has returned at least one page of a multiple page printed ballot will be considered to have voted. Any additional page returned at a later time shall not be counted but shall be appropriately marked, set aside, and preserved as other election materials in accordance with section 1-7-802, C.R.S.	PCOS	Fail		

219

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
DC2-P3	202	04-Fail	TRUE	TRUE	TRUE	The voting system shall include hardware and software to enable the closing of the voting location and disabling acceptance of ballots on all vote tabulation devices to allow for the following: Ability to accommodate a two page ballot (races on four faces) is required.	PCOS	Fail		
DC3-P3	301	04-Fail	TRUE	TRUE	TRUE	Multiple Page Ballots. In any election where a multiple page printed ballot is used, a voter must vote and return all pages of the ballot at the same time. Any voter who has returned at least one page of a multiple page printed ballot will be considered to have voted. Any additional page returned at a later time shall not be counted but shall be appropriately marked, set aside, and preserved as other election materials in accordance with section 1-7-802, C.R.S.	CCOS	Fail	Category 2 - Questionable interpretation of the requirement	While it is clear that the system did not meet the expectations of the testing board in the tabulation of multipage ballots, is the requirement cited a system functional requirement or a procedural requirement for elections administrators?
DC4-P3	401	04-Fail	TRUE	TRUE	TRUE	Multiple Page Ballots. In any election where a multiple page printed ballot is used, a voter must vote and return all pages of the ballot at the same time. Any voter who has returned at least one page of a multiple page printed ballot will be considered to have voted. Any additional page returned at a later time shall not be counted but shall be appropriately marked, set aside, and preserved as other election materials in accordance with section 1-7-802, C.R.S.	Software	Indeterminate	Category 4 - Insufficient description to support the finding and status	This test is of the software, we assume it includes Boss and Tally. The observation states that the system is capable of being programmed for multi page ballots but the eScan was not capable of multi page ballots and Ballot Now did not accurately process multi page ballots. Is there an issue with the software?
DD1-P3	101	01-Pass	TRUE	TRUE	TRUE	The Ballot Definition Subsystem shall be capable of formatting ballot styles in English and any alternate languages as are necessary to comply with The "Voting Rights Act of 1965" 42 U.S.C. § 1973c et seq. (1965).	DRE	Pass		
DD2-P3	201	01-Pass	TRUE	TRUE	TRUE	The Ballot Definition Subsystem shall be capable of formatting ballot styles in English and any alternate languages as are necessary to comply with The "Voting Rights Act of 1965" 42 U.S.C. § 1973c et seq. (1965).	PCOS	Pass		

220

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
DD3-P3	301	01-Pass	TRUE	TRUE	TRUE	The Ballot Definition Subsystem shall be capable of formatting ballot styles in English and any alternate languages as are necessary to comply with The "Voting Rights Act of 1965" 42 U.S.C. § 1973c et seq. (1965).	CCOS	Pass		
DD4-P3	401	01-Pass	TRUE	TRUE	TRUE	The Ballot Definition Subsystem shall be capable of formatting ballot styles in English and any alternate languages as are necessary to comply with The "Voting Rights Act of 1965" 42 U.S.C. § 1973c et seq. (1965).	Software	Pass		
DE1-P3	101	04-Fail	TRUE	TRUE	TRUE	The voting system shall be able to count all of an elector's votes on a provisional ballot or only federal and statewide offices and questions, as provided under section 1-8.5-108(2), C.R.S.	DRE	Indeterminate	Category 2 - Questionable interpretation of the requirement	The requirement is that the system be able to restrict the count to federal or statewide offices on provisional ballots. The observation is that the DRE module of the system does not handle provisional ballots. Is there a requirement that the DRE handle provisional ballots?
DE1-P3	102	04-Fail	TRUE	TRUE	TRUE	If used for provisional ballots, the VVPAT system shall be able to mark paper records as a provisional ballot through the use of human readable text and optionally printing barcode and/or serial number information which shall provide for mapping the record back to both the electronic record and the provisional voter for processing after verification in accordance with Article 8.5 of Title 1 C.R.S.	DRE	Not Applicable	Category 5 - Observations do not support the Status	The requirement provides that IF the VVPAT system is used for provisional ballots it shall meet certain requirements. The observation is that the DRE (which includes the VVPAT component) was not used for provisional ballots.
DE1-P3	103	04-Fail	TRUE	TRUE	TRUE	Handling of provisional ballots - reporting of results. □ (1) Provisional ballots shall be kept separate from all other ballots and counted separately.	DRE	Indeterminate	Category 2 - Questionable interpretation of the requirement	The requirement is that provisional's be kept separate and counted separately. The observation is that the DRE does not handle provisional's. Is there a requirement that the DRE handle provisional ballots?
DE1-P3	104	04-Fail	TRUE	TRUE	TRUE	Handling of provisional ballots - reporting of results. □ If twenty-five or more provisional ballots are cast and counted in a county, the designated election official shall report the results of voting by provisional ballot as a separate total. If fewer than twenty-five provisional ballots are cast and counted, the results of voting by provisional ballot shall be included in the results of voting by absentee ballot.	DRE	Indeterminate	Category 2 - Questionable interpretation of the requirement	The requirement is for the condition when there are less than 25 provisional ballots counted in a county. The observation is that the DRE will not handle provisional ballots.

221

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
DE1-P3	105	04-Fail	TRUE	TRUE	TRUE	Handling of provisional ballots - reporting of results. □ Votes cast by provisional ballot shall not be included in any unofficial results reported and shall be reported only as part of the official canvass.	DRE	Indeterminate	Category 2 - Questionable interpretation of the requirement	The requirement appears to be a procedural requirement on elections administrators. The observation is that the DRE will not handle provisional ballots.
DE1-P3	106	04-Fail	TRUE	TRUE	TRUE	Handling of provisional ballots - reporting of results. □ The designated election official shall keep a log of each provisional ballot cast, each provisional ballot counted, and each provisional ballot rejected. The code for the acceptance or rejection of the provisional ballot as prescribed by the secretary of state shall be marked on the log.	DRE	Indeterminate	Category 2 - Questionable interpretation of the requirement	The requirement appears to be a procedural requirement on elections administrators. The observation is that the DRE will not handle provisional ballots.
DE1-P3	107	04-Fail	TRUE	TRUE	TRUE	The word "provisional" shall be marked on the provisional ballot and on the pollbook or signature card next to the elector's name.	DRE	Not Applicable	Category 2 - Questionable interpretation of the requirement	The requirement appears to be a procedural requirement on elections administrators. It described marking on a paper ballot and on the pollbook or signature card. The observation is that the DRE will not handle provisional ballots.
DE2-P3	201	01-Pass	TRUE	TRUE	TRUE	The word "provisional" shall be marked on the provisional ballot and on the pollbook or signature card next to the elector's name.	PCOS	Not Applicable	Category 2 - Questionable interpretation of the requirement	The requirement appears to be a procedural requirement on elections administrators. It described marking on a paper ballot and on the pollbook or signature card. The observation is that the PCOS device will tabulate ballots that have been marked in the required manner.
DE2-P3	202	04-Fail	TRUE	TRUE	TRUE	The voting system shall be able to count all of an elector's votes on a provisional ballot or only federal and statewide offices and questions, as provided under section 1-8.5-108(2), C.R.S.	PCOS	Fail		
DE2-P3	203	zz-Not Applicable	TRUE	TRUE	TRUE	Handling of provisional ballots - reporting of results. □ (1) Provisional ballots shall be kept separate from all other ballots and counted separately.	PCOS	Not Applicable		
DE2-P3	204	04-Fail	TRUE	TRUE	TRUE	Handling of provisional ballots - reporting of results. □ If twenty-five or more provisional ballots are cast and counted in a county, the designated election official shall report the results of voting by provisional ballot as a separate total. If fewer than twenty-five provisional ballots are cast and counted, the results of voting by provisional ballot shall be included in the results of voting by absentee ballot.	PCOS	Not Applicable	Category 2 - Questionable interpretation of the requirement	The requirement appears to be a procedural requirement on elections officials. If provisional's are not to be reported until the final official canvass how would the requirement be applicable to precinct count equipment?,

222

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
DE2-P3	205	04-Fail	TRUE	TRUE	TRUE	Handling of provisional ballots - reporting of results. □ The designated election official shall keep a log of each provisional ballot cast, each provisional ballot counted, and each provisional ballot rejected. The code for the acceptance or rejection of the provisional ballot as prescribed by the secretary of state shall be marked on the log.	PCOS	Not Applicable	Category 2 - Questionable interpretation of the requirement	The requirement appears to be a procedural requirement on elections administrators. Is it also a functional requirement for precinct counters? How would the determination of acceptance or rejection occur in the precincts and data entered into the precinct counter?
DE2-P3	206	04-Fail	TRUE	TRUE	TRUE	Handling of provisional ballots - reporting of results. □ Votes cast by provisional ballot shall not be included in any unofficial results reported and shall be reported only as part of the official canvass.	PCOS	Indeterminate	Category 2 - Questionable interpretation of the requirement	The requirement appears to be a procedural requirement on elections administrators. Is it also a functional requirement for central count optical Scanners? The observation is that the system will count any ballots scanned together. The requirement seems to say that the election officials should not count them together. Is this something that cannot be achieved in Tally?
DE3-P3	301	01-Pass	TRUE	TRUE	TRUE	The word "provisional" shall be marked on the provisional ballot and on the pollbook or signature card next to the elector's name.	CCOS	Not Applicable	Category 2 - Questionable interpretation of the requirement	The requirement appears to be a procedural requirement on elections administrators. It described marking on a paper ballot and on the pollbook or signature card. The observation is that the CCOS device will tabulate ballots that have been marked in the required manner.
DE3-P3	302	zz-Not Applicable	TRUE	TRUE	TRUE	Handling of provisional ballots - reporting of results. □ The designated election official shall keep a log of each provisional ballot cast, each provisional ballot counted, and each provisional ballot rejected. The code for the acceptance or rejection of the provisional ballot as prescribed by the secretary of state shall be marked on the log.	CCOS	Not Applicable		
DE3-P3	303	zz-Not Applicable	TRUE	TRUE	TRUE	Handling of provisional ballots - reporting of results. □ Votes cast by provisional ballot shall not be included in any unofficial results reported and shall be reported only as part of the official canvass.	CCOS	Not Applicable		
DE3-P3	304	04-Fail	TRUE	TRUE	TRUE	Handling of provisional ballots - reporting of results. □ If twenty-five or more provisional ballots are cast and counted in a county, the designated election official shall report the results of voting by provisional ballot as a separate total. If fewer than twenty-five provisional ballots are cast and counted, the results of voting by provisional ballot shall be included in the results of voting by absentee ballot.	CCOS	Indeterminate	Category 4 - Insufficient description to support the finding and status	The observation conflicts with the observation in test DE3-P3-301 which states that a separate memory card is used to collect the provisional ballots which are tallied to a separate counter group.

223

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
DE3-P3	305	zz-Not Applicable	TRUE	TRUE	TRUE	Handling of provisional ballots - reporting of results. □ (1) Provisional ballots shall be kept separate from all other ballots and counted separately.	CCOS	Not Applicable		
DE3-P3	306	04-Fail	TRUE	TRUE	TRUE	The voting system shall be able to count all of an elector's votes on a provisional ballot or only federal and statewide offices and statewide ballot issues and questions, as provided under section 1-8.5-108(2), C.R.S.	CCOS	Fail		
DE4-P3	401	04-Fail	TRUE	TRUE	TRUE	Handling of provisional ballots - reporting of results. □ The designated election official shall keep a log of each provisional ballot cast, each provisional ballot counted, and each provisional ballot rejected. The code for the acceptance or rejection of the provisional ballot as prescribed by the secretary of state shall be marked on the log.	Software	Indeterminate	Category 4 - Insufficient description to support the finding and status	The requirement appears to be a procedural logging requirement for election administrators. Is this a functional requirement for the voting system? Then this is an evaluation of the software components of the system but the observation is that in other tests that the DRE will not handle provisional ballots.
DE4-P3	402	zz-Not Applicable	TRUE	TRUE	TRUE	The word "provisional" shall be marked on the provisional ballot and on the pollbook or signature card next to the elector's name.	Software	Not Applicable		
DE4-P3	403	04-Fail	TRUE	TRUE	TRUE	The voting system shall be able to count all of an elector's votes on a provisional ballot or only federal and statewide offices and statewide ballot issues and questions, as provided under section 1-8.5-108(2), C.R.S.	Software	Fail		
DE4-P3	404	04-Fail	TRUE	TRUE	TRUE	Handling of provisional ballots - reporting of results. □ (1) Provisional ballots shall be kept separate from all other ballots and counted separately.	Software	Indeterminate	Category 2 - Questionable interpretation of the requirement	As with the referenced Test DE4-P3-401, This requirement appears to be a procedural requirement for election administrators.
DE4-P3	405	04-Fail	TRUE	TRUE	TRUE	Handling of provisional ballots - reporting of results. □ If twenty-five or more provisional ballots are cast and counted in a county, the designated election official shall report the results of voting by provisional ballot as a separate total. If fewer than twenty-five provisional ballots are cast and counted, the results of voting by provisional ballot shall be included in the results of voting by absentee ballot.	Software	Indeterminate	Category 2 - Questionable interpretation of the requirement	As with the referenced Test DE4-P3-401, This requirement appears to be a procedural requirement for election administrators.

224

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
DE4-P3	406	04-Fail	TRUE	TRUE	TRUE	Handling of provisional ballots - reporting of results. Votes cast by provisional ballot shall not be included in any unofficial results reported and shall be reported only as part of the official canvass.	Software	Indeterminate	Category 2 - Questionable interpretation of the requirement	As with the referenced Test DE4-P3-401, This requirement appears to be a procedural requirement for election administrators.
DF1-P3	101	01- Pass	TRUE	TRUE	TRUE	The V-VPAT shall consist of the following minimum components: The voting device shall contain a paper audit trail writer or printer that shall be attached, built into, or used in conjunction with the DRE. The printer shall duplicate a voter's selections from the DRE onto a paper record.	DRE	Pass		
DF1-P3	102	01- Pass	TRUE	TRUE	TRUE	The V-VPAT shall consist of the following minimum components: The unit or device shall have a paper record display unit or area that shall allow a voter to view his or her paper record.	DRE	Pass		
DF1-P3	103	01- Pass	TRUE	TRUE	TRUE	The V-VPAT shall consist of the following minimum components: The V-VPAT unit shall contain a paper record storage unit that shall store cast and spoiled paper record copies securely.	DRE	Pass		
DF1-P3	104	01- Pass	TRUE	TRUE	TRUE	The V-VPAT shall consist of the following minimum components: These devices may be integrated as appropriate to their operation.	DRE	Pass		
DF1-P3	105	01- Pass	TRUE	TRUE	TRUE	V-VPAT devices shall allow voters to verify his or her selections on a paper record prior to casting ballots. The voter shall either accept or reject the choices represented on the paper record. Both the electronic record and the paper record shall be stored and retained upon the completion of casting a ballot.	DRE	Pass		
DF1-P3	106	04-Fail	TRUE	TRUE	TRUE	The V-VPAT printer connection may be any standard, publicly documented printer port (or the equivalent) using a standard communication protocol.	DRE	Indeterminate	Category 2 - Questionable interpretation of the requirement	The rule cited does not contain a requirement. It provides that the vendor "may" use a standard printer port and standard communication protocol.
DF1-P3	107	04-Fail	TRUE	TRUE	TRUE	The printer shall not be permitted to communicate with any other device than the voting device to which it is connected.	DRE	Indeterminate	Category 4 - Insufficient description to support the finding and status	The requirement is that the VVPAT does not have any connections other than to the voting device. This would appear to be a requirement which would be evaluated through observation by the testing board. The observation is that the vendor provided no documentation of the details of the connection. Were other connections found?
DF1-P3	108	01-Pass	TRUE	TRUE	TRUE	The printer shall only be able to function as a printer, and not perform any other non-printer related services.	DRE	Pass		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
DF1-P3	109	01- Pass	TRUE	TRUE	TRUE	Every electronic voting record shall have a corresponding paper record.	DRE	Pass		
DF1-P3	110	01- Pass	TRUE	TRUE	TRUE	The V-VPAT device shall be designed to allow every voter to review, and accept or reject his/her paper record in as private and independent manner as possible for both disabled and non-disabled voters.	DRE	Indeterminate	Category 4 - Insufficient description to support the finding and status	How does the VVPAT device allow voters with visual impairments to review their ballot in private and independently?
DF1-P3	111	02-Pass Conditional	TRUE	TRUE	TRUE	The V-VPAT system shall be designed in conjunction with State Law to ensure the secrecy of votes so that it is not possible to determine which voter cast which paper record.	DRE	Conditional Pass		
DF1-P3	112	04-Fail	TRUE	TRUE	TRUE	The V-VPAT printer shall print at a font size no less than ten (10) points for ease of readability. Any protective covering intended to be transparent shall be in such condition that it can be made transparent by ordinary cleaning of its exposed surface.	DRE	Fail		
DF1-P3	113	01- Pass	TRUE	TRUE	TRUE	The V-VPAT system shall be designed to allow each voter to verify his or her vote on a paper record in the same language they voted in on the DRE.	DRE	Pass		
DF1-P3	114	01- Pass	TRUE	TRUE	TRUE	The V-VPAT system shall be designed to prevent tampering with unique keys and/or seals for the compartment that stores the paper record, as well as meet the security requirements of this rule. Additional security measures may be in place on the printer to prevent tampering with the device.	DRE	Pass		
DF1-P3	115	01-Pass	TRUE	TRUE	TRUE	The V-VPAT system shall be capable of printing and storing paper record copies for at least 75 ballots cast without requiring the paper supply source, ink or toner supply, or any other similar consumable supply to be changed, assuming a fully printed double sided eighteen (18) inch ballot with a minimum of 20 contests.	DRE	Pass		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
DF1-P3	116	04-Fail	TRUE	TRUE	TRUE	The V-VPAT unit shall provide a "low supply" warning to the election judge to add paper, ink, toner, ribbon or other like supplies. In the event that an election judge is required to change supplies during the process of voting, the voter shall be allowed to reprint and review the paper audit trail without having to re-mark his or her ballot, and the device shall prevent the election judge from seeing any voters' ballots.	DRE	Fail		
DF1-P3	117	zz-Not Applicable	TRUE	TRUE	TRUE	As of March 31, 2008, voting systems submitted for certification shall stop the V-VPAT printer of all forward operations of the DRE if the printer is not working due to paper jams, out of supply of consumables, or other issue which may cause the correct readable printing of information on the V-VPAT record as designed.	DRE	Not Applicable		
DF1-P3	118	01- Pass	TRUE	TRUE	TRUE	The printed information on the printed ballot or verification portion of the V-VPAT device shall contain at least the following items: Name or header information of race, question or issue;	DRE	Pass		
DF1-P3	119	01- Pass	TRUE	TRUE	TRUE	The printed information on the printed ballot or verification portion of the V-VPAT device shall contain at least the following items: Voter's selections for the race information;	DRE	Pass		
DF1-P3	120	01-Pass	TRUE	TRUE	TRUE	The printed information on the printed ballot or verification portion of the V-VPAT device shall contain at least the following items: Write-in candidate's names if selected;	DRE	Pass		
DF1-P3	121	01- Pass	TRUE	TRUE	TRUE	The printed information on the printed ballot or verification portion of the V-VPAT device shall contain at least the following items: Undervote or overvote information – this is in addition to the information on the review screen of the DRE;	DRE	Pass		

227

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
DF1-P3	122	01- Pass	TRUE	TRUE	TRUE	The printed information on the printed ballot or verification portion of the V-VPAT device shall contain at least the following items: Ability to optionally produce a unique serial number (randomized to protect privacy);	DRE	Pass		
DF1-P3	123	01- Pass	TRUE	TRUE	TRUE	The printed information on the printed ballot or verification portion of the V-VPAT device shall contain at least the following items: Identification that the ballot was cancelled or cast.	DRE	Pass		
DF1-P3	124	01- Pass	TRUE	TRUE	TRUE	The V-VPAT shall allow a voter to spoil his or her paper record no more than two (2) times. Upon spoiling, the voter shall be able to modify and verify selections on the DRE without having to reselect all of his or her choices.	DRE	Pass		
DF1-P3	125	01- Pass	TRUE	TRUE	TRUE	Before the voter causes a third and final record to be printed, the voter shall be presented with a warning notice that the selections made on screen shall be final and the voter shall see and verify a printout of his or her vote, but shall not be given additional opportunities to change their vote.	DRE	Pass		
DF1-P3	126	02-Pass Conditional	TRUE	TRUE	TRUE	All V-VPAT components shall be capable of integrating into existing state testing and auditing requirements of the voting system.	DRE	Conditional Pass		
DF1-P3	127	01-Pass	TRUE	TRUE	TRUE	The V-VPAT component should print a barcode with each record that contains the human readable contents of the paper record and digital signature information. The voting system provider shall include documentation of the barcode type, protocol, and/or description of barcode and the method of reading the barcode as applicable to the voting system.	DRE	Pass		
DF1-P3	128	01- Pass	TRUE	TRUE	TRUE	The V-VPAT component shall be designed such that a voter shall not be able to leave the voting area with the paper record.	DRE	Pass		

228

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
DG1-P3	101	01-Pass	TRUE	TRUE	TRUE	Notwithstanding any other provision of this article, each voting system certified by the secretary of state for use in local, state, and federal elections shall have the capability to accept accessible voter interface devices in the voting system configuration to allow the voting system to meet the following minimum standards: The voting system shall provide a method by which electors can confirm any tactile or audio input by audio output using synthetic or recorded human speech.	DRE	Pass		
DG1-P3	102	04-Fail	TRUE	TRUE	TRUE	Notwithstanding any other provision of this article, each voting system certified by the secretary of state for use in local, state, and federal elections shall have the capability to accept accessible voter interface devices in the voting system configuration to allow the voting system to meet the following minimum standards: Any voting system that requires any visual perception shall allow the font size as it appears to the voter to be set from a minimum of fourteen points to a maximum of twenty-four points before the voting system is delivered to the polling place. <input type="checkbox"/> <input type="checkbox"/> A san-serif font of 18 points will allow the most universal access.	DRE	Indeterminate	Category 2 - Questionable interpretation of the requirement	The requirement for font sizes to be set from 14 to 24 points before the system is delivered to the polling place. The rule notes that a san-serif 18 font allows the most universal access. The observation is that the system does not display at 14 by default and that the Judge or voter cannot adjust the font size. The requirement cited does not require a default and does not require that the Judge or voter can adjust the font... Can the system be set during pre election setup to display fonts between 14 and 24 points?
DG1-P3	103	01-Pass	TRUE	TRUE	TRUE	The voting system shall provide audio information, including any audio output using synthetic or recorded human speech or any auditory feedback tones that are important for the use of the audio approach, through at least one mode, by handset or headset, at high volume and shall provide incremental volume control with output amplification up to a level of at least ninety-seven decibel sound pressure level with one incremental level of eighty-nine decibel sound pressure level.	DRE	Pass		

229

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
DG1-P3	104	01-Pass	TRUE	TRUE	TRUE	Notwithstanding any other provision of this article, each voting system certified by the secretary of state for use in local, state, and federal elections shall have the capability to accept accessible voter interface devices in the voting system configuration to allow the voting system to meet the following minimum standards: Audio ballots shall meet the following standards: <input type="checkbox"/> After the initial instruction from an election official, the elector shall be able to independently operate the voter interface device through the final step of casting a ballot without assistance.	DRE	Pass		
DG1-P3	105	01-Pass	TRUE	TRUE	TRUE	Notwithstanding any other provision of this article, each voting system certified by the secretary of state for use in local, state, and federal elections shall have the capability to accept accessible voter interface devices in the voting system configuration to allow the voting system to meet the following minimum standards: Audio ballots shall meet the following standards: <input type="checkbox"/> The elector shall be able to determine the offices for which the elector is allowed to vote and to determine the candidates for each office.	DRE	Pass		
DG1-P3	106	01-Pass	TRUE	TRUE	TRUE	Notwithstanding any other provision of this article, each voting system certified by the secretary of state for use in local, state, and federal elections shall have the capability to accept accessible voter interface devices in the voting system configuration to allow the voting system to meet the following minimum standards: Audio ballots shall meet the following standards: <input type="checkbox"/> The elector shall be able to determine how many candidates may be selected for each office.	DRE	Pass		

230

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
DG1-P3	107	01-Pass	TRUE	TRUE	TRUE	Notwithstanding any other provision of this article, each voting system certified by the secretary of state for use in local, state, and federal elections shall have the capability to accept accessible voter interface devices in the voting system configuration to allow the voting system to meet the following minimum standards: Audio ballots shall meet the following standards: <input type="checkbox"/> The elector shall have the ability to verify that the physical or vocal inputs given to the voting system have selected the candidates that the elector intended to select.	DRE	Pass		
DG1-P3	108	01-Pass	TRUE	TRUE	TRUE	Notwithstanding any other provision of this article, each voting system certified by the secretary of state for use in local, state, and federal elections shall have the capability to accept accessible voter interface devices in the voting system configuration to allow the voting system to meet the following minimum standards: Audio ballots shall meet the following standards: <input type="checkbox"/> The elector shall have the opportunity to input a candidate's name for each office that allows a write-in candidate.	DRE	Pass		
DG1-P3	109	01 - Pass	TRUE	TRUE	TRUE	Notwithstanding any other provision of this article, each voting system certified by the secretary of state for use in local, state, and federal elections shall have the capability to accept accessible voter interface devices in the voting system configuration to allow the voting system to meet the following minimum standards: Audio ballots shall meet the following standards: <input type="checkbox"/> The elector shall be able to review the candidate selections that the elector has made.	DRE	Pass		

231

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
DG1-P3	110	01 - Pass	TRUE	TRUE	TRUE	Notwithstanding any other provision of this article, each voting system certified by the secretary of state for use in local, state, and federal elections shall have the capability to accept accessible voter interface devices in the voting system configuration to allow the voting system to meet the following minimum standards: Audio ballots shall meet the following standards: <input type="checkbox"/> Before casting the ballot, the elector shall have the opportunity to change any selections previously made and confirm a new selection.	DRE	Pass		
DG1-P3	111	01 - Pass	TRUE	TRUE	TRUE	Notwithstanding any other provision of this article, each voting system certified by the secretary of state for use in local, state, and federal elections shall have the capability to accept accessible voter interface devices in the voting system configuration to allow the voting system to meet the following minimum standards: Audio ballots shall meet the following standards: <input type="checkbox"/> The voting system shall communicate to the elector the fact that the elector has failed to vote for an office or has failed to vote the number of allowable candidates for an office and require the elector to confirm his or her intent to undervote before casting the ballot.	DRE	Pass		
DG1-P3	112	zz-Not Applicable	TRUE	TRUE	TRUE	Notwithstanding any other provision of this article, each voting system certified by the secretary of state for use in local, state, and federal elections shall have the capability to accept accessible voter interface devices in the voting system configuration to allow the voting system to meet the following minimum standards: Audio ballots shall meet the following standards: <input type="checkbox"/> The voting system shall warn the elector of the consequences of overvoting for an office.	DRE	Not Applicable		

232

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
DG1-P3	113	04-Fail	TRUE	TRUE	TRUE	Notwithstanding any other provision of this article, each voting system certified by the secretary of state for use in local, state, and federal elections shall have the capability to accept accessible voter interface devices in the voting system configuration to allow the voting system to meet the following minimum standards: Audio ballots shall meet the following standards: <input type="checkbox"/> The elector shall have the opportunity to review the elector's write-in input to the voter interface device, edit that input, and confirm that the edits meet the elector's intent.	DRE	Fail		
DG1-P3	114	01- Pass	TRUE	TRUE	TRUE	Notwithstanding any other provision of this article, each voting system certified by the secretary of state for use in local, state, and federal elections shall have the capability to accept accessible voter interface devices in the voting system configuration to allow the voting system to meet the following minimum standards: Audio ballots shall meet the following standards: <input type="checkbox"/> The voting system shall require a clear, identifiable action from the elector to cast the ballot. The voting system shall explain to the elector how to take this action so that the elector has minimal risk of taking the action accidentally, but when the elector intends to cast the ballot, the action can be easily performed.	DRE	Pass		

233

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
DG1-P3	115	01- Pass	TRUE	TRUE	TRUE	Notwithstanding any other provision of this article, each voting system certified by the secretary of state for use in local, state, and federal elections shall have the capability to accept accessible voter interface devices in the voting system configuration to allow the voting system to meet the following minimum standards: Audio ballots shall meet the following standards: After the ballot is cast, the voting system shall confirm to the elector that the ballot has been cast and the elector's process of voting is complete.	DRE	Pass		
DG1-P3	116	01-Pass	TRUE	TRUE	TRUE	Notwithstanding any other provision of this article, each voting system certified by the secretary of state for use in local, state, and federal elections shall have the capability to accept accessible voter interface devices in the voting system configuration to allow the voting system to meet the following minimum standards: Audio ballots shall meet the following standards: After the ballot is cast, the voting system shall prevent the elector from modifying the ballot cast or voting another ballot.	DRE	Pass		
DG1-P3	117	01-Pass	TRUE	TRUE	TRUE	If a political subdivision acquires a new voting system, the system must be accessible to persons with physical, cultural/educational, mental/cognitive disabilities and provide the voter in a manner that provides the same opportunity for access and participation (including privacy and independence) as for other voters.	DRE	Indeterminate	Category 4 - Insufficient description to support the finding and status	Although there is abundant evidence that the system can accommodate a wide range of physical disabilities. What steps were taken and what evidence exists that the system provides accommodations for "cultural/educational, mental/cognitive disabilities"?

234

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
DG1-P3	118	01-Pass	TRUE	TRUE	TRUE	Notwithstanding any other provision of this article, each voting system certified by the secretary of state for use in local, state, and federal elections shall have the capability to accept accessible voter interface devices in the voting system configuration to allow the voting system to meet the following minimum standards: The voting system shall provide a tactile input or audio input device, or both.	DRE	Pass		
DG1-P3	119	01-Pass	TRUE	TRUE	TRUE	Notwithstanding any other provision of this article, each voting system certified by the secretary of state for use in local, state, and federal elections shall have the capability to accept accessible voter interface devices in the voting system configuration to allow the voting system to meet the following minimum standards: If the voting system can exceed one hundred twenty decibel sound pressure level, a mechanism shall be included to reset the volume automatically to the voting system's default volume level after every use, such as when the handset is replaced, but not before. Universal precautions in the use and sharing of headsets should be followed.	DRE	Pass		
DG1-P3	120	zz-Not Applicable	TRUE	TRUE	TRUE	Notwithstanding any other provision of this article, each voting system certified by the secretary of state for use in local, state, and federal elections shall have the capability to accept accessible voter interface devices in the voting system configuration to allow the voting system to meet the following minimum standards: If sound cues and audible information such as "beeps" are used, simultaneous corresponding visual cues and information shall be provided.	DRE	Not Applicable		

235

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
DG1-P3	121	01-Pass	TRUE	TRUE	TRUE	If a non-audio approach is used in conjunction with an audio counterpart, any spoken text shall also be presented on screen. A graphic representation of a ballot with a check, "X," etc. beside a candidate or proposition is allowed.	DRE	Pass		
DG1-P3	122	01-Pass	TRUE	TRUE	TRUE	Notwithstanding any other provision of this article, each voting system certified by the secretary of state for use in local, state, and federal elections shall have the capability to accept accessible voter interface devices in the voting system configuration to allow the voting system to meet the following minimum standards: Controls and mechanisms shall be operable with one hand, including with a closed fist, and operable without tight grasping, pinching, or twisting of the wrist.	DRE	Pass		
DG1-P3	123	01-Pass	TRUE	TRUE	TRUE	Notwithstanding any other provision of this article, each voting system certified by the secretary of state for use in local, state, and federal elections shall have the capability to accept accessible voter interface devices in the voting system configuration to allow the voting system to meet the following minimum standards: The force required to operate or activate the controls may not exceed five pounds of force.	DRE	Pass		
DG1-P3	124	01-Pass	TRUE	TRUE	TRUE	If a forward approach by a person in a wheelchair to a voting system is necessary, the maximum high-forward reach allowed shall be 48 inches (1220 mm) and the minimum low-forward reach shall be 15 inches (380 mm). If the high-forward reach is over an obstruction, reach and clearances shall be as shown in the Figure 1., or otherwise in accordance with the Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities ("ADAAG"), as written at the time the system is certified for use in the state of Colorado;	DRE	Pass		

236

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
DG1-P3	125	01-Pass	TRUE	TRUE	TRUE	If a side or parallel approach by a person in a wheelchair to a voting system is necessary, the maximum side reach allowed shall be 54 inches (1370 mm) and the low side reach shall be no less than 9 inches (230 mm) above the floor. If the side reach is over an obstruction, reach and clearances shall be as shown in the Figure 2, or otherwise in accordance with the ADAAG, as written at the time the system is certified for use in the state of Colorado.	DRE	Pass		
DG1-P3	126	01-Pass	TRUE	TRUE	TRUE	The highest operable part of controls, dispensers, receptacles, and other operable equipment shall be placed within at least one of the reach ranges outlined in paragraphs (15) and (16) of this subsection.	DRE	Pass		
DG1-P3	127	01-Pass	TRUE	TRUE	TRUE	The voting system shall provide a method by which voters can confirm any tactile or audio input by having the capability of audio output using synthetic or recorded human speech, which is reasonably phonetically accurate.	DRE	Pass		
DG1-P3	128	01-Pass	TRUE	TRUE	TRUE	Notwithstanding any other provision of this article, each voting system certified by the secretary of state for use in local, state, and federal elections shall have the capability to accept accessible voter interface devices in the voting system configuration to allow the voting system to meet the following minimum standards: Any operable controls on the input device that are needed by electors who are visually impaired shall be indicated in braille or otherwise discernible tactilely without actuating the keys.	DRE	Pass		

237

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
DG1-P3	129	01-Pass	TRUE	TRUE	TRUE	Notwithstanding any other provision of this article, each voting system certified by the secretary of state for use in local, state, and federal elections shall have the capability to accept accessible voter interface devices in the voting system configuration to allow the voting system to meet the following minimum standards: Voting booths shall have voting controls at a minimum height of thirty-six inches above the finished floor with a minimum knee clearance of twenty-seven inches high, thirty inches wide, and nineteen inches deep, or the accessible voter interface devices shall be designed so as to allow their use on top of a table to meet such requirements. Tabletop installations shall ensure adequate privacy.	DRE	Pass		
DG1-P3	130	04-Fail	TRUE	TRUE	TRUE	Notwithstanding any other provision of this article, each voting system certified by the secretary of state for use in local, state, and federal elections shall have the capability to accept accessible voter interface devices in the voting system configuration to allow the voting system to meet the following minimum standards: Devices providing audio and visual access shall be able to work both separately and simultaneously.	DRE	Fail		

238

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
DG1-P3	131	04-Fail	TRUE	TRUE	TRUE	Notwithstanding any other provision of this article, each voting system certified by the secretary of state for use in local, state, and federal elections shall have the capability to accept accessible voter interface devices in the voting system configuration to allow the voting system to meet the following minimum standards: If a nonaudio access approach is provided, the voting system may not require color perception. The voting system shall use black text or graphics, or both, on white background or white text or graphics, or both, on black background, unless the secretary of state approves other high-contrast color combinations that do not require color perception.	DRE	Fail		
DG1-P3	132	01-Pass	TRUE	TRUE	TRUE	Notwithstanding any other provision of this article, each voting system certified by the secretary of state for use in local, state, and federal elections shall have the capability to accept accessible voter interface devices in the voting system configuration to allow the voting system to meet the following minimum standards: For voice signals transmitted to the elector, the voting system shall provide a gain adjustable up to a minimum of twenty decibels with at least one intermediate step of twelve decibels.	DRE	Pass		
DG1-P3	133	zz-Not Applicable	TRUE	TRUE	TRUE	All DRE voting devices shall use touch screen technology or other technology providing visual ballot display and selection. The voting system provider shall include documentation concerning the use of touch screen or other display and selection technology, including but not limited to: Technical documentation describing the nature and sensitivity of the tactile device (if the system uses touch screen technology);	DRE	Not Applicable		

239

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
DG1-P3	134	01-Pass	TRUE	TRUE	TRUE	The voting system shall contain a control subsystem that consists of the physical devices and software that accomplish and validate the following operations: Voting system Preparation - The control subsystem shall encompass the hardware and software required to prepare remote location voting devices and memory devices for election use. Remote site preparation includes all operations necessary to install ballot displays, software, and memory devices in each voting device. The control subsystem shall be designed in such a manner as to facilitate the automated validation of ballot and software installation and to detect errors arising from their incorrect selection or improper installation.	DRE	Pass		
DG1-P3	135	01-Pass	TRUE	TRUE	TRUE	Specific minimum accessibility requirements include those specified in section §1-5-704 C.R.S., Secretary of State Rule 34, Rule 35 and the following: Buttons and controls shall be distinguishable by both shape and color.	DRE	Pass		
DG1-P3	136	04-Fail	TRUE	TRUE	TRUE	Specific minimum accessibility requirements include those specified in section §1-5-704 C.R.S., Secretary of State Rule 34, Rule 35 and the following: Audio ballots shall meet the following standards: The voting system shall allow the voter to pause and resume the audio presentation.	DRE	Fail		
DG1-P3	137	04-Fail	TRUE	TRUE	TRUE	Specific minimum accessibility requirements include those specified in section §1-5-704 C.R.S., Secretary of State Rule 34, Rule 35 and the following: Audio ballots shall meet the following standards: The audio system shall allow voters to control within reasonable limits, the rate of speech.	DRE	Fail		

240

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
DG1-P3	138	01-Pass	TRUE	TRUE	TRUE	Specific minimum accessibility requirements include those specified in section §1-5-704 C.R.S., Secretary of State Rule 34, Rule 35 and the following: No voting system or any of its accessible components shall require voter speech for its operation.	DRE	Pass		
DG1-P3	139	zz-Not Applicable	TRUE	TRUE	TRUE	Specific minimum accessibility requirements include those specified in section §1-5-704 C.R.S., Secretary of State Rule 34, Rule 35 and the following: All Touchscreen technology shall be tested for use of fingers as well as non-human touch that is both wet and dry.	DRE	Not Applicable		
DG1-P3	140	01-Pass	TRUE	TRUE	TRUE	Specific minimum accessibility requirements include those specified in section §1-5-704 C.R.S., Secretary of State Rule 34, Rule 35 and the following: Voting systems shall include at least the ability to activate and navigate by means of push buttons, dials, wheels, keypads, and/or touch screens. By March 31, 2008, voting systems submitted for certification shall also include any form of either switches, sip and puff devices, or additional blink control devices.	DRE	Pass		
DG1-P3	141	04-Fail	TRUE	TRUE	TRUE	Specific minimum accessibility requirements include those specified in section §1-5-704 C.R.S., Secretary of State Rule 34, Rule 35 and the following: Adjustability of color settings, screen contrasts and/or screen angles/tilt may be made by either the poll worker or voter if the system uses a display screen. A minimum of two color settings, two contrast settings and two angles shall be available for all display screens.	DRE	Fail		
DH1-P3	101	01-Pass	TRUE	TRUE	TRUE	The voting system shall include hardware and software to enable the closing of the voting location and disabling acceptance of ballots on all vote tabulation devices to allow for the following: Allow for multiple copies of the unofficial results at the close of the election.	DRE	Pass		

241

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
DH1-P3	102	01-Pass	TRUE	TRUE	TRUE	The voting system shall include hardware and software to enable the closing of the voting location and disabling acceptance of ballots on all vote tabulation devices to allow for the following: Readings of the public counter and/or protective counter shall become a part of the paper audit record upon disabling the voting system to prevent further voting.	DRE	Pass		
DH1-P3	103	01-Pass	TRUE	TRUE	TRUE	The voting system shall include hardware and software to enable the closing of the voting location and disabling acceptance of ballots on all vote tabulation devices to allow for the following: Ability to print an Abstract of the count of votes to contain: Names of the offices.	DRE	Pass		
DH1-P3	104	01-Pass	TRUE	TRUE	TRUE	The voting system shall include hardware and software to enable the closing of the voting location and disabling acceptance of ballots on all vote tabulation devices to allow for the following: Ability to print an Abstract of the count of votes to contain: Names of the candidates and party when applicable.	DRE	Pass		
DH1-P3	105	01-Pass	TRUE	TRUE	TRUE	The voting system shall include hardware and software to enable the closing of the voting location and disabling acceptance of ballots on all vote tabulation devices to allow for the following: Ability to print an Abstract of the count of votes to contain: Ballot titles.	DRE	Pass		
DH1-P3	106	04-Fail	TRUE	TRUE	TRUE	The voting system shall include hardware and software to enable the closing of the voting location and disabling acceptance of ballots on all vote tabulation devices to allow for the following: Ability to print an Abstract of the count of votes to contain: Submission clauses of all initiated, referred or other ballot issues or questions.	DRE	Indeterminate	Category 2 - Questionable interpretation of the requirement	Must Abstract reports and all required content for Abstract reports be printed by precinct devices?

242

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
DH1-P3	107	01-Pass	TRUE	TRUE	TRUE	The voting system shall include hardware and software to enable the closing of the voting location and disabling acceptance of ballots on all vote tabulation devices to allow for the following: Ability to print an Abstract of the count of votes to contain: The number of votes counted for or against each candidate or ballot issue.	DRE	Pass		
DH1-P3	108	01-Pass	TRUE	TRUE	TRUE	The voting system shall include hardware and software to enable the closing of the voting location and disabling acceptance of ballots on all vote tabulation devices to allow for the following: Abstract shall include a Judge's certificate and statement that contains: <input type="checkbox"/> Date of election (day, month and year);	DRE	Pass		
DH1-P3	109	01-Pass	TRUE	TRUE	TRUE	The voting system shall include hardware and software to enable the closing of the voting location and disabling acceptance of ballots on all vote tabulation devices to allow for the following: Abstract shall include a Judge's certificate and statement that contains: <input type="checkbox"/> Precinct Number (ten digit format).	DRE	Pass		
DH1-P3	110	01-Pass	TRUE	TRUE	TRUE	The voting system shall include hardware and software to enable the closing of the voting location and disabling acceptance of ballots on all vote tabulation devices to allow for the following: Abstract shall include a Judge's certificate and statement that contains: County or Jurisdiction Name.	DRE	Pass		
DH1-P3	111	04-Fail	TRUE	TRUE	TRUE	The voting system shall include hardware and software to enable the closing of the voting location and disabling acceptance of ballots on all vote tabulation devices to allow for the following: Abstract shall include a Judge's certificate and statement that contains: State of Colorado.	DRE	Fail		

243

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
DH1-P3	112	01-Pass	TRUE	TRUE	TRUE	The voting system shall include hardware and software to enable the closing of the voting location and disabling acceptance of ballots on all vote tabulation devices to allow for the following: <input type="checkbox"/> Abstract shall include a Judge's certificate and statement that contains: <input type="checkbox"/> Count of votes as indicated in this section.	DRE	Pass		
DH1-P3	113	04-Fail	TRUE	TRUE	TRUE	The voting system shall include hardware and software to enable the closing of the voting location and disabling acceptance of ballots on all vote tabulation devices to allow for the following: Abstract shall include a Judge's certificate and statement that contains: Area for judge's signature with the words similar to: "Certified by us", and "Election Judges". Space should allow for a minimum of two signatures.	DRE	Fail		
DH1-P3	114	01-Pass	TRUE	TRUE	TRUE	The voting system shall include hardware and software to enable the closing of the voting location and disabling acceptance of ballots on all vote tabulation devices to allow for the following: Machine-generated paper record of the time the voting system was closed.	DRE	Pass		
DH1-P3	115	04-Fail	TRUE	TRUE	TRUE	The voting system shall include hardware and software to enable the closing of the voting location and disabling acceptance of ballots on all vote tabulation devices to allow for the following: Votes counted by a summary of the voting location, and by individual precincts.	DRE	Fail		
DH2-P3	201	01-Pass	TRUE	TRUE	TRUE	The voting system shall include hardware and software to enable the closing of the voting location and disabling acceptance of ballots on all vote tabulation devices to allow for the following: Abstract shall include a Judge's certificate and statement that contains: County or Jurisdiction Name.	PCOS	Pass		

244

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
DH2-P3	202	01-Pass	TRUE	TRUE	TRUE	The voting system shall include hardware and software to enable the closing of the voting location and disabling acceptance of ballots on all vote tabulation devices to allow for the following: Allow for multiple copies of the unofficial results at the close of the election.	PCOS	Pass		
DH2-P3	203	04-Fail	TRUE	TRUE	TRUE	The voting system shall include hardware and software to enable the closing of the voting location and disabling acceptance of ballots on all vote tabulation devices to allow for the following: Votes counted by a summary of the voting location, and by individual precincts.	PCOS	Fail		
DH2-P3	204	04-Fail	TRUE	TRUE	TRUE	The voting system shall include hardware and software to enable the closing of the voting location and disabling acceptance of ballots on all vote tabulation devices to allow for the following: Abstract shall include a Judge's certificate and statement that contains: Area for judge's signature with the words similar to: "Certified by us", and "Election Judges". Space should allow for a minimum of two signatures.	PCOS	Fail		
DH2-P3	205	01-Pass	TRUE	TRUE	TRUE	The voting system shall include hardware and software to enable the closing of the voting location and disabling acceptance of ballots on all vote tabulation devices to allow for the following: Abstract shall include a Judge's certificate and statement that contains: Count of votes as indicated in this section.	PCOS	Pass		
DH2-P3	206	01-Pass	TRUE	TRUE	TRUE	The voting system shall include hardware and software to enable the closing of the voting location and disabling acceptance of ballots on all vote tabulation devices to allow for the following: Readings of the public counter and/or protective counter shall become a part of the paper audit record upon disabling the voting system to prevent further voting.	PCOS	Pass		

245

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
DH2-P3	207	01-Pass	TRUE	TRUE	TRUE	The voting system shall include hardware and software to enable the closing of the voting location and disabling acceptance of ballots on all vote tabulation devices to allow for the following: Abstract shall include a Judge's certificate and statement that contains: Precinct Number (ten digit format).	PCOS	Pass		
DH2-P3	208	01-Pass	TRUE	TRUE	TRUE	The voting system shall include hardware and software to enable the closing of the voting location and disabling acceptance of ballots on all vote tabulation devices to allow for the following: Abstract shall include a Judge's certificate and statement that contains: Date of election (day, month and year);	PCOS	Pass		
DH2-P3	209	01-Pass	TRUE	TRUE	TRUE	The voting system shall include hardware and software to enable the closing of the voting location and disabling acceptance of ballots on all vote tabulation devices to allow for the following: Ability to print an Abstract of the count of votes to contain: The number of votes counted for or against each candidate or ballot issue.	PCOS	Pass		
DH2-P3	210	04-Fail	TRUE	TRUE	TRUE	The voting system shall include hardware and software to enable the closing of the voting location and disabling acceptance of ballots on all vote tabulation devices to allow for the following: Ability to print an Abstract of the count of votes to contain: Submission clauses of all initiated, referred or other ballot issues or questions.	PCOS	Indeterminate	Category 2 - Questionable interpretation of the requirement	Must Abstract reports and all required content for Abstract reports be printed by precinct devices?
DH2-P3	211	01-Pass	TRUE	TRUE	TRUE	The voting system shall include hardware and software to enable the closing of the voting location and disabling acceptance of ballots on all vote tabulation devices to allow for the following: Ability to print an Abstract of the count of votes to contain: Ballot titles.	PCOS	Pass		

246

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
DH2-P3	212	01-Pass	TRUE	TRUE	TRUE	The voting system shall include hardware and software to enable the closing of the voting location and disabling acceptance of ballots on all vote tabulation devices to allow for the following: Ability to print an Abstract of the count of votes to contain: Names of the offices.	PCOS	Pass		
DH2-P3	213	01-Pass	TRUE	TRUE	TRUE	The voting system shall include hardware and software to enable the closing of the voting location and disabling acceptance of ballots on all vote tabulation devices to allow for the following: Machine-generated paper record of the time the voting system was closed.	PCOS	Pass		
DH2-P3	214	01-Pass	TRUE	TRUE	TRUE	The voting system shall include hardware and software to enable the closing of the voting location and disabling acceptance of ballots on all vote tabulation devices to allow for the following: Ability to print an Abstract of the count of votes to contain: Names of the candidates and party when applicable.	PCOS	Pass		
DH2-P3	215	04-Fail	TRUE	TRUE	TRUE	The voting system shall include hardware and software to enable the closing of the voting location and disabling acceptance of ballots on all vote tabulation devices to allow for the following: Abstract shall include a Judge's certificate and statement that contains: State of Colorado.	PCOS	Fail		
EA1-P3	101	01-Pass	TRUE	TRUE	TRUE	The Voting system shall provide for appropriately authorized operators to conduct the post election audit as required herein.	DRE	Pass		
EA2-P3	201	01-Pass	TRUE	TRUE	TRUE	The Voting system shall provide for appropriately authorized operators to conduct the post election audit as required herein.	PCOS	Pass		
EA3-P3	301	01-Pass	TRUE	TRUE	TRUE	The Voting system shall provide for appropriately authorized operators to conduct the post election audit as required herein.	CCOS	Pass		
EA4-P3	401	01-Pass	TRUE	TRUE	TRUE	The Voting system shall provide for appropriately authorized operators to conduct the post election audit as required herein.	Software	Pass		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
EB1-P3	101	02-Pass Conditional	TRUE	TRUE	TRUE	The permanent paper record produced by the electronic or electromechanical voting system shall be available as an official record for any recount conducted for any election in which the system was used.	DRE	Conditional Pass		
EB1-P3	102	01-Pass	TRUE	TRUE	TRUE	The Voting system shall provide for appropriately authorized operators to conduct an election and meet additional requirements as identified in this section for procedures for voting, auditing information, inventory control, counting ballots, opening and closing polls, recounts, reporting, and accumulating results as required herein; All optical scan tabulation machines to be used in the recount must be tested prior to the recount, utilizing the procedures set forth in this section. Prior to the recount, the canvass board shall choose at random and test Voting Devices and precinct(s) to be utilized as a test deck for purposes of section 1-10.5-102. The purpose of a test deck is to assure the tabulation machines are counting properly. The precinct chosen shall contain at least 50 ballots. A hand tally shall be conducted of the selected precinct or of a minimum of fifty ballots contained within the selected precinct. A blank prom cartridge, rom cartridge, or memory card shall be utilized for the test deck. The ballots from the selected	DRE	Pass		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
EB2-P3	201	01-Pass	TRUE	TRUE	TRUE	The Voting system shall provide for appropriately authorized operators to conduct an election and meet additional requirements as identified in this section for procedures for voting, auditing information, inventory control, counting ballots, opening and closing polls, recounts, reporting, and accumulating results as required herein; All optical scan tabulation machines to be used in the recount must be tested prior to the recount, utilizing the procedures set forth in this section. Prior to the recount, the canvass board shall choose at random and test Voting Devices and precinct(s) to be utilized as a test deck for purposes of section 1-10.5-102. The purpose of a test deck is to assure the tabulation machines are counting properly. The precinct chosen shall contain at least 50 ballots. A hand tally shall be conducted of the selected precinct or of a minimum of fifty ballots contained within the selected precinct. A blank prom cartridge, rom cartridge, or memory card shall be utilized for the test deck. The ballots from the selected	PCOS	Pass		
EB2-P3	202	01-Pass	TRUE	TRUE	TRUE	The permanent paper record produced by the electronic or electromechanical voting system shall be available as an official record for any recount conducted for any election in which the system was used.	PCOS	Pass		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
EB3-P3	301	01-Pass	TRUE	TRUE	TRUE	The Voting system shall provide for appropriately authorized operators to conduct an election and meet additional requirements as identified in this section for procedures for voting, auditing information, inventory control, counting ballots, opening and closing polls, recounts, reporting, and accumulating results as required herein; All optical scan tabulation machines to be used in the recount must be tested prior to the recount, utilizing the procedures set forth in this section. Prior to the recount, the canvass board shall choose at random and test Voting Devices and precinct(s) to be utilized as a test deck for purposes of section 1-10.5-102. The purpose of a test deck is to assure the tabulation machines are counting properly. The precinct chosen shall contain at least 50 ballots. A hand tally shall be conducted of the selected precinct or of a minimum of fifty ballots contained within the selected precinct. A blank prom cartridge, rom cartridge, or memory card shall be utilized for the test deck. The ballots from the selected	CCOS	Pass		
EB3-P3	302	01-Pass	TRUE	TRUE	TRUE	The permanent paper record produced by the electronic or electromechanical voting system shall be available as an official record for any recount conducted for any election in which the system was used.	CCOS	Pass		
EB3-P3	303	04-Fail	TRUE	TRUE	TRUE	Sequence of Resolution Procedures for Central Count Optical Scan Procedures are (1) A zero tape shall be run indicating no votes cast or counted before the counting begins.	CCOS	Fail		

Test	Number	Test Status	First Review	Second Review	Supervisor Review	Requirement Text	Equipment Type	Auditor's Test Status	Audit Finding Category	Audit Finding Comment
EB4-P3	401	01-Pass	TRUE	TRUE	TRUE	The Voting system shall provide for appropriately authorized operators to conduct an election and meet additional requirements as identified in this section for procedures for voting, auditing information, inventory control, counting ballots, opening and closing polls, recounts, reporting, and accumulating results as required herein. All optical scan tabulation machines to be used in the recount must be tested prior to the recount, utilizing the procedures set forth in this section. Prior to the recount, the canvass board shall choose at random and test Voting Devices and precinct(s) to be utilized as a test deck for purposes of section 1-10.5-102. The purpose of a test deck is to assure the tabulation machines are counting properly. The precinct chosen shall contain at least 50 ballots. A hand tally shall be conducted of the selected precinct or of a minimum of fifty ballots contained within the selected precinct. A blank prom cartridge, rom cartridge, or memory card shall be utilized for the test deck. The ballots from the selected	Software	Pass		
EC3-P3	302	04-Fail	TRUE	TRUE	TRUE	Recount Procedures for Optical Scan for Central Count Optical Scan Procedures include; <input type="checkbox"/> (1) Optical scan equipment must be set to consistent sensitivity standards for each system type, must be tested prior to the recount, and shall be programmed to sort undervotes for the individual race(s), issue(s) or question(s) being recounted.	CCOS	Fail		