WYLE REPORT NO. T56285-01

APPENDIX A.3

FUNCTIONAL CONFIGURATION AUDIT

TEST CASE PROCEDURE SPECIFICATIONS (T56285-20, T56285-30, T56285-40)

185 pages including cover page

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PRE-VOTING TEST SUITE
TEST CASE PROCEDURE SPECIFICATION
FOR
UNISYN VOTING SOLUTIONS, INC.
OPENELECT VOTING SYSTEM, VERSION 1.0

Prepared by:

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NVLAP LAB CODE 200771-0

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1.0 INTRODUCTION

The purpose of the Test Case Procedure Specification is to document the "Pre-Voting" functionality of the Unisyn OpenElect Voting System (OVS), version 1.0. As part of the Functional Configuration Audit, Wyle must verify that the OVS performs as documented in the Unisyn supplied Technical Data Package submitted to Wyle for the test campaign. Wyle must also validate that the OVS meets the requirements of the 2005 EAC Voluntary Voting Systems Guidelines (VVSG). As part of the Functional Configuration Audit, Wyle qualified personnel will use this document as the procedure to execute the entire "Pre-Voting" test suite.

1.1 Scope

The scope of this procedure will focus on all activities performed to the point of loading the election data on a transport media. These activities include verifying roles, user administration, database administration, defining the political subdivisions, defining election types, defining voting variations, defining the ballot contents, audio ballot definition, election definition loading, auditing election creation process, producing pre- election reports, adding to existing elections, updating existing elections, modifying ballot styles, verifying alternative language translations, and loading an election on precinct count devices. The specific applications of the OVS used in this test suite are:

- Ballot Layout Manager (BLM)
- Election Manager (EM)
- Software Server (SS)
- Election Server (ES)

Election Manager provides some functionality that is considered "Post-Voting" functions. These include TM maintenance and upload of the OpenElect Voting Optical Scan (OVO) machine logs. These functions will be tested in the Post-Voting Test Suite.

1.2 References

The documents listed below were used in the development of the Test Plan and are utilized to perform certification testing.

- Election Assistance Commission 2005 Voluntary Voting System Guidelines, Volume I, Version 1.0, "Voting System Performance Guidelines", and Volume II, Version 1.0, "National Certification Testing Guidelines", dated December 2005
- Election Assistance Commission Testing and Certification Program Manual, Version 1.0, effective date January 1, 2007
- Election Assistance Commission Voting System Test laboratory Program Manual, Version 1.0, effective date July 2008
- National Voluntary Laboratory Accreditation Program NIST Handbook 150, 2006 Edition, "NVLAP Procedures and General Requirements (NIST Handbook 150)", dated February 2006

1.0 INTRODUCTION (continued)

1.2 References (continued)

- National Voluntary Laboratory Accreditation Program NIST Handbook 150-22, 2008 Edition, "Voting System Testing (NIST Handbook 150-22)", dated May 2008
- United States 107th Congress Help America Vote Act (HAVA) of 2002 (Public Law 107-252), dated October 2002
- Wyle Laboratories' Test Guidelines Documents: EMI-001A, "Wyle Laboratories' Test Guidelines for Performing Electromagnetic Interference (EMI) Testing", and EMI-002A, "Test Procedure for Testing and Documentation of Radiated and Conducted Emissions Performed on Commercial Products"
- Wyle Laboratories' Quality Assurance Program Manual, Revision 4
- ANSI/NCSL Z540-1, "Calibration Laboratories and Measuring and Test Equipment, General Requirements"
- ISO 10012-1, "Quality Assurance Requirements for Measuring Equipment"
- EAC Requests for Interpretation (listed on www.eac.gov)
- EAC Notices of Clarification (listed on www.eac.gov)

1.3 Terms and Abbreviations

The terms and abbreviations relevant to the test campaign are described in Table 1-1, below.

Table 1-1 Terms and Abbreviations

Term	Abbreviation	Definition
Ballot Layout Manager	BLM	Unisyn OVS application used to layout ballot information.
Commercial Off the Shelf	COTS	---
Direct Recording Electronic	DRE	---
United States Election Assistance Commission	EAC	Commission created per the Help America Vote Act of 2002, assigned the responsibility for setting voting system standards and providing for the voluntary testing and certification of voting systems.
Election Manager	EM	Utilizes the election definition file from the Ballot Layout Manager, adds jurisdiction voting device specific options and produces the CD used to load the election onto the voting devices and OVCS.
Election Management System	EMS	Within the OpenElect system, the EMS equivalent is OCS.

1.0 INTRODUCTIONS (continued)

1.3 Terms and Abbreviations (continued)

Table 1-1 Terms and Abbreviations (continued)

Election Server	ES	A component of the OCS, the ES updates the system clock and downloads new Election data to the voting devices prior to each election, typically at the warehouse.
Equipment Under Test	EUT	---
Functional Configuration Audit	FCA	Exhaustive verification of every system function and combination of functions cited in the manufacturer's documentation.
OpenElect Central Suite	OCS	Set of applications supplied by Unisyn to run at the Election Headquarters to support elections on the OVO, OVI, and OVCS systems. Includes: allot Layout Manager, Election Manager, Election Server, Tabulator Client, Tabulator Server and Tabulator Reports. In addition, the OCS includes the Software Server (SS) system for updating and validating OVO and OVI (voting device) software.
OpenElect Voting Device	OVD	OVD refers to the OVO, OVI, and OVCS hardware components of the OpenElect Voting System.
OpenElect Voting Interface	OVI	The OVI is an accessible voting device designed to accommodate voters with disabilities, and may also be used for Early Voting.
OpenElect Voting Optical Scan	OVO	The OVO is a ballot scanning and tabulation device which is located at a precinct and may also be used for Early Voting purposes.
OpenElect Voting System	OVS	The OVS is a voting system which is comprised of the OVS suite of software applications, and the OVO and OVI client machines used by voters to produce and cast ballots.
Software Server	SS	The SS application is used for the updating and validation of Certified Software Releases which are installed on OVS client machines.

1.4 Relationship to Other Procedures

The Pre-Voting Test Case Procedure Specification is the first procedure to be executed as part of the FCA. No other test procedures need to be run concurrent with this procedure. This procedure will supply election data, pre-election reports, ballots, audio ballots, and access password information to the Voting Test Case Procedure. This procedure will also supply the election definition to the Post-Voting for tabulation functions.

2.0 DETAILS

The following subsections describe the requirements and sequence that the individual test cases will be run in to facilitate the creation and execution of an election to the point of loading transport media.

2.0 DETAILS (continued)

2.1 Inputs, Outputs, and Special Requirements

Input data will be entered into the OCS using both equivalence partitioning and boundary value testing. For each data entry point, an entry will be made for both invalid and valid data. For data entry points that support a range of data, an entry will be made below the range, within the range, and outside the range to test minimum and maximum values supported. The first Run in the Pre-Voting Test Suite will only input valid data and produce election supplies and an election database that will be the starting point for each downstream application (i.e. BLM to EM to ES).

The inputting of invalid data and data outside boundary ranges will generate error conditions. During the execution of this entire test suite Wyle qualified personnel are to pay specific attention to the following error and privacy requirements:

Table 2-1 Error and Privacy Requirements

Section		Requirement
VI-2.1.3	a	Restoration of the device to the operating condition existing immediately prior to an error or failure, without loss or corruption of voting data previously stored in the device.
	b	Resumption of normal operation following the correction of a failure in a memory component, or in a data processing component, including the central processing unit.
	c	Recovery from any other external condition that causes equipment to become inoperable, provided that catastrophic electrical or mechanical damage due to external phenomena has not occurred.
VI-2.1.4	f	Protection against any attempt at improper data entry or retrieval.
VI-2.1.5		System's characteristics documented in sufficient detail for accredited test labs and system users to evaluate the adequacy of the system's audit trail.
VI-2.1.5.1		Audit records are prepared for all phases of election operations performed using devices controlled by the jurisdiction or its contractors. (Includes ballot preparation, election definition, system readiness tests, voting, and ballot-counting operations).
VI-2.1.5.1.b	i	Generation, storage and reporting of all error messages as they occur to the user.
	ii	All error messages requiring intervention by an operator or precinct official are displayed or printed unambiguously in easily understood language text, or by means of other suitable visual indicators.
	iii	System use of numerical error codes for trained technician maintenance or repair containing the text corresponding to the code is self-contained, or affixed inside the unit device.
	iv	All error messages written clearly.
	v	The message cue for all systems shall clearly state the action to be performed in the event that voter or operator response is required.
	vi	That an erroneous response would not lead to irreversible error.
	vii	Nested error conditions are corrected in a controlled sequence such that system status shall be restored to the initial state existing before the first error occurred.
VI-2.1.5.1c	i	The display and report of critical status messages use unambiguous indicators or English language
VI-2.2.3	a	A detailed work plan or other documentation providing a schedule and steps for the software and ballot installation, which includes a table outlining the key dates, events and deliverables.

2.0 DETAILS (continued)

2.1 Inputs, Outputs, and Special Requirements (continued)

Table 2-1 Error and Privacy Requirements (continued)

VI-2.3.1.2	f	All paper-based precinct count equipment shall include a means of identifying device failure and corrective action needed.
VI-2.3.3.1	b	All systems shall protect the secrecy of the vote such that the system cannot reveal any information about how a particular voter voted, except as otherwise required by individual State law.
VI-2.3.3.2	d	All paper-based systems shall protect the secrecy of the vote throughout the process.
VI – 4.1.3.1	a c e	Voting systems shall accurately record all election management data entered by the user, including election officials or their designees. For recording accuracy, all systems shall: Record every entry made by the user. Verify the correctness of detection of the user selections and the addition of the selections correctly to memory. Verify the correctness of detection of data entered directly by the user and the addition of the selections correctly to memory.
VI – 7.2.1.1	c	When the provision of accessibility involves an alternative format for ballot presentation, then all information presented to voters including instructions, warnings, error and other messages, and ballot choices shall be presented in that alternative format.
VI – 7.9.5	a	Voter privacy shall be preserved during the process of recording, verifying and auditing his or her ballot selections.

2.2 Sequence

The sequence for this test suite is broken down into "Runs". A run is a set of test cases which are executed in a logical order designed to exercise specific functionality of the OCS. The test suite contains a total of 38 runs. The runs can be broken down by the following:

- 12 runs for BLM
- 15 runs for EM
- 6 runs for SS
- 5 runs for ES

For ease of testing, the runs should be run sequentially, as it is assumed that the data obtained in the previous run is available for the subsequent run.

The required runs are presented in Attachment A.

3.0 TEST COVERAGE REPORTING

This test suite functionally tests the following pre-voting functions handled by the OCS:

Table 3-1 OCS Functional Tests

BALLOT LAYOUT MANAGER	
Functions	**Subfunctions**
Edit Users	Replace the default Superuser
	Verified Admin User vs. Superuser role
	Add users
	Change user password
	Deactivate, reactivate, and delete users
Edit Setup	Ballot setup
	District types setup
	Setup district types
	Delete district type
	District type order
	Create ballot style for each district type
	Party setup
	Setup parties
	Update party information
	Add a party icon
	Define a decline to state (DTS) party
	Language setup
	Translations setup
	Ballot text formatting
Edit Precincts	Define precincts
	Split a precinct
	Update or delete precinct
	Assign districts to a precinct
	Precinct report
Edit Districts	Define districts
	Update or delete district
	Define a district contest
	Update or delete a contest
	Translate contests
	Create primary contests
	Allow DTS voting in primary contests
	Assign precincts to a district
	Delete a precinct from a district
Edit Preferences	Exercise available options

3.0 TEST COVERAGE REPORTING (continued)

Table 3-1 OCS Functional Tests (continued)

Define an Election	Define a new election
	Defining a primary election
	Election properties
	Translate the election title
	Add contests to the election
	Add candidates to contests
	Translate the candidate description
	Change candidate order
	Add header
	Add measure or recall contest
	Translate measures
	Reorder contests and measures
	Add instruction text block
	Remove contests and measures
	Straight ticket voting
Generate Ballots	Build ballots
	Preview ballots
Generate Reports	Election Proof Report
	Ballot Proof Report
Export Election	Create Election XML
Maintenance and Troubleshooting	Application log
	Navigate log
	Create log snapshots
	Database backup and restore
	Election deletion
Help Functions	Access help functions
	About Unisyn and application
ELECTION MANAGER	
Functions	**Subfunctions**
Elections	Create a new election
	Open election
	Close election
	Delete election
	Show all elections
	Election information
	Election status
	Election versioning
Election Options	Allow add precinct
	Password protect election
	Allow Pennsylvania Rule
	Full voter ballot review
	Consolidate split precincts
	OVI voter timeout

3.0 TEST COVERAGE REPORTING (continued)

Table 3-1 OCS Functional Tests (continued)

Election Options	OVO voter timeout
	Undervote checking
	Election password
	Technical support number
	Enforce close polls time
	Set poll close time
Printing Options	Auto print alerts
	Auto print voter receipts
	Display contest results on summary
	Ballot type
	Number of tally reports to print
	Enter alert report header title
	Enter text for signature line
Audio Options	Use separate party sound for candidate
Saving Changes	Save
	Save as default
	Reset from default
	Cancel
Election Sounds	Sound production
	Sound categories
	Sound language
	Sound status
	Edit sound script text
	Uploading sounds
	Test sounds
	Accepting sounds
	Accepting all sounds
View Ballots	Viewing ballots
	Select ballot language
	Select precinct
	Navigate pages
	Fitting pages to screen
	Zooming the ballot
	Saving the ballot to PDF or HTML format
	Printing the ballot
Undervote Checking	Select contests for undervote checking
Audio Script Report	Viewing audio script report
	Navigate pages
	Fitting pages to screen
	Zooming the audio script report

3.0 TEST COVERAGE REPORTING (continued)

Table 3-1 OCS Functional Tests (continued)

Audio Script Report	Saving the audio script report to PDF or HTML format
	Printing the audio script report
Ballot Proof Report	Viewing ballot proof report
	Navigate pages
	Fitting pages to screen
	Zooming the ballot proof report
	Saving the ballot proof report to PDF format
	Printing the ballot proof report
OpenElect Voting (OV) System User Report	Viewing OV system user report
	Navigate pages
	Fitting pages to screen
	Zooming the OV system user report
	Saving the OV system user report to PDF format
	Printing the OV system user report
Export Election to CD	Export training election
	Export election
	Copy election files to CD
User Management	Replace the default Superuser
	Verified Admin User vs. Superuser role
	Add users
	Change user password
	Deactivate, reactivate, and delete users
	UNI users *(Special account for test mode)*
Log Files and Help	OVO and OVI machine logs
	Application log
	Navigate logs
	Create log snapshots
	Access help functions
	About Unisyn and application
Database Management	Backup database
	Restore database
SOFTWARE SERVER	
Functions	**Subfunctions**
Software Loading	Starting software server
	Insert software release CD and enter release key
	Auto-load software onto OVDs
	Load software onto OVDs using validator password

3.0 TEST COVERAGE REPORTING (continued)

Table 3-1 OCS Functional Tests (continued)

Software Loading	Access OVD maintenance menu and print machine info
	Display activity screen
	Clear activity from active or completed machine panes
	View OVD release files
	Exit software server application
Logs	Display OVD machine log
	Display software release log
	View application log
	Navigate logs
	Create log snapshots
Help Functions	Access help functions
	About Unisyn and application
ELECTION SERVER	
Functions	**Subfunctions**
Election Loading	Starting election server
	Insert election CD
	Login as supervisor or maintenance user
	Verify election version
	Verify date and time
	Change time zone and system clock
	Auto-load election onto OVDs
	Manually load election onto OVDs using maintenance functions
	Display activity screen
	Clear activity from active or completed machine panes
	Exit election server application
Logs	View election properties
	Display OVD machine log
	Display election log
	View application log
	Navigate logs
	Create log snapshots
Help Functions	Access help functions
	About Unisyn and application

ATTACHMENT A
REQUIRED TEST RUNS

BALLOT LAYOUT MANAGER - RUN 1			
GENERAL ELECTION			
	Functional Description	**Test Case No.**	**Test Case Name**
1	OS login	PRE_TC-01	OS Access
2	App login	PRE_TC-02	EMS Access
3	Create District type	PRE_TC-ILTS-04	Create/Add District Type
4	Add party	PRE_TC-87	Add Party
5	Add language	PRE_TC-18	Election Definition Creation Alt Language & Language Display
6	Edit translation	PRE_TC-ILTS-08	Edit Translation Election and Ballot
7	Add precinct	PRE_TC-57	Election Definition Creation Create Precinct
8	Split precinct	PRE_TC-16	Election Definition Creation Split Precincts
9	Add districts	PRE_TC-60	Election Definition Creation Create District
10	Assign district to precinct	PRE_TC-ILTS-02	Assign District to Precinct
11	Contests - partisan	PRE_TC-22	Create Election Partisan Offices
12	Contests - non-partisan	PRE_TC-23	Create Election Non-Partisan Offices
13	Contest – N of M	PRE_TC-27	Create N of M Offices
14	Create general election	PRE_TC-19	Election Definition Creation General Election
15	Open previous election	PRE_TC-44	DB Management Election DB Edit
16	Straight party	PRE_TC-15	Election Definition Creation Straight Party Voting
17	Create ballot measures	PRE_TC-33	Create Election Creating Ballot Measures
18	Add candidates	PRE_TC-31	Create Election Creating Candidates
19	Ballot generation	PRE_TC-52	Load Election Definition Ballot Generation
20	Translate to Spanish	PRE_TC-75	Election Definition Creation Translate Contest
21	Ballot generation	PRE_TC-52	Load Election Definition Ballot Generation
22	Review proof ballot	PRE_TC-99	Review & Proof Ballot
23	Print election	PRE_TC-51	Pre-Election Reports Printing
24	Audit election	PRE_TC-50	Audit Ballot Preparation Pre-Election Audit Records
25	Backup database	PRE_TC-90	Backup Database
26	Export database	PRE_TC-47	DB Management Election DB Export

BALLOT LAYOUT MANAGER - RUN 2			
CHANGING SUPERUSERS & VERIFYING ADMIN ROLES			
	Functional Description	**Test Case No.**	**Test Case Name**
1	Login to OS	PRE_TC-01	OS Access
2	Login to EMS	PRE_TC-02	EMS Access
3	Add user Username: Superuser1 Superuser2	PRE_TC-06	EMS Administration Add User
4	Logout of EMS	PRE_TC-102	Logout of EMS
5	Change user default password to <admin>	PRE_TC-78	Change EMS Password During Initial Login
6	Deactivate user	PRE_TC-ILTS-10	Deactivate User
7	Delete user	PRE_TC-08	EMS Administration Delete User
8	Add user Admin: blmadmin blmadmin3	PRE_TC-06	EMS Administration Add User
9	Logged out of EMS superuser	PRE_TC-102	Logout of EMS
10	Change user default password to <admin>	PRE_TC-78	Change EMS Password During Initial Login
11	Verify user roles EMS - Admin	PRE_TC-86	Verify User Roles in EMS
12	Open previous election	PRE_TC-44	DB Management Election DB Edit
13	Backup database	PRE_TC-90	Backup Database
14	Edit election title and date	PRE_TC-105	Edit Election Title & Date
15	Delete candidate	PRE_TC-37	Create Election Deleting Candidates
16	Ballot generation	PRE_TC-52	Load Election Definition Ballot Generation
17	Proof ballot	PRE_TC-99	Review & Proof Ballot
18	Add candidate	PRE_TC-31	Create Election Creating Candidates
19	Edit candidate	PRE_TC-34	Create Election Editing Candidates
20	Edit party	PRE_TC-88	Edit Party
21	Ballot generation proofing	PRE_TC-52	Load Election Definition Ballot Generation
22	Ballot proof	PRE_TC-99	Review & Proof Ballot
23	Delete contest	PRE_TC-107	Delete Contest
24	Ballot generation	PRE_TC-52	Load Election Definition Ballot Generation
25	Ballot proof	PRE_TC-99	Review & Proof Ballot
26	Reports	PRE_TC-51	Pre-Election Reports Printing
27	Export election	PRE_TC-47	DB Management Election DB Export
28	Print ballot	PRE_TC-ILTS-11	Print Ballot PDF
29	Restore database	PRE_TC-48	DB Management Election DB Restore
30	Logout of EMS	PRE_TC-102	Logout of EMS
31	Login to EMS	PRE_TC-02	EMS Access
32	Restore	PRE_TC-48	DB Management Election DB Restore

BALLOT LAYOUT MANAGER - RUN 3			
CHANGING USER PASSWORDS, DEACTIVATING, & DELETING USERS			
	Functional Description	**Test Case No.**	**Test Case Name**
1	Login to OS - Admin	PRE_TC-01	OS Access
2	Login to EMS - Super	PRE_TC-02	EMS Access
3	Change user password <admin>	PRE_TC-104	Change/Update Password
4	Logout of EMS - Super	PRE_TC-102	Logout of EMS
5	EMS login with new password - <admin>	PRE_TC-02	EMS Access
6	Logout of EMS - admin	PRE_TC-102	Logout of EMS
7	Login to EMS - super	PRE_TC-02	EMS Access
8	Deactivate user	PRE_TC-ILTS-10	Deactivate User
9	Logout of EMS - super	PRE_TC-102	Logout of EMS
10	Login to EMS - ADMIN - should fail	PRE_TC-02	EMS Access
11	Login to EMS -super	PRE_TC-02	EMS Access
12	Reactivate user - ADMIN	PRE_TC-ILTS-12	Reactivate User
13	Logout of EMS - super	PRE_TC-102	Logout of EMS
14	Login to EMS -ADMIN	PRE_TC-02	EMS Access
15	Logout of EMS - ADMIN	PRE_TC-102	Logout of EMS
16	Login to EMS - super	PRE_TC-02	EMS Access
17	Deactivate user	PRE_TC-ILTS-10	Deactivate User
18	Delete user - ADMIN	PRE_TC-08	EMS Administration Delete User
19	Logout of EMS - super	PRE_TC-102	Logout of EMS
20	Login to EMS - ADMIN	PRE_TC-02	EMS Access

BALLOT LAYOUT MANAGER - RUN 4			
ADDING, UPDATING, & DELETING BALLOT ELEMENTS			
	Functional Description	**Test Case No.**	**Test Case Name**
1	Login to OS -ADMIN	PRE_TC-01	OS Access
2	Login to EMS - super	PRE_TC-02	EMS Access
3	Add district type	PRE_TC-ILTS-04	EMS Profile Edit
4	Edit district type	PRE_TC-ILTS-05	EMS Profile Delete
5	Create spacers	PRE_TC-ILTS-13	Create Spacer Contest
6	Reorder ballot elements	PRE_TC-98	Reorder Ballot Element
7	Add district	PRE_TC-60	Election Definition Creation Create District
8	Edit district	PRE_TC-61	Election Definition Creation Edit District
9	Add precinct - 2 precincts	PRE_TC-57	Election Definition Creation Create Precinct
10	Edit precincts	PRE_TC-58	Election Definition Creation Edit Precinct
11	Precincts to districts	PRE_TC-ILTS-03	Precinct to District
12	District to precinct	PRE_TC-ILTS-02	EMS Access
13	Add non-partisan contest	PRE_TC-23	Create Election Non-Partisan Offices
14	Edit contest	PRE_TC-106	Edit Contest
15	Header spacers increase to 5	PRE_TC-93	Edit Header
16	Edit contest	PRE_TC-106	Edit Contest
17	Add non-partisan contest	PRE_TC-23	Create Election Non-Partisan Offices
18	Header spacers increase to 5	PRE_TC-93	Edit Header
19	Edit contest	PRE_TC-106	Edit Contest
20	Previous election	PRE_TC-44	DB Management Election DB Edit
21	Add non-partisan contest to election	PRE_TC-23	Create Election Non-Partisan Offices
22	Add candidate	PRE_TC-31	Create Election Creating Candidates
23	Add candidate	PRE_TC-31	Create Election Creating Candidates
24	Add non-partisan contest to election	PRE_TC-23	Create Election Non-Partisan Offices
25	Add candidates	PRE_TC-31	Create Election Creating Candidates
26	Add candidates	PRE_TC-31	Create Election Creating Candidates
27	Edit candidates	PRE_TC-34	Create Election Editing Candidates
28	Reorder candidates	PRE_TC-98	Reorder Ballot Element
29	Generate ballots	PRE_TC-52	Load Election Definition Ballot Generation
30	Proof ballot	PRE_TC-99	Review & Proof Ballot
31	Export ballot	PRE_TC-ILTS-14	Export Ballot XML
32	Backup database	PRE_TC-90	Backup Database
33	Delete candidate	PRE_TC-37	Create Election Deleting Candidates
34	Generate ballots	PRE_TC-52	Load Election Definition Ballot Generation
35	Proof ballot	PRE_TC-99	Review & Proof Ballot
36	Edit party	PRE_TC-88	Edit Party

37	Generate ballots	PRE_TC-52	Load Election Definition Ballot Generation
38	Proof ballot	PRE_TC-99	Review & Proof Ballot
BALLOT LAYOUT MANAGER - RUN 4 *(continued)*			
ADDING, UPDATING, & DELETING BALLOT ELEMENTS			
	Functional Description	**Test Case No.**	**Test Case Name**
39	Delete contest	PRE_TC-107	Delete Contest
40	Generate ballots	PRE_TC-52	Load Election Definition Ballot Generation
41	Proof ballot	PRE_TC-99	Review & Proof Ballot
42	Close election	PRE_TC-108	Close Election
43	Remove a precinct from a district	PRE_TC-ILTS-16	Unassign Precinct from District
44	Open previous election	PRE_TC-44	DB Management Election DB Edit
45	Generate election	PRE_TC-52	Load Election Definition Ballot Generation
46	Proof ballot	PRE_TC-99	Review & Proof Ballot
47	Delete precinct	PRE_TC-59	Election Definition Creation Delete Precinct
48	Delete contest	PRE_TC-107	Delete Contest
49	Delete district	PRE_TC-62	Election Definition Creation Delete District
50	Delete district type	PRE_TC-ILTS-06	Delete District type

BALLOT LAYOUT MANAGER - RUN 5			
EDIT ELECTION, DB MANAGEMENT			
	Functional Description	**Test Case No.**	**Test Case Name**
1	Login OS - Admin	PRE_TC-01	OS Access
2	Login EMS - Superuser	PRE_TC-02	EMS Access
3	Unassign district to precincts	PRE_TC-ILTS-15	Unassign District from Precinct
4	Open previous election	PRE_TC-44	DB Management Election DB Edit
5	Generate election	PRE_TC-52	Load Election Definition Ballot Generation
6	Proof ballot	PRE_TC-99	Review & Proof Ballot
7	Close election	PRE_TC-108	Close Election
8	Delete precinct (2) 5 children (1) parent	PRE_TC-59	Election Definition Creation Delete Precinct
9	Open previous election	PRE_TC-44	DB Management Election DB Edit
10	Generate election	PRE_TC-52	Load Election Definition Ballot Generation
11	Proof ballot	PRE_TC-99	Review & Proof Ballot
12	Close election	PRE_TC-108	Close Election
13	Edit precinct - precinct 1	PRE_TC-58	Election Definition Creation Edit Precinct
14	Allow provisional ballots	PRE_TC-17	Election Definition Creation Provisional or Challenged Ballots
15	Edit precinct - precinct 3	PRE_TC-58	Election Definition Creation Edit Precinct
16	Allow absentee ballots	PRE_TC-91	Allow Absentee Ballots
17	Open previous election	PRE_TC-44	DB Management Election DB Edit
18	Generate election	PRE_TC-52	Load Election Definition Ballot Generation
19	Proof ballot	PRE_TC-99	Review & Proof Ballot
20	Close election	PRE_TC-108	Close Election
21	Edit district	PRE_TC-61	Election Definition Creation Edit District
22	Edit contest - vote for 2 (dog catcher)	PRE_TC-106	Edit Contest
23	Open previous election	PRE_TC-44	DB Management Election DB Edit
24	Generate election	PRE_TC-52	Load Election Definition Ballot Generation
25	Proof ballot	PRE_TC-99	Review & Proof Ballot
26	Close election	PRE_TC-108	Close Election
27	Create precinct	PRE_TC-57	Election Definition Creation Create Precinct
28	Create precinct	PRE_TC-57	Election Definition Creation Create Precinct
29	Create district	PRE_TC-60	Election Definition Creation Create District
30	Create spacer - define contest spacer during creation	PRE_TC-ILTS-13	Create Spacer Contest
31	Assign district to precinct	PRE_TC-ILTS-02	Assign District to Precinct
32	Open previous election	PRE_TC-44	DB Management Election DB Edit
33	Add non-partisan office - spacer contest will be	PRE_TC-23	Create Election Non-Partisan Offices

	selected		
34	Generate election	PRE_TC-52	Load Election Definition Ballot Generation
BALLOT LAYOUT MANAGER - RUN 5 *(continued)*			
EDIT ELECTION, DB MANAGEMENT			
	Functional Description	**Test Case No.**	**Test Case Name**
35	Proof ballot	PRE_TC-99	Review & Proof Ballot
36	Close election	PRE_TC-108	Close Election
37	Logout of EMS	PRE_TC-102	Logout of EMS
38	Logout of OS	PRE_TC-103	Logout of OS

BALLOT LAYOUT MANAGER - RUN 6			
01 PRIMARY WITH DTS, PARTY ICONS, PROVISIONAL VOTING, & TRANSLATIONS			
PREVIOUSLY DEFINED DISTRICT TYPES & PARTIES WERE USED			
	Functional Description	**Test Case No.**	**Test Case Name**
1	OS Login as Admin	PRE_TC-01	OS Access
2	EMS Login as superuser <admin>	PRE_TC-02	EMS Access
3	Add district type - state senate	PRE_TC-ILTS-04	Create/Add District Type
4	Add party - communist check has primary	PRE_TC-87	Add Party
5	Edit party - communist (for icon)	PRE_TC-88	Edit Party
6	Add image, line art or logo (party icon)	PRE_TC-56	Ballot Layout Add Image Line-Art or Logo
7	Add party - green check has primary	PRE_TC-87	Add Party
8	Edit party - green (for icon)	PRE_TC-88	Edit Party
9	Add image, line art or logo (party icon)	PRE_TC-56	Ballot Layout Add Image Line-Art or Logo
10	Edit party - libertarian (for icon)	PRE_TC-88	Edit Party
11	Add image, line art or logo (party icon)	PRE_TC-56	Ballot Layout Add Image Line-Art or Logo
12	Edit party - democratic (for icon)	PRE_TC-88	Edit Party
13	Add image, line art or logo (party icon)	PRE_TC-56	Ballot Layout Add Image Line-Art or Logo
14	Edit party - republican (for icon)	PRE_TC-88	Edit Party
15	Add image, line art or logo (party icon)	PRE_TC-56	Ballot Layout Add Image Line-Art or Logo
16	Create precinct - Bill County Court	PRE_TC-57	Election Definition Creation Create Precinct
17	Create precinct - Shelton Road Church	PRE_TC-57	Election Definition Creation Create Precinct
18	Create precinct - Provisional Primary "Provisional	PRE_TC-57	Election Definition Creation Create Precinct
19	Provisional or challenged ballots	PRE_TC-17	Election Definition Creation Provisional or Challenged Ballots
20	Create district - presidential primary	PRE_TC-60	Election Definition Creation Create District
21	Create district - US senate primary	PRE_TC-60	Election Definition Creation Create District
22	Create district - US house of representatives district 6	PRE_TC-60	Election Definition Creation Create District
23	Create district - Justices of the supreme court	PRE_TC-60	Election Definition Creation Create District
24	Create district - State senate	PRE_TC-60	Election Definition Creation Create District
25	Create district - Member of assembly	PRE_TC-60	Election Definition Creation Create District
26	Delete district	PRE_TC-62	Election Definition Creation Delete District

27	Delete district	PRE_TC-62	Election Definition Creation Delete District

BALLOT LAYOUT MANAGER – RUN 6 *(continued)*			
01 PRIMARY WITH DTS, PARTY ICONS, PROVISIONAL VOTING, & TRANSLATIONS			
PREVIOUSLY DEFINED DISTRICT TYPES & PARTIES WERE USED			
	Functional Description	**Test Case No.**	**Test Case Name**
28	Delete district	PRE_TC-62	Election Definition Creation Delete District
29	Delete district	PRE_TC-62	Election Definition Creation Delete District
30	Delete district	PRE_TC-62	Election Definition Creation Delete District
31	Delete district	PRE_TC-62	Election Definition Creation Delete District
32	Add district	PRE_TC-ILTS-04	Create/Add District type
33	Add district	PRE_TC-ILTS-04	Create/Add District type
34	Add district	PRE_TC-ILTS-04	Create/Add District type
35	Add district	PRE_TC-ILTS-04	Create/Add District type
36	Add district	PRE_TC-ILTS-04	Create/Add District type
37	Add district	PRE_TC-ILTS-04	Create/Add District type
38	Assign district to precinct – Assign the 6 created districts to precincts (2 & provisional)	PRE_TC-ILTS-02	Assign District to Precinct
39	Assign district to precinct – Assign the 6 created districts to precincts (2 & provisional)	PRE_TC-ILTS-02	Assign District to Precinct
40	Assign district to precinct – Assign the 6 created districts to precincts (2 & provisional)	PRE_TC-ILTS-02	Assign District to Precinct
41	Create partisan office – president of the United States	PRE_TC-22	Create Election Partisan Office
42	Create primary contest – president of the United States	PRE_TC-ILTS-19	Create Primary Contests
43	Edit contest – edit the 5 created primary contests & check allow write-in	PRE_TC-106	Edit Contest
44	Create write-in candidate	PRE_TC-32	Create Election Creating Write-In Candidates
45	Edit contest – edit the 5 created primary contests & check allow write-in	PRE_TC-106	Edit Contest
46	Create write-in candidate	PRE_TC-32	Create Election Creating Write-In Candidates
47	Edit contest – edit the 5 created primary contests & check allow write-in	PRE_TC-106	Edit Contest

48	Create write-in candidate	PRE_TC-32	Create Election Creating Write-In Candidates
49	Edit contest – edit the 5 created primary contests & check allow write-in	PRE_TC-106	Edit Contest

BALLOT LAYOUT MANAGER - RUN 6 *(continued)*			
01 PRIMARY WITH DTS, PARTY ICONS, PROVISIONAL VOTING, & TRANSLATIONS			
PREVIOUSLY DEFINED DISTRICT TYPES & PARTIES WERE USED			
	Functional Description	**Test Case No.**	**Test Case Name**
50	Create write-in candidate	PRE_TC-32	Create Election Creating Write-In Candidates
51	Edit contest - edit the 5 created primary contests & check allow write-in	PRE_TC-106	Edit Contest
52	Create write-in candidate	PRE_TC-32	Create Election Creating Write-In Candidates
53	Edit preferences - check primary write-ins	PRE_TC-112	Edit Preferences
54	Create partisan office - US senate	PRE_TC-22	Create Election Partisan Office
55	Create primary contest - US senate	PRE_TC-ILTS-19	Create Primary Contests
56	Create partisan office - US representative district 6	PRE_TC-22	Create Election Partisan Office
57	Create primary contest - US representative district 6	PRE_TC-ILTS-19	Create Primary Contests
58	Create partisan office - Justices of the supreme court	PRE_TC-22	Create Election Partisan Office
59	Create primary contest - Justices of the supreme court	PRE_TC-ILTS-19	Create Primary Contests
60	Create partisan office - State senator	PRE_TC-22	Create Election Partisan Office
61	Create primary contest - State senator	PRE_TC-ILTS-19	Create Primary Contests
62	Create partisan office - Member of assembly	PRE_TC-22	Create Election Partisan Office
63	Create primary contest - Member of assembly	PRE_TC-ILTS-19	Create Primary Contests
64	Create DTS party - Communist DTS	PRE_TC-ILTS-09	Specify DTS Party
65	Create DTS party - Democratic DTS	PRE_TC-ILTS-09	Specify DTS Party
66	Create DTS party - Green DTS	PRE_TC-ILTS-09	Specify DTS Party
67	Create DTS party - Libertarian DTS	PRE_TC-ILTS-09	Specify DTS Party
68	Create DTS party - Republican DTS	PRE_TC-ILTS-09	Specify DTS Party
69	Allow DTS voting in primary contests	PRE_TC-ILTS-01	Allow Decline to State (DTS) Voting
70	Open primaries (create election) provisional type by precinct setting, election name: Prim-01 primary election	PRE_TC-14	Election Definition Creation Open Primaries
71	Open previously opened election	PRE_TC-44	DB Management Election DB Edit

72	Add created contest/office to election & all primaries & contests	PRE_TC-ILTS-22	Add Created Contest to Election
73	Reorder ballot elements (match layout to ballot definition)	PRE_TC-98	Reorder Ballot Element
74	Create candidates for all primaries in all contests	PRE_TC-31	Create Election Creating Candidates

BALLOT LAYOUT MANAGER - RUN 6 *(continued)*			
01 PRIMARY WITH DTS, PARTY ICONS, PROVISIONAL VOTING, & TRANSLATIONS			
PREVIOUSLY DEFINED DISTRICT TYPES & PARTIES WERE USED			
	Functional Description	**Test Case No.**	**Test Case Name**
75	Ballot generation	PRE_TC-52	Load Election Definition Ballot Generation
76	Review & proof ballot	PRE_TC-99	Review & Proof Ballot
77	View election proof report	PRE_TC-51	Pre-Election Reports Printing
78	View ballot proof report	PRE_TC-51	Pre-Election Reports Printing
79	Export ballot - check encrypt and by precinct	PRE_TC-ILTS-14	Export Ballot XML
80	Audit election	PRE_TC-50	Audit Ballot Preparation Pre-Election Audit Records
81	Backup database (Backup_2009_06_25_4_09_11.udb)	PRE_TC-90	Backup database
82	Close election	PRE_TC-108	Close Election
83	Logout of EMS	PRE_TC-102	Logout of EMS
84	Logout of OS	PRE_TC-103	Logout of OS

BALLOT LAYOUT MANAGER - RUN 7			
EXERCISE PRIMARY CONTEST FUNCTIONS, BALLOT ROTATION, TRANSLATION,			
RANKED CHOICE, REPORT NAVIGATION, BALLOT LAYOUT OPTIONS			
	Functional Description	**Test Case No.**	**Test Case Name**
1	Login to OS as Admin	PRE_TC-01	OS Access
2	Login to EMS as superuser	PRE_TC-02	EMS Access
3	Open a previous election - primary	PRE_TC-44	DB Management Election DB Edit
4	Create candidate – John Wise as republican member of assembly	PRE_TC-31	Create Election Creating Candidates
5	Ballot generation	PRE_TC-52	Load Election Definition Ballot Generation
6	Review & proof ballot	PRE_TC-99	Review & Proof Ballot
7	Reorder ballot elements - move John Wise up	PRE_TC-98	Reorder Ballot Element
8	Ballot generation	PRE_TC-52	Load Election Definition Ballot Generation
9	Review & proof ballot	PRE_TC-99	Review & Proof Ballot
10	Edit a candidate - change John Wise to James Wise	PRE_TC-34	Create Election Editing Candidates
11	Ballot generation	PRE_TC-52	Load Election Definition Ballot Generation
12	Review & proof ballot	PRE_TC-99	Review & Proof Ballot
13	Add translation election & ballot to James Wise - Spanish, Candidate description: cell shaded waterfowl	PRE_TC-ILTS-07	Add Translation Election & Ballot
14	Ballot generation	PRE_TC-52	Load Election Definition Ballot Generation
15	Review & proof ballot	PRE_TC-99	Review & Proof Ballot
16	Add instructions - Text key: make a choice, Text: Make a choice, Text spaces: 2	PRE_TC-95	Add Instructions
17	Ballot generation	PRE_TC-52	Load Election Definition Ballot Generation
18	Review & proof ballot	PRE_TC-99	Review & Proof Ballot
19	Edit instructions - Text key: Pick one, Text: Choose one from the following, Text spaces: 5	PRE_TC-96	Edit Instructions
20	Ballot generation	PRE_TC-52	Load Election Definition Ballot Generation
21	Review & proof ballot	PRE_TC-99	Review & Proof Ballot

22	Add translation to election & ballot to instructions - Spanish instructions: Pick uno por favor	PRE_TC-ILTS-07	Add Translation Election & Ballot
23	Ballot generation	PRE_TC-52	Load Election Definition Ballot Generation
24	Review & proof ballot	PRE_TC-99	Review & Proof Ballot

BALLOT LAYOUT MANAGER - RUN 7 *(continued)*			
EXERCISE PRIMARY CONTEST FUNCTIONS, BALLOT ROTATION, TRANSLATION,			
RANKED CHOICE, REPORT NAVIGATION, BALLOT LAYOUT OPTIONS			
	Functional Description	**Test Case No.**	**Test Case Name**
25	Edit translation election & ballot to instructions- Spanish instructions: Choose uno por favor	PRE_TC-ILTS-08	Edit Translation Election & Ballot
26	Ballot generation	PRE_TC-52	Load Election Definition Ballot Generation
27	Review & proof ballot	PRE_TC-99	Review & Proof Ballot
28	Delete instructions	PRE_TC-97	Delete Instructions
29	Ballot generation	PRE_TC-52	Load Election Definition Ballot Generation
30	Review & proof ballot	PRE_TC-99	Review & Proof Ballot
31	Create ballot measure - Should taxes go up?, Text spaces: 2, Header spaces: 2	PRE_TC-33	Create Election Creating Ballot Measures
32	Ballot generation	PRE_TC-52	Load Election Definition Ballot Generation
33	Review & proof ballot	PRE_TC-99	Review & Proof Ballot
34	Edit ballot measure - Text spaces: 4, Header spaces: 4	PRE_TC-36	Create Election Editing Ballot Measures
35	Ballot generation	PRE_TC-52	Load Election Definition Ballot Generation
36	Review & proof ballot	PRE_TC-99	Review & Proof Ballot
37	Translate contest to ballot measure - Spanish: Taxes necitessa?	PRE_TC-75	Election Definition Creation Translate Contest
38	Ballot generation	PRE_TC-52	Load Election Definition Ballot Generation
39	Review & proof ballot	PRE_TC-99	Review & Proof Ballot
40	Delete ballot measures	PRE_TC-39	Create Election Deleting Ballot Measures
41	Ballot generation	PRE_TC-52	Load Election Definition Ballot Generation
42	Review & proof ballot	PRE_TC-99	Review & Proof Ballot
43	Delete candidates – James Wise & Andrew J. Lanza	PRE_TC-37	Create Election Deleting Candidate
44	Ballot generation	PRE_TC-52	Load Election Definition Ballot

			Generation
45	Review & proof ballot	PRE_TC-99	Review & Proof Ballot
46	Delete previously created contest - Member of Assembly: Republican	PRE_TC-ILTS-23	Remove a Created Contest From the Election
47	Ballot generation	PRE_TC-52	Load Election Definition Ballot Generation
48	Review & proof ballot	PRE_TC-99	Review & Proof Ballot
BALLOT LAYOUT MANAGER - RUN 7 *(continued)*			
EXERCISE PRIMARY CONTEST FUNCTIONS, BALLOT ROTATION, TRANSLATION, RANKED CHOICE, REPORT NAVIGATION, BALLOT LAYOUT OPTIONS			
	Functional Description	**Test Case No.**	**Test Case Name**
49	Add translation to election & ballot - Setup: Spanish, Field name: Ballot header, Value: blank, Translation: Fill in oval comletas por favor	PRE_TC-ILTS-07	Add Translation Election & Ballot
50	Open a previous election	PRE_TC-44	DB Management Election DB Edit
51	Ballot generation	PRE_TC-52	Load Election Definition Ballot Generation
52	Review & proof ballot	PRE_TC-99	Review & Proof Ballot
53	Close election	PRE_TC-108	Close Election
54	Edit translation election & ballot - Setup: Spanish, "Fill in oval completely."	PRE_TC-ILTS-08	Edit Translation Election & Ballot
55	Open a previous election	PRE_TC-44	DB Management Election DB Edit
56	Ballot generation	PRE_TC-52	Load Election Definition Ballot Generation
57	Review & proof ballot	PRE_TC-99	Review & Proof Ballot
58	Add header above state senator contests - Header text: State contests can be found below, check page break, check show text, Spaces: 1	PRE_TC-92	Add Header
59	Add translation election & ballot - Spanish: Estado contesto are below	PRE_TC-ILTS-07	Add Translation Election & Ballot
60	Ballot generation	PRE_TC-52	Load Election Definition Ballot Generation
61	Review & proof ballot	PRE_TC-99	Review & Proof Ballot
62	Edit header - increase to 3 spaces, uncheck page break	PRE_TC-93	Edit Header
63	Ballot generation	PRE_TC-52	Load Election Definition Ballot Generation
64	Review & proof ballot	PRE_TC-99	Review & Proof Ballot
65	Edit header - check page break, uncheck show text	PRE_TC-93	Edit Header
66	Ballot generation	PRE_TC-52	Load Election Definition Ballot Generation
67	Review & proof ballot	PRE_TC-99	Review & Proof Ballot

68	Delete header	PRE_TC-94	Delete Header
69	Ballot generation	PRE_TC-52	Load Election Definition Ballot Generation
70	Review & proof ballot	PRE_TC-99	Review & Proof Ballot
71	Reorder ballot elements - move state senator primary contests above justice of the supreme court	PRE_TC-98	Reorder Ballot Element
BALLOT LAYOUT MANAGER - RUN 7 *(continued)*			
EXERCISE PRIMARY CONTEST FUNCTIONS, BALLOT ROTATION, TRANSLATION, RANKED CHOICE, REPORT NAVIGATION, BALLOT LAYOUT OPTIONS			
	Functional Description	**Test Case No.**	**Test Case Name**
72	Ballot generation	PRE_TC-52	Load Election Definition Ballot Generation
73	Review & proof ballot	PRE_TC-99	Review & Proof Ballot
74	Close election	PRE_TC-108	Close Election
75	Edit contest - State senator Republican	PRE_TC-106	Edit Contest
76	Translate contest - Spanish Ballot & Report title: Spanish state senator	PRE_TC-75	Election Definition Creation Translate Contest
77	Open previous election	PRE_TC-44	Ballot Layout Create
78	Ballot generation	PRE_TC-52	Load Election Definition Ballot Generation
79	Review & proof ballot	PRE_TC-99	Review & Proof Ballot
80	Close election	PRE_TC-108	Close Election
81	Edit contest – State senator Republican	PRE_TC-106	Edit Contest
82	Translate contest – revert to original text	PRE_TC-75	Election Definition Creation Translate Contest
83	Open previous election	PRE_TC-44	DB Management Election DB Edit
84	Ballot generation	PRE_TC-52	Load Election Definition Ballot Generation
85	Review & proof ballot	PRE_TC-99	Review & Proof Ballot
86	Add translation election & ballot – Election title Candida: PRIM-01 Election Primeria	PRE_TC-75	Election Definition Creation Translate Contest
87	Ballot generation	PRE_TC-52	Load Election Definition Ballot Generation
83	Open previous election	PRE_TC-44	DB Management Election DB Edit
84	Ballot generation	PRE_TC-52	Load Election Definition Ballot Generation
85	Review & proof ballot	PRE_TC-99	Review & Proof Ballot
86	Add translation election & ballot – Election title Candida: PRIM-01 Election Primeria	PRE_TC-75	Election Definition Creation Translate Contest
87	Ballot generation	PRE_TC-52	Load Election Definition Ballot Generation
88	Review & proof ballot	PRE_TC-99	Review & Proof Ballot

89	Edit translation election & ballot – Election title Spanish: PRIM-01 Primary Election	PRE_TC-ILTS-08	Edit Translation Election & Ballot
90	Ballot layout create – exercise ballot layout options	PRE_TC-40	Ballot Layout Create
91	Navigate reports – Ballot proof report, election proof report	PRE_TC-ILTS-17	Navigate Reports
92	Close election	PRE_TC-108	Close Election
BALLOT LAYOUT MANAGER - RUN 7 *(continued)*			
EXERCISE PRIMARY CONTEST FUNCTIONS, BALLOT ROTATION, TRANSLATION, RANKED CHOICE, REPORT NAVIGATION, BALLOT LAYOUT OPTIONS			
	Functional Description	**Test Case No.**	**Test Case Name**
93	Navigate reports – precinct report	PRE_TC-ILTS-17	Navigate Reports
94	Edit precinct for ballot rotation #1 – Bibb county court: 1, Shelton Road Church: 2, Provisional primary: 3	PRE_TC-58	Election Definition Creation Edit Precinct
95	Create partisan office member of assembly – check ballot rotation, write-ins & DTS	PRE_TC-106	Create Election Partisan Offices
96	Open previous election	PRE_TC-44	Ballot Layout Create
97	Add created office to election –member of assembly democratic	PRE_TC-ILTS-22	Add Created Contest to Election
98	Create candidates – Member of assembly democratic (□andidate 1, 2, 3)	PRE_TC-31	Create Election Creating Candidates
99	Ballot rotation type: top to bottom	PRE_TC-25	Create Election Ballot Rotation
100	Ballot generation	PRE_TC-52	Load Election Definition Ballot Generation
101	Review & proof ballot	PRE_TC-99	Review & Proof Ballot
102	Ballot rotation type: bottom to top	PRE_TC-25	Create Election Ballot Rotation
103	Ballot generation	PRE_TC-52	Load Election Definition Ballot Generation
104	Review & proof ballot	PRE_TC-99	Review & Proof Ballot
105	Close election	PRE_TC-108	Close Election
106	Edit contest Member of assembly democratic - Ranked voting: 2	PRE_TC-106	Edit Contest
107	Open previous election	PRE_TC-44	Ballot Layout Create
108	Ranked order voting -> election -> layout ->RC full page name on ballot	PRE_TC-30	Create Election Ranked Order Voting
109	Ballot generation	PRE_TC-52	Load Election Definition Ballot Generation
110	Review & proof ballot	PRE_TC-99	Review & Proof Ballot

111	Close election	PRE_TC-108	Close Election
112	Edit contest Member of assembly democratic - Ranked voting: 3	PRE_TC-106	Edit Contest
113	Open previous election	PRE_TC-44	Ballot Layout Create
114	Ballot generation	PRE_TC-52	Load Election Definition Ballot Generation
115	Review & proof ballot	PRE_TC-99	Review & Proof Ballot
116	Close election	PRE_TC-108	Close Election
BALLOT LAYOUT MANAGER - RUN 7 *(continued)*			
EXERCISE PRIMARY CONTEST FUNCTIONS, BALLOT ROTATION, TRANSLATION, RANKED CHOICE, REPORT NAVIGATION, BALLOT LAYOUT OPTIONS			
	Functional Description	**Test Case No.**	**Test Case Name**
117	Logout of EMS	PRE_TC-102	Logout of EMS
118	Logout of OS	PRE_TC-103	Logout of OS

BALLOT LAYOUT MANAGER - RUN 8			
APPLICATION LOGS SNAPSHOTS, ACCESS HELP & ACCESS ABOUT			
	Functional Description	**Test Case No.**	**Test Case Name**
1	Login to OS as Admin	PRE_TC-01	OS Access
2	Login to EMS	PRE_TC-02	EMS Access
3	Access Help	PRE_TC-113	Access Help
4	Access About	PRE_TC-ILTS-36	Access About (Unisyn & Application)
5	Access application logs	PRE_TC-ILTS-42	Access Application Log
6	Real-time auditing	PRE_TC-49	Audit Ballot Preparation Real-Time Auditing
7	Pre-election audit records	PRE_TC-50	Audit Ballot Preparation Pre-Election Audit Records
8	Navigate logs	PRE_TC-ILTS-43	Navigate Logs
9	Log snapshot	PRE_TC-ILTS-44	Log Snapshot
10	Logout of EMS	PRE_TC-102	Logout of EMS
11	Logout of OS	PRE_TC-103	Logout of OS

BALLOT LAYOUT MANAGER - RUN 9			
	Functional Description	**Test Case No.**	**Test Case Name**
1	Login OS - Admin	PRE_TC-01	OS Access
2	Login EMS - Superuser	PRE_TC-02	EMS Access
3	Add user Username: Superuser1 Superuser2	PRE_TC-06	EMS Administration Add User
4	Open previous election	PRE_TC-44	DB Management Election DB Edit
5	Election Options: Straight Ticket -- uncheck	PRE_TC-ILTS-64	BLM Election Options
6	Generate election	PRE_TC-52	Load Election Definition Ballot Generation
7	Proof Ballot	PRE_TC-99	Review and Proof Ballot
8	Election Options: Candidate Layout = Candidate Name	PRE_TC-ILTS-64	BLM Election Options
9	Generate election	PRE_TC-52	Load Election Definition Ballot Generation
10	Proof ballot	PRE_TC-99	Review and Proof Ballot
11	Candidate Layout and Party	PRE_TC-ILTS-64	BLM Election Options
12	Generate election	PRE_TC-52	Load Election Definition Ballot Generation
13	Proof ballot	PRE_TC-99	Review and Proof Ballot
14	Close election	PRE_TC-108	Close Election
15	Edit N of M	PRE_TC-73	Create Election Edit N of M Contests
16	Open previous election	PRE_TC-44	DB Management Election DB Edit
17	Delete candidate: Dogcatcher (leave only Bill Bates)	PRE_TC-37	Create Election Deleting Candidates
18	Election Options: show no candidates; show multiple no candidates; fill no candidates	PRE_TC-ILTS-64	BLM Election Options
19	Generate election	PRE_TC-52	Load Election Definition Ballot Generation
20	Proof ballot	PRE_TC-99	Review and Proof Ballot
21	Election Options: fill no candidates: uncheck	PRE_TC-ILTS-64	BLM Election Options
22	Delete candidate: Dogcatcher: delete Bill Bates	PRE_TC-37	Create Election Deleting Candidates
23	Generate election	PRE_TC-52	Load Election Definition Ballot Generation
24	Proof ballot	PRE_TC-99	Review and Proof Ballot
25	Close election	PRE_TC-108	Close Election

BALLOT LAYOUT MANAGER - RUN 9			
	Functional Description	**Test Case No.**	**Test Case Name**
26	Edit N of M: vote for 1 (Dogcatcher)	PRE_TC-73	Create Election Edit N of M Contests
27	Open previous election	PRE_TC-44	DB Management Election DB Edit
28	Election Options: show multiple no candidates -- uncheck	PRE_TC-ILTS-64	BLM Election Options
29	Generate election	PRE_TC-52	Load Election Definition Ballot Generation
30	Proof ballot	PRE_TC-99	Review and Proof Ballot
31	Close election	PRE_TC-108	Close Election

BALLOT LAYOUT MANAGER - RUN 9 *(continued)*			
	Functional Description	**Test Case No.**	**Test Case Name**
32	1st of each type (Main types and District 1 and Seat A's)	PRE_TC-ILTS-02	Election Definition Creation Assign District to Precinct
33	Open previous election	PRE_TC-44	DB Management Election DB Edit
34		PRE_TC-17	Provisional or Challenged Ballots
35		PRE_TC-91	Allow Absentee Ballots
36	Absentee Type and Provisional Type= by Precinct setting; Gen Test Ballots = True	PRE_TC-ILTS-64	BLM Election Options
37	Generate election	PRE_TC-52	Load Election Definition Ballot Generation
38		PRE_TC-ILTS-14	Load Election Definition Export Ballot XML
39	Proof ballot	PRE_TC-99	Review and Proof Ballot
40	Absentee; Provisional; Test	PRE_TC-69	Election Definition Creation Edit Provisional or Challenged Ballots
41		PRE_TC-91	Allow Absentee Ballots
42	Abs Type- Shadow; Prov Type = Shadow; Gen Test = False	PRE_TC-ILTS-64	BLM Election Options
43		PRE_TC-92	Ballot Gen
44		PRE_TC-ILTS-14	Load Election Definition Export Ballot XML
45	Proof ballot (in export directory)	PRE_TC-99	Review and Proof Ballot
46	Close election	PRE_TC-108	Close Election
47	Name = alpha To = Test Precinct 3; Name = Beta to = Split Parent	PRE_TC-58	Election Definition Creation Edit Precinct
48	Split Parent: Absentee split; provisional split; normal split	PRE_TC-16	Election Definition Creation Split Precincts
49	Test Prec. 3: Mains, D2, D2a, Seat B	PRE_TC-ILTS-02	Election Definition Creation Assign District to Precinct
50	Mains, Report Log, D2,	PRE_TC-ILTS-	Election Definition Creation Assign District to

BALLOT LAYOUT MANAGER - RUN 9 *(continued)*			
	D3's, 2B, Seat C	02	Precinct
51	Norm Split: Mains, Report Log, D2, D3's, 2B, Seat C	PRE_TC-ILTS-02	Election Definition Creation Assign District to Precinct
52	Prov Split: Report Log,D2, D3's, 2B, Seat C	PRE_TC-ILTS-02	Election Definition Creation Assign District to Precinct
53	Open previous election GEN-01	PRE_TC-44	DB Management Election DB Edit
54		PRE_TC-69	Election Definition Creation Edit Provisional or Challenged Ballots
55		PRE_TC-91	Allow Absentee Ballots

BALLOT LAYOUT MANAGER - RUN 9*(continued)*			
	Functional Description	**Test Case No.**	**Test Case Name**
56	Abs Type: By Precinct Prov Type: By Precinct Prec. ID Type: 3 digit	PRE_TC-ILTS-64	BLM Election Options
57	Generate election	PRE_TC-52	Load Election Definition Ballot Generation
58	Proof ballot (in export directory)	PRE_TC-99	Review and Proof Ballot
59	Pre ID type: 4 digit	PRE_TC-ILTS-64	BLM Election Options
60	Generate election	PRE_TC-52	Load Election Definition Ballot Generation
61	Proof ballot (in export directory)	PRE_TC-99	Review and Proof Ballot
62		PRE_TC-70	Election Definition Creation Delete Provisional or Challenged Ballots
63		PRE_TC-91	Allow Absentee Ballots
64	-Abs Type: by Ballotstyle -Prov Type: No Prov -Prec ID Type: assigned ID's -Abs Start: 1000 -Abs Interval: 10	PRE_TC-ILTS-64	BLM Election Options
65	Generate election	PRE_TC-52	Load Election Definition Ballot Generation
66	Proof ballot (in export directory)	PRE_TC-99	Review and Proof Ballot
67		PRE_TC-91	Allow Absentee Ballots
68	Abs Start: 9500 Abs Interval: 1	PRE_TC-ILTS-64	BLM Election Options
69		PRE_TC-52	Load Election Definition Ballot Generation
70	Proof ballot (in export directory)	PRE_TC-99	Review and Proof Ballot
71	By Ballotstyle	PRE_TC-ILTS-14	Load Election Definition Export Ballot XML
72	Verify Abs by Ballotstyle:	PRE_TC-99	Review and Proof Ballot

BALLOT LAYOUT MANAGER - RUN 9*(continued)*			
	2 and 4 should have A-suffix ballots; Style 1 is already Absentee		
73		PRE_TC-102	EMS Access Logout of EMS
74		PRE_TC-103	Logout of OCS

BALLOT LAYOUT MANAGER - RUN 10			
COMPLETE PRIMARY-01			
	Functional Description	**Test Case No.**	**Test Case Name**
1	Login to OS	PRE_TC-01	OS Access
2	Login to EMS	PRE_TC-02	EMS Access
3	Previous election - primary	PRE_TC-44	DB Management Election DB Edit
4	Edit title & date	PRE_TC-105	Edit Election Title & Date
5	Edit election options - Rot Type: None, Prov Type: By Precinct Setting, Layout: Full Page 14	PRE_TC-ILTS-64	Edit Election Options
6	Generate ballot	PRE_TC-92	Add Header
7	Delete header	PRE_TC-94	Delete Header
8	Delete header	PRE_TC-94	Delete Header
9	Delete header	PRE_TC-94	Delete Header
10	Generate ballot	PRE_TC-52	Load Election Definition Ballot generation
11	Review & proof ballot	PRE_TC-99	Review & Proof Ballot
12	Reorder ballot elements	PRE_TC-98	Reorder Ballot Element
13	Editing candidates - Candidate 1: Andrew J. Lanza	PRE_TC-34	Create Election Editing Candidates
14	Delete candidates - Candidate 2 & 3	PRE_TC-37	Create Election Deleting Candidates
15	Close election	PRE_TC-108	Close Election
16	Edit contest	PRE_TC-106	Edit Contest
17	Open previous election	PRE_TC-44	DB Management Election DB Edit
18	Generate ballot	PRE_TC-52	Load Election Definition Ballot generation
19	Review & proof ballot	PRE_TC-99	Review & Proof Ballot
20	Export ballot to XML	PRE_TC-ILTS-14	Export Ballot XML
21	Logout of EMS	PRE_TC-102	Logout of EMS

22	Logout of OS	PRE_TC-103	Logout of OS

BALLOT LAYOUT MANAGER - RUN 11			
APPLICATION TIMEOUT			
	Functional Description	**Test Case No.**	**Test Case Name**
1	Login to OS	PRE_TC-01	OS Access
2	Login to EMS	PRE_TC-02	EMS Access
3	Open previous election	PRE_TC-44	DB Management Election DB Edit
4	Edit preferences - uncheck primary write-ins (Do NOT save)	PRE_TC-112	Edit Preferences
5	Application timeout	PRE_TC-114	Application Timeout
6	Login to EMS	PRE_TC-02	EMS Access
7	Edit preferences - verify unchecked	PRE_TC-112	Edit Preferences
8	Close election	PRE_TC-108	Close Election
9	Add user - Username: blmadmin, Role: admin, Password: <admin>, Confirm Password: <admin>	PRE_TC-06	EMS Administration Add User
10	Logout of EMS	PRE_TC-102	Logout of EMS
11	Login to EMS as admin	PRE_TC-02	EMS Access
12	Change initial password	PRE_TC-78	Change EMS Password During Initial Login
13	Open previous election	PRE_TC-44	DB Management Election DB Edit
14	Straight party voting - check allow straight party ticket (Do Not save)	PRE_TC-15	Election Definition Creation Straight Party Voting
15	Application timeout	PRE_TC-114	Application Timeout
16	Login to EMS as admin	PRE_TC-02	EMS Access
17	Straight party voting - verify checked	PRE_TC-15	Election Definition Creation Straight Party Voting
18	Close election	PRE_TC-108	Close Election
19	Open previous election	PRE_TC-44	DB Management Election DB Edit

20	Straight ticket voting - check allow straight ticket	PRE_TC-15	Election Definition Creation Straight Party Voting
21	Application timeout	PRE_TC-114	Application Timeout
22	Login to EMS as super	PRE_TC-02	EMS Access
23	Straight ticket voting - verify checked	PRE_TC-15	Election Definition Creation Straight Party Voting
24	Close election	PRE_TC-108	Close Election
25	Logout of EMS	PRE_TC-102	Logout of EMS
26	Logout of OS	PRE_TC-103	Logout of OS

BALLOT LAYOUT MANAGER - RUN 12			
EMS PASSWORD AGING			
	Functional Description	**Test Case No.**	**Test Case Name**
1	Login to OS	PRE_TC-01	OS Access
2	Login to EMS	PRE_TC-02	EMS Access
3	EMS password aging - <admin>	PRE_TC-117	EMS Password Aging
4	Logout of EMS	PRE_TC-102	Logout of EMS
5	Logout of OS	PRE_TC-103	Logout of OS

ELECTION MANAGER - RUN 1			
GENERAL ELECTION			
	Functional Description	**Test Case No.**	**Test Case Name**
1	Login to OS as Administrator using password <admin>	PRE_TC-01	OS Access
2	Login to EMS as Superuser using password <admin>	PRE_TC-02	EMS Access
3	Change password when prompted after initial login to <admin1>	PRE_TC-78	Change EMS Password During Initial Login
4	Import election from Ballot Layout Manager into Election Manager	PRE_TC-ILTS-25	Import Election Into Election Manager
5	Create a Maintenance user	PRE_TC-06	EMS Administration Add User
6	Create a Supervisor user	PRE_TC-06	EMS Administration Add User
7	Open a previous election	PRE_TC-44	DB Management Election DB Edit
8	Add a Technical Support Number to Election Options	PRE_TC-ILTS-26	Election Options - EM
9	View and print Audio Script Report	PRE_TC-ILTS-29	View (and print) Audio Script Report
10	Add sounds to an election	PRE_TC-109	Add Sounds to an Election
11	Review and Proof an election's ballot	PRE_TC-99	Review and Proof Ballot
12	View and print an election's Ballot Proof report	PRE_TC-51	Pre-Election Reports Printing
13	View and print OV System User report	PRE_TC-ILTS-30	View and Print OV System User Report
14	Ballot image transfer	PRE_TC-53	Load Election Definition Ballot Image Transfer

15	Backup database	PRE_TC-90	Backup Database
16	Logout of EMS	PRE_TC-102	Logout of the EMS
17	Logout of OS	PRE_TC-103	Logout of the OS

ELECTION MANAGER - RUN 2			
USER MANAGEMENT & VERIFY USER ROLES			
	Functional Description	**Test Case No.**	**Test Case Name**
1	Login to OS as Administrator using password <admin1>	PRE_TC-01	OS Access
2	Login to EMS as Superuser using password <admin1>	PRE_TC-02	EMS Access
3	Add an Admin user, using user name "emadmin" and password <admin1>	PRE_TC-06	EMS Administration Add User
4	Logout of EMS	PRE_TC-102	Logout of the EMS
5	Login to EMS as "emadmin" using password <admin1>	PRE_TC-02	EMS Access
6	Change password when prompted after login to <admin2>	PRE_TC-78	Change EMS Password During Initial Login
7	Logout of EMS	PRE_TC-102	Logout of the EMS
8	Login to EMS as Superuser using password <admin1>	PRE_TC-02	EMS Access
9	Deactivate user "emadmin"	PRE_TC-ILTS-10	Deactivate User
10	Logout of EMS	PRE_TC-102	Logout of the EMS
11	Login to EMS as "emadmin" using password <admin2>. Note: login should fail	PRE_TC-02	EMS Access
12	Login to EMS as Superuser using password <admin1>	PRE_TC-02	EMS Access
13	Reactivate user "emadmin"	PRE_TC-ILTS-12	Reactivate User
14	Logout of EMS	PRE_TC-102	Logout of the EMS

15	Login to EMS as "emadmin" using password <admin2>	PRE_TC-02	EMS Access
16	Import election from Ballot Layout Manager into Election Manager	PRE_TC-ILTS-25	Import Election Into Election Manager
17	Open a previous election.	PRE_TC-44	DB Management Election DB Edit
18	Add a Technical Support Number to Election Options	PRE_TC-ILTS-26	Election Options - EM
19	View and print Audio Script Report	PRE_TC-ILTS-29	View (and print) Audio Script Report
20	View and print an election's Ballot Proof report	PRE_TC-51	View and Print Ballot Proof Report
21	Review and Proof an election's ballot	PRE_TC-99	Review and Proof Ballot
22	Add sounds to an election	PRE_TC-109	Add Sounds to an Election

ELECTION MANAGER - RUN 2 *(continued)*			
USER MANAGEMENT & VERIFY USER ROLES			
	Functional Description	**Test Case No.**	**Test Case Name**
23	Verify user roles in EMS	PRE_TC-86	Verify User Roles in EMS
24	Close the election	PRE_TC-108	Close the Eclection
25	Delete an election Note: this should fail	PRE_TC-108	Close Election
26	Logout of EMS	PRE_TC-102	Logout of the EMS
27	Login to EMS as Superuser using password <admin1>	PRE_TC-02	EMS Access
28	Add an Admin user, using user name "emadmin2" and password <admin2>	PRE_TC-06	EMS Administration Add User
29	Logout of EMS	PRE_TC-102	Logout of the EMS
30	Login to EMS as "emadmin2" using password <admin2>	PRE_TC-02	EMS Access
31	Change password when prompted after login to "emadmin3"	PRE_TC-78	Change EMS Password During Initial Login
32	Logout of EMS	PRE_TC-102	Logout of the EMS
33	Login to EMS as "emadmin" using password <admin3>	PRE_TC-02	EMS Access
34	Deactivate user <admin3>	PRE_TC-ILTS-10	Deactivate User
35	Logout of EMS	PRE_TC-102	Logout of the EMS
36	Login to EMS as Superuser using password <admin1>	PRE_TC-02	EMS Access
37	Deactivate user "emadmin2"	PRE_TC-ILTS-10	Deactivate User
38	Logout of EMS	PRE_TC-102	Logout of the EMS

39	Login to EMS as "emadmin" using password <admin3>	PRE_TC-02	EMS Access
40	Activate user "emadmin". Note: this should fail	PRE_TC-ILTS-12	Activate User
41	Logout of EMS	PRE_TC-102	Logout of the EMS
42	Login to EMS as Superuser using password <admin2>	PRE_TC-02	EMS Access
43	Delete user "emadmin2"	PRE_TC-05	EMS Profile Delete
44	Logout of EMS	PRE_TC-102	Logout of the EMS
45	Login to EMS as Superuser using password <admin1>	PRE_TC-02	EMS Access
46	Set user role of "emadmin" to Superuser, with password <admin10>	PRE_TC-10	EMS Administration Edit Roles to User

ELECTION MANAGER - RUN 2 *(continued)*			
USER MANAGEMENT & VERIFY USER ROLES			
	Functional Description	**Test Case No.**	**Test Case Name**
47	Change password of user "emadmin" to <admin10>	PRE_TC-104	Change/Update Password
48	Logout of EMS	PRE_TC-102	Logout of the EMS
49	Login to EMS as "emadmin" using password <admin10>	PRE_TC-02	EMS Access
50	Change password when prompted after login to <admin12>	PRE_TC-78	Change EMS Password During Initial Login
51	Verify user roles in EMS	PRE_TC-86	Verify User Roles in EMS
52	Logout of EMS	PRE_TC-102	Logout of the EMS
53	Logout of OS	PRE_TC-103	Logout of the OS

ELECTION MANAGER - RUN 3			
DEFINE NEW SUPERUSER			
	Functional Description	**Test Case No.**	**Test Case Name**
1	Login to OS as Administrator using password <admin10>	PRE_TC-01	OS Access
2	Login to EMS as Superuser using password <admin1>	PRE_TC-02	EMS Access
3	Add a Superuser user, using user name "superuser01" and password <admin11>	PRE_TC-06	EMS Administration Add User
4	Logout of EMS	PRE_TC-102	Logout of the EMS
5	Login to EMS as "superuser01" using password <admin11>	PRE_TC-02	EMS Access
6	Change password when prompted after login to <admin111>	PRE_TC-78	Change EMS Password During Initial Login
7	Logout of EMS	PRE_TC-102	Logout of the EMS
8	Login to EMS as superuser01 using password <admin111>	PRE_TC-02	EMS Access
9	Logout of EMS	PRE_TC-102	Logout of the EMS
10	Logout of OS	PRE_TC-103	Logout of the OS

ELECTION MANAGER - RUN 4			
BACKUP & RESTORE DATABASE, RE-OPEN ELECTION, OPEN MULTIPLE ELECTIONS, REMOVE DATA FROM COMPLETED ELECTION & SEPARATE PARTY SOUNDS FOR CANDIDATES			
	Functional Description	**Test Case No.**	**Test Case Name**
1	Login to OS as Administrator using password <admin10>	PRE_TC-01	OS Access
2	Login to EMS as superuser using password <admin10>	PRE_TC-02	EMS Access
3	_07.emb	PRE_TC-44	DB Management Election DB Edit
4	Backup election database: EMElectionBackup_100_2009_07_10_11_59	PRE_TC-90	Backup Database
5	Close election	PRE_TC-108	Close Election
6	Restore database	PRE_TC-48	DB Management Election DB Restore
7	Attempt to execute Tabulator Client while still executing Election Manager.	PRE_TC-02	EMS Access
8	Open previous election	PRE_TC-44	DB Management Election DB Edit
9	Re-open the exported election	PRE_TC-ILTS-31	Re-Open Exported Election
10	Separate party sound for candidate	PRE_TC-ILTS-28	Audio Options - EM
11	Close election	PRE_TC-108	Close Election
12	Import election from BLM into election manager – primary-01	PRE_TC-ILTS-25	Import Election from BLM into Election Manager

13	Open previous election	PRE_TC-44	DB Management Election DB Edit
14	Verify that the candidates' names will not be accompanied by party name by viewing the election's Audio Script Report	PRE_TC-ILTS-29	View Audio Script Report
15	Open a previous election. – Select "Save"	PRE_TC-44	DB Management Election DB Edit
16	Close the election	PRE_TC-108	Close Election
17	Open a previous election: EMElectionBackup_100_2009_07_10_11_59	PRE_TC-44	DB Management Election DB Edit
18	Remove the Technical Support Number from Election Options	PRE_TC-ILTS-26	Election Options - EM
19	Close the election	PRE_TC-108	Close Election
20	Restore the election database: EMElectionBackup_100_2009_07_10_11_59	PRE_TC-48	DB Management Election DB Restore
ELECTION MANAGER - RUN 4 *(continued)*			
BACKUP & RESTORE DATABASE, RE-OPEN ELECTION, OPEN MULTIPLE ELECTIONS,			
REMOVE DATA FROM COMPLETED ELECTION & SEPARATE PARTY SOUNDS FOR			
CANDIDATES			
	Functional Description	**Test Case No.**	**Test Case Name**
21	Open a previous election: EMElectionBackup_100_2009_07_10_11_59	PRE_TC-44	DB Management Election DB Edit
22	Close the election.	PRE_TC-108	Close Election
23	Logout of EMS	PRE_TC-102	Logout of the EMS
24	Logout of OS	PRE_TC-103	Logout of the OS

ELECTION MANAGER - RUN 5			
DEVELOPING SOUNDS, ADD/EDIT/DELETE SOUNDS, TEXT TRANSLATIONS FOR SOUNDS, SOUND STATUS, EDIT SOUND SCRIPT & TESTING SOUNDS			
	Functional Description	**Test Case No.**	**Test Case Name**
1	Login to OS as Administrator using password <admin10>	PRE_TC-01	OS Access
2	Login to EMS as superuser using password <admin1>	PRE_TC-02	EMS Access
3	Open a previous election	PRE_TC-44	DB Management Election DB Edit
4	Add English sounds to an election, test, and Accept All	PRE_TC-109	Add Sounds to an Election
5	Add Spanish sounds to an election, test, and accept	PRE_TC-109	Add Sounds to an Election
6	Edit sound script text	PRE_TC-ILTS-34	Edit Sound Script Text
7	Remove a sound file from the election (uncheck the file "1_en.mp3")	PRE_TC-111	Remove Sound from Election
8	Close the election	PRE_TC-108	Close Election
9	Logout of EMS	PRE_TC-102	Logout of the EMS
10	Logout of OS	PRE_TC-103	Logout of the OS

ELECTION MANAGER - RUN 6			
ACCESS HELP, ACCESS UNISYS & APPLICATION INFO, EDIT PREFERENCES, VIEW & NAVIGATE BALLOTS & REPORTS			
	Functional Description	**Test Case No.**	**Test Case Name**
1	Login to OS as Administrator using password <admin10>	PRE_TC-01	OS Access
2	Login to EMS as Superuser using password <admin1>	PRE_TC-02	EMS Access
3	Access Help	PRE_TC-113	Access Help
4	Access About	PRE_TC-ILTS-36	Access About (Unisyn and Application)
5	Edit Preferences	PRE_TC-112	Edit Preferences
6	Open a previous election (Gen-01)	PRE_TC-44	DB Management Election DB Edit
7	Review and Proof an election's ballot	PRE_TC-99	Review and Proof Ballot
8	Review ballot using navigation tools	PRE_TC-ILTS-37	Ballot Review Navigation
9	View Audio Script Report	PRE_TC-ILTS-29	View (and print) Audio Script Report
10	Review Audio Script report using navigation tools	PRE_TC-ILTS-17	Navigate Reports
11	Print a Ballot Proof report	PRE_TC-51	Pre-Election Reports Printing
12	Navigate reports	PRE_TC-ILTS-17	Navigate Reports
13	View the OV System User report	PRE_TC-ILTS-30	View and Print OV System User Report
14	Review the OV System User report using navigation tools	PRE_TC-ILTS-17	Navigate Reports
15	Close the election	PRE_TC-108	Close Election
16	Logout of EMS	PRE_TC-102	Logout of the EMS

17	Logout of OS	PRE_TC-103	Logout of the OS

ELECTION MANAGER - RUN 7			
ELECTION OPTIONS, EXPORT TRAINING SECTION, PRINTING OPTIONS & AUDIO OPTIONS			
	Functional Description	**Test Case No.**	**Test Case Name**
1	Login to OS as Administrator using password <admin10>	PRE_TC-01	OS Access
2	Login to EMS as superuser using password <admin1>	PRE_TC-02	EMS Access
3	Open a previous election (Gen-01)	PRE_TC-44	DB Management Election DB Edit
4	Re-open the exported election (Gen-01)	PRE_TC-ILTS-31	Re-Open Exported Election
5	Transfer ballot image	PRE_TC-53	Load Election Definition Ballot Image Transfer
6	Open exported election	PRE_TC-ILTS-31	Reopen Exported Election
7	Set Election Options as listed in Data Sheet	PRE_TC-ILTS-26	Election Options - EM
8	Set Printing Options as listed in Data Sheet	PRE_TC-ILTS-27	Printing Options - EM
9	Separate party sound for candidate	PRE_TC-ILTS-28	Audio Options - EM
10	Verify that the candidates' names will not be accompanied by party name by viewing the election's Audio Script Report	PRE_TC-ILTS-29	View Audio Script Report
9	Ballot image transfer	PRE_TC-53	Load Election Definition Ballot Image Transfer

10	Backup election database: EMElectionBackup_100_2009_07_15_12.emb	PRE_TC-90	Backup Database
11	Logout of EMS	PRE_TC-102	Logout of the EMS
12	Logout of OS	PRE_TC-103	Logout of the OS

ELECTION MANAGER - RUN 8			
SAVE AUDIO AS DEFAULT & RESET FROM DEFAULT, SAVE PRINTING OPTIONS AS DEFAULT & RESET FROM DEFAULT, SAVE ELECTION OPTIONS AS DEFAULT & RESET FROM DEFAULT			
	Functional Description	**Test Case No.**	**Test Case Name**
1	Login to OS as Administrator using password <admin10>	PRE_TC-01	OS Access
2	Login to EMS as Superuser using password <admin1>	PRE_TC-02	EMS Access
3	Restore the election database: EMElectionBackup_100_2009_07_10_11_59	PRE_TC-48	DB Management Election DB Restore
4	Open a previous election: "Gen-01"	PRE_TC-44	DB Management Election DB Edit
5	Re-open the exported election	PRE_TC-ILTS-31	Re-Open Exported Election
6	Check "Use separate party sound for candidate" in Audio Options	PRE_TC-ILTS-28	Audio Options - EM
7	Select "Reset from Defaults" from the Election Options menu to cancel changes and return to default settings	PRE_TC-ILTS-41	Reset from Defaults
8	Check "Use separate party sound for candidate" in Audio Options	PRE_TC-ILTS-28	Audio Options - EM

9	Select "Save as Default" from the Election Options menu to apply changes and make current settings the default settings	PRE_TC-ILTS-40	Save As Default
10	Observe that "Use separate party sound for candidate" is checked in Audio Options, then uncheck it	PRE_TC-ILTS-28	Audio Options - EM
11	Select "Reset from Defaults" from the Election Options menu to cancel changes and return to default settings.	PRE_TC-ILTS-41	Reset from Defaults
12	Observe that "Use separate party sound for candidate" is checked in Audio Options, then uncheck it	PRE_TC-ILTS-28	Audio Options - EM

ELECTION MANAGER - RUN 8 *(continued)*			
SAVE AUDIO AS DEFAULT & RESET FROM DEFAULT, SAVE PRINTING OPTIONS AS DEFAULT & RESET FROM DEFAULT, SAVE ELECTION OPTIONS AS DEFAULT & RESET FROM DEFAULT			
	Functional Description	**Test Case No.**	**Test Case Name**
13	Select "Save as Default" from the Election Options menu to apply changes and make current settings the default settings	PRE_TC-ILTS-40	Save As Default
14	Uncheck the "Auto Print Alerts" option from the Printing Options menu	PRE_TC-ILTS-27	Printing Options - EM
15	Select "Reset from Defaults" from the Election Options menu to cancel changes and return to default settings	PRE_TC-ILTS-41	Reset from Defaults
16	Observe that "Auto Print Alerts" is checked in Printing Options, then uncheck it	PRE_TC-ILTS-27	Printing Options - EM
17	Select "Save as Default" from the Election Options menu to apply changes and make current settings the default settings	PRE_TC-ILTS-40	Save As Default
18	Observe that "Auto Print Alerts" is unchecked in Printing Options, then	PRE_TC-ILTS-27	Printing Options - EM

	check it		
19	Select "Reset from Defaults" from the Election Options menu to cancel changes and return to default settings	PRE_TC-ILTS-41	Reset from Defaults
20	Observe that "Auto Print Alerts" is unchecked in Printing Options, then check it	PRE_TC-ILTS-27	Printing Options - EM
21	Select "Save as Default" from the Election Options menu to apply changes and make current settings the default settings	PRE_TC-ILTS-40	Save As Default
22	Uncheck "Allow Add Precinct" from the Election Options menu	PRE_TC-ILTS-26	Election Options - EM
23	Select "Reset from Defaults" from the Election Options menu to cancel changes and return to default settings	PRE_TC-ILTS-41	Reset from Defaults

ELECTION MANAGER - RUN 8 *(continued)*			
SAVE AUDIO AS DEFAULT & RESET FROM DEFAULT, SAVE PRINTING OPTIONS AS DEFAULT & RESET FROM DEFAULT, SAVE ELECTION OPTIONS AS DEFAULT & RESET FROM DEFAULT			
	Functional Description	**Test Case No.**	**Test Case Name**
24	Observe that "Allow Add Precinct" is checked in the Election Options menu, then uncheck it	PRE_TC-ILTS-26	Election Options - EM
25	Select "Save as Default" from the Election Options menu to apply changes and make current settings the default settings	PRE_TC-ILTS-40	Save As Default
26	Observe that "Allow Add Precinct" is unchecked in the Election Options menu, then check it	PRE_TC-ILTS-26	Election Options - EM
27	Select "Save as Default" from the Election Options menu to apply changes and make current settings the default settings	PRE_TC-ILTS-40	Save As Default
28	Close the election	PRE_TC-108	Close Election

29	Restore the election database: EMElectionBackup_100_2009_07_10_11_59	PRE_TC-48	DB Management Election DB Restore
30	Logout of EMS	PRE_TC-102	Logout of the EMS
31	Logout of OS	PRE_TC-103	Logout of the OS

ELECTION MANAGER - RUN 9			
RELOADING LOADED ELECTIONS			
	Functional Description	**Test Case No.**	**Test Case Name**
1	Login to OS as Administrator using password <admin10>	PRE_TC-01	OS Access
2	Login to EMS as Superuser using password <admin1>	PRE_TC-02	EMS Access
3	Open a previous election	PRE_TC-44	DB Management Election DB Edit
4	Re-open an exported election	PRE_TC-ILTS-31	Re-Open Exported Election
5	Uncheck "Allow Add Precinct" from the Election Options menu	PRE_TC-ILTS-26	Election Options - EM
6	Close the election	PRE_TC-108	Close Election
7	Import election from Ballot Layout Manager into Election Manager	PRE_TC-ILTS-25	Import Election Into Election Manager
8	Open a previous election	PRE_TC-44	DB Management Election DB Edit
9	Observe that "Allow Add Precinct" remains unchecked in the Election	PRE_TC-ILTS-26	Election Options - EM

	Options menu		
10	Close the election	PRE_TC-108	Close Election
11	Restore the election database	PRE_TC-48	DB Management Election DB Restore
12	Logout of EMS	PRE_TC-102	Logout of the EMS
13	Logout of OS	PRE_TC-103	Logout of the OS

ELECTION MANAGER - RUN 10			
APPLICATION LOGS SNAPSHOTS			
	Functional Description	**Test Case No.**	**Test Case Name**
1	Login to OS as Administrator using password <admin10>	PRE_TC-01	OS Access
2	Login to EMS as Superuser using password <admin1>	PRE_TC-02	EMS Access
3	Access the application log	PRE_TC-ILTS-42	Access Application Log
4	Real-time Auditing	PRE_TC-ILTS-49	Audit Ballot Preparation Real-Time Auditing
5	Pre-Election audit records	PRE_TC-ILTS-50	Audit Ballot Preparation Pre-Election Audit Records
6	Review the application log using navigation tools	PRE_TC-ILTS-43	Navigate Logs
7	Take a snapshot of the application log	PRE_TC-ILTS-44	Log Snapshot
8	Logout of EMS	PRE_TC-102	Logout of the EMS
9	Logout of OS	PRE_TC-103	Logout of the OS

ELECTION MANAGER - RUN 11			
CHANGE USER PASSWORD, UNDERVOTE CHECKING ON SELECTED CONTESTS, & PRINTING OPTIONS			
	Functional Description	**Test Case No.**	**Test Case Name**
1	Login to OS as Administrator using password <admin10>	PRE_TC-01	OS Access
2	Login to EMS as Superuser using password <admin1>	PRE_TC-02	EMS Access
3	Change user <users> password to <admins>	PRE_TC-104	Change/Update Password
4	Open a previous election	PRE_TC-44	DB Management Election DB Edit
5	Re-open the exported election	PRE_TC-ILTS-31	Re-Open Exported Election
6	For Undervote Checking in the Election Options menu, check "Selected Contests"	PRE_TC-ILTS-26	Election Options - EM

7	From the Printing Options menu, set Ballot Type to "WRITEIN", for Alert Report Header Title enter "New Alert Timet", and enter the text "Sign Here" for the Signature Line	PRE_TC-ILTS-27	Printing Options - EM
8	From the Undervote Check panel, select US President and US Senator	PRE_TC-ILTS-45	Undervote Check
9	Export Training Election	PRE_TC-53	Load Election Definition Ballot Image Transfer
10	Backup election database: EMElectionBackup_100_2009_07_16_12_26_17.emb	PRE_TC-90	Backup Database
11	Logout of EMS	PRE_TC-102	Logout of the EMS
12	Logout of OS	PRE_TC-103	Logout of the OS

ELECTION MANAGER - RUN 12			
ELECTION PASSWORD, ELECTION OPTIONS UNDERVOTE CHECKING			
	Functional Description	**Test Case No.**	**Test Case Name**
1	Login to OS as Administrator using password <admin10>	PRE_TC-01	OS Access
2	Login to EMS as Superuser using password <admin1>	PRE_TC-02	EMS Access
3	Change user <users> password to <admins>	PRE_TC-104	Change/Update Password
4	Restore the election database: EMElectionBackup_100_2009_07_10_11_59	PRE_TC-48	DB Management Election DB Restore
5	Open a previous election.	PRE_TC-44	DB Management Election DB Edit
6	Re-open the exported election	PRE_TC-ILTS-31	Re-Open Exported Election

7	For Undervote Checking in the Election Options menu, check "All Contests"	PRE_TC-ILTS-26	Election Options - EM
8	Change the Election password to <elect1>	PRE_TC-ILTS-46	Edit Election Password
9	Ballot image transfer Re-open exported election	PRE_TC-53	Load Election Definition Ballot Image Transfer
10	Backup election database: EMElectionBackup_100_2009_07_16_13_59_36.emb	PRE_TC-90	Backup Database
11	Close the election.	PRE_TC-108	Close Election
12	Logout of EMS	PRE_TC-102	Logout of the EMS
13	Logout of OS	PRE_TC-103	Logout of the OS

ELECTION MANAGER - RUN 13			
APPLICATION TIMEOUT AS SUPERUSER, ADMIN, & ADMIN -> SUPERUSER			
	Functional Description	**Test Case No.**	**Test Case Name**
1	Login to OS as Administrator using password <admin10>	PRE_TC-01	OS Access
2	Login to EMS as Superuser using password <admin1>	PRE_TC-02	EMS Access
3	Open a previous election	PRE_TC-44	DB Management Election DB Edit
4	Re-open exported election	PRE_TC-ILTS-31	Re-open Exported Election
5	Check "Use separate party sound for candidate" in Audio Options, but DO NOT SAVE changes	PRE_TC-ILTS-28	Audio Options - EM

6	Take no action within the EM application for 15 minutes; i.e., wait for application timeout	PRE_TC-114	Application Timeout
7	Login to EMS as Superuser using password <admin1>	PRE_TC-02	EMS Access
8	Verify that "Use separate party sound for candidate" is checked in Audio Options, and verify that the Save button is accessible indicating changes are not saved	PRE_TC-ILTS-28	Audio Options - EM
9	Close the election. When prompted to save changes, select "No"	PRE_TC-108	Close Election
10	Add an Admin user, using user name "emadministrator" and password <admin3>	PRE_TC-06	EMS Administration Add User
11	Logout of EMS	PRE_TC-102	Logout of the EMS
12	Login to EMS as "emadministrator" using password <admin3>	PRE_TC-02	EMS Access
13	Change password when prompted after login to <admin123>	PRE_TC-78	Change EMS Password During Initial Login
14	Open a previous election	PRE_TC-44	DB Management Election DB Edit
15	Check "Use separate party sound for candidate" in Audio Options, but DO NOT SAVE changes	PRE_TC-ILTS-28	Audio Options - EM
16	Take no action within the EM application for 15 minutes; i.e., wait for application timeout	PRE_TC-114	Application Timeout

ELECTION MANAGER - RUN 13 *(continued)*			
APPLICATION TIMEOUT AS SUPERUSER, ADMIN, & ADMIN -> SUPERUSER			
	Functional Description	**Test Case No.**	**Test Case Name**
17	Login to EMS as "emadministrator" using password <admin123>	PRE_TC-02	EMS Access
18	Verify that "Use separate party sound for candidate" is checked in Audio Options, and verify that the Save button is accessible indicating changes are not saved	PRE_TC-ILTS-28	Audio Options - EM
19	Close the election. When prompted to save changes, select "No"	PRE_TC-108	Close Election

20	Open the previous election	PRE_TC-44	DB Management Election DB Edit
21	Check "Use separate party sound for candidate" in Audio Options, but DO NOT SAVE changes	PRE_TC-ILTS-28	Audio Options - EM
22	Take no action within the EM application for 15 minutes; i.e., wait for application timeout	PRE_TC-114	Application Timeout
23	Login to EMS as Superuser using password <admin1>	PRE_TC-02	EMS Access
24	Verify that "Use separate party sound for candidate" is checked in Audio Options, and verify that the Save button is accessible indicating changes are not saved	PRE_TC-ILTS-28	Audio Options - EM
25	Close the election. When prompted to save changes, select "No"	PRE_TC-108	Close Election
26	Logout of EMS	PRE_TC-102	Logout of the EMS
27	Logout of OS	PRE_TC-103	Logout of the OS

ELECTION MANAGER - RUN 14			
SET CLOSE TIME			
	Functional Description	**Test Case No.**	**Test Case Name**
1	Login to OS	PRE_TC-01	OS Access
2	Login to EMS	PRE_TC-02	EMS Access
3	Open previous election	PRE_TC-44	DB Management Election DB Edit
4	Election options - Set close time: 11:15 AM, Save	PRE_TC-ILTS-26	Create Election Cross Party Endorsement
5	Ballot image transfer (export election)	PRE_TC-93	Edit Header
6	Backup election	PRE_TC-90	Backup Database
7	Logout of EMS	PRE_TC-102	Logout of EMS
8	Logout of OS	PRE_TC-103	Logout of OS

ELECTION MANAGER - RUN 15			
PASSWORD EXPIRATION, CONCLUDE ELECTION & SHOW ALL ELEMENTS			
	Functional Description	**Test Case No.**	**Test Case Name**
1	Login to OS as root using password <root>	PRE_TC-01	OS Access
2	Adjust the OS clock to > 6 months from current date/time	PRE_TC-115	Adjust Operating System Clock
3	Logout of OS and reboot system	PRE_TC-103	Logout of the OS
4	Login to OS as user "administrator" using new password <123admin>. Note: because of password aging, this should force a password change	PRE_TC-01 / PRE_TC-116	OS Access / OS Password Aging

5	Login to EMS as superuser using password "superuser1". This should force a change of password. Set <123admin> as new password	PRE_TC-02 / PRE_TC-117	EMS Access / EMS Password Aging
6	Open a previous election	PRE_TC-44	DB Management Election DB Edit
7	Completely close the election to changes by activating the Conclude Election button.	PRE_TC-ILTS-32	Conclude Election
8	Close the election	PRE_TC-108	Close Election
9	Turn on the Show All option from the Election drop-down menu	PRE_TC-ILTS-49	Show All Elections
10	Logout of EMS	PRE_TC-102	Logout of the EMS
11	Logout of OS	PRE_TC-103	Logout of the OS

SOFTWARE SERVER - RUN 1				
GENERAL ELECTION				
OVO and OVI SHOULD BE TURNED ON AND CONNECTED TO PC VIA ETHERNET HUB				
	System	**Functional Description**	**Test Case No.**	**Test Case Name**
1	OVO	Login to OS as Admin	PRE_TC-01	OS Access
2	OVO	Login to EMS using release CD - Release key: <1928374a>	PRE_TC-ILTS-50	Login to EMS Using Release CD

3	OVO	Activate auto-load software	PRE_TC-ILTS-51	Activate Auto Load Software
4	OVO	Access maintenance menu - Password: <vote>	PRE_TC-ILTS-52	Access Maintenance Menu on OVD
5	OVO	View machine info & verify software version	PRE_TC-ILTS-53	View Machine (OVD) Information
6	OVO	Logout of EMS	PRE_TC-102	Logout of EMS
7	OVI	Login to EMS using release CD - Release key: <1928374a>	PRE_TC-ILTS-50	Login to EMS Using Release CD
8	OVI	Activate auto-load software	PRE_TC-ILTS-51	Activate Auto Load Software
9	OVI	Access maintenance menu - Password: <vote>	PRE_TC-ILTS-52	Access Maintenance Menu on OVD
10	OVI	View machine info & verify software version	PRE_TC-ILTS-53	View Machine (OVD) Information
11	OVI/OVO	Logout of EMS	PRE_TC-102	Logout of EMS
12	OVI/OVO	Logout of OS	PRE_TC-103	Logout of OS

SOFTWARE SURVER - RUN 2				
VIEW RELEASE FILES, MANUAL LOAD OVI, UPDATE VALIDATOR, CLEAR ACTIVITY, VIEW MACHINE & RELEASE LOGS				
	System	**Functional Description**	**Test Case No.**	**Test Case Name**
1		Login to OS	PRE_TC-01	OS Access
2		Login to EMS using release CD - <1928374a>	PRE_TC-ILTS-50	Login to EMS Using Release CD
3		View release files & boot OVO	PRE_TC-ILTS-54	View Release Files

4		Manual load software - Validator password: <1928374a>	PRE_TC-ILTS-55	Manual Load Software
5		Clear activity	PRE_TC-ILTS-56	Clear Activity
6		Real time auditing	PRE_TC-49	Audit Ballot Preparation Real-Time Auditing
7		View machine log	PRE_TC-ILTS-57	View Machine Log
8		View release log	PRE_TC-ILTS-58	View Release Log - SS
9		Access maintenance menu on OVO - Password: <vote>	PRE_TC-ILTS-52	Access Maintenance Menu on OVD
10		View machine info, verify software version, & power off OVO	PRE_TC-ILTS-53	View Machine (OVD) Information
11		Logout of EMS	PRE_TC-102	Logout of EMS
12		Logout of OS	PRE_TC-103	Logout of OS

SOFTWARE SERVER - RUN 3				
VIEW RELEASE FILES, MANUAL LOAD OVI, UPDATE VALIDATOR, CLEAR ACTIVITY, VIEW MACHINE & RELEASE LOGS				
	System	**Functional Description**	**Test Case No.**	**Test Case Name**
1		Login to OS	PRE_TC-01	OS Access
2	OVI	Login to EMS using release CD - Release key: <1928374a> (from Run 1)	PRE_TC-ILTS-50	Login to EMS Using Release CD

3		View release files & boot OVI	PRE_TC-ILTS-54	View Release Files
4		Manually load software - Validator password: <1928374a>	PRE_TC-ILTS-55	Manual Load Software
5		Clear activity in completed machines window	PRE_TC-ILTS-56	Clear Activity
6		Real time auditing	PRE_TC-49	Audit Ballot Preparation Real-Time Auditing
7		View machine log	PRE_TC-ILTS-57	View Machine Log
8		View release log	PRE_TC-ILTS-58	View Release Log - SS
9		Access maintenance menu on OVI - Password: <vote>	PRE_TC-ILTS-52	Access Maintenance Menu on OVD
10		View machine info, verify software version & power off OVI	PRE_TC-ILTS-53	View Machine (OVD) Information
11		Logout of EMS	PRE_TC-102	Logout of EMS
12		Logout of OS	PRE_TC-103	Logout of OS

SOFTWARE SERVER - RUN 4				
ACCESS HELP, ACCESS ABOUT, APPLICATION LOGS/AUDIT RECORDS, NAVIGATE LOGS, & LOG SNAPSHOT				
	System	**Functional Description**	**Test Case No.**	**Test Case Name**
1		Login to OS	PRE_TC-01	OS Access
2		Login to EMS using release CD - OVO	PRE_TC-ILTS-50	Login to EMS using release CD - OVD
3		Access help	PRE_TC-113	Access Help

4		Access About	PRE_TC-ILTS-36	Access About (Unisyn & Application)
5		Access application logs	PRE_TC-ILTS-42	Access Application Log
6		Real time auditing	PRE_TC-49	Audit Ballot Preparation Real-Time Auditing
8		Navigate logs	PRE_TC-ILTS-43	Navigate Logs
9		Log snapshot	PRE_TC-ILTS-44	Log Snapshot
10		Logout of EMS	PRE_TC-102	Logout of EMS
11		Logout of OS	PRE_TC-103	Logout of OS

SOFTWARE SERVER - RUN 5					
INVALID RELEASE CDS					
CORRUPT SOFTWARE RELEASES MUST BE AVAILABLE					
	System	**Functional Description**	**Test Case No.**	**Test Case Name**	**Results**
1		Login to OS	PRE_TC-01	OS Access	

2	OVO	Login to EMS using release CD - add a file	PRE_TC-ILTS-50	Login to EMS Using Release CD	FAILS
3	OVO	Login to EMS using release CD - delete a file	PRE_TC-ILTS-50	Login to EMS Using Release CD	FAILS
4	OVO	Login to EMS using release CD – alter/corrupt a file	PRE_TC-ILTS-50	Login to EMS Using Release CD	FAILS
5	OVI	Login to EMS using release CD - add a file	PRE_TC-ILTS-50	Login to EMS Using Release CD	FAILS
6	OVI	Login to EMS using release CD - delete a file	PRE_TC-ILTS-50	Login to EMS Using Release CD	FAILS
7	OVI	Login to EMS using release CD – alter/corrupt a file	PRE_TC-ILTS-50	Login to EMS Using Release CD	FAILS
8		Logout of OS	PRE_TC-103	Logout of OS	

SOFTWARE SERVER - RUN 6				
LOADING OVO & OVI TOGETHER				
	System	**Functional Description**	**Test Case No.**	**Test Case Name**
1		Login to OS	PRE_TC-01	OS Access
2	OVO	Login to EMS using release CD - <1928374a>	PRE_TC-ILTS-50	Login to EMS Using Release CD

Turn on OVO & OVI units connected to server				
Error message appears in active machine's activity window				
3		Clear activity - clear active machine's pane	PRE_TC-ILTS-56	Clear Activity
4		Clear activity - clear completed machine's pane	PRE_TC-ILTS-56	Clear Activity
Power off both units				
5		Logout of EMS	PRE_TC-102	Logout of EMS
6	OVI	Login to EMS using release CD - <1928374a>	PRE_TC-ILTS-50	Login to EMS Using Release CD
Turn on OVO & OVI units connected to server				
Error message appears in active machine's activity window				
7		Logout of EMS	PRE_TC-102	Logout of EMS
8		Logout of OS	PRE_TC-103	Logout of OS

ELECTION SERVER - RUN 1				
AUTOLOAD OVO & OVI, VERIFY MACHINE UPDATE OF DATE & TIME, VERIFY ELECTION LOADED				
	System	**Functional Description**	**Test Case No.**	**Test Case Name**
1		Login to OS	PRE_TC-01	OS Access

2		Login to EMS using election CD - User: maintenance Password: <gtrhtr> & verify date & time	PRE_TC-ILTS-59	Login to EMS Using Election CD
3		Autoload election	PRE_TC-ILTS-62	Auto Load Election
Boot OVO & OVI connected to the server				
4	OVO	View machine log & verify update of time & date	PRE_TC-ILTS-57	View Machine Log
5	OVI	View machine log & verify update of time & date	PRE_TC-ILTS-57	View Machine Log
6	OVO	Access maintenance menu on OVO	PRE_TC-ILTS-52	Access Maintenance Menu on OVD
7	OVO	View machine info - verify election is loaded	PRE_TC-ILTS-53	View Machine (OVD) Information
8	OVI	Access maintenance menu on OVI	PRE_TC-ILTS-52	Access Maintenance Menu on OVD
9	OVI	View machine info - verify election is loaded	PRE_TC-ILTS-53	View Machine (OVD) Information
10		Logout of EMS	PRE_TC-102	Logout of EMS
11		Logout of OS	PRE_TC-103	Logout of OS
Power off OVO & OVI units				

ELECTION SERVER - RUN 2				
MANUAL LOAD OF OVO & OVI, MAINTENANCE PASSWORD, CLEAR ACTIVITY OF COMPLETED MACHINES				
	System	**Functional Description**	**Test Case No.**	**Test Case Name**
1		Login to OS	PRE_TC-01	OS Access

2		Login to EMS using election CD - verify date & time	PRE_TC-ILTS-59	Login to EMS Using Election CD
Power on OVO & OVI units				
3		Access maintenance menu on OVO	PRE_TC-ILTS-52	Access Maintenance Menu on OVD
4	OVO	Manual load of election	PRE_TC-ILTS-63	Manual Load Election
5		Access maintenance menu on OVO-OVI	PRE_TC-ILTS-52	Access Maintenance Menu on OVD
6	OVI	Manual load of election	PRE_TC-ILTS-63	Manual Load Election
7		Clear activity - completed machines	PRE_TC-ILTS-56	Clear Activity
8		Logout of EMS	PRE_TC-102	Logout of EMS
9		Logout of OS	PRE_TC-103	Logout of OS

ELECTION SERVER - RUN 3				
SUPERVISOR PASSWORD, CROSSOVER CABLE LOAD OF OVO & OVI				
	System	**Functional Description**	**Test Case No.**	**Test Case Name**
1		Login to OS	PRE_TC-01	OS Access

2		Login to EMS using election CD - User: supervisor, Password: <gtrhtr>	PRE_TC-ILTS-59	Login to EMS Using Election CD
3		Autoload election	PRE_TC-ILTS-62	Auto Load Election
** Connect OVO via crossover cable & power up the OVO**				
4	OVO	Access maintenance menu on OVO - Maintenance Password: <gtrhtr>	PRE_TC-ILTS-52	Access Maintenance Menu on OVD
5	OVO	View machine Info & verify election is loaded	PRE_TC-ILTS-53	View Machine (OVD) Information
** Power off OVO**				
** Connect OVI via crossover cable & power up the OVI**				
6	OVI	Access maintenance menu on OVI - Maintenance Password: <vote>	PRE_TC-ILTS-52	Access Maintenance Menu on OVD
7	OVI	Manually load election	PRE_TC-ILTS-63	Manual Load Election
8	OVI	View machine info & verify election is loaded	PRE_TC-ILTS-53	View Machine (OVD) Information
Power off OVI				
9		Logout of EMS	PRE_TC-102	Logout of EMS
10		Logout of OS	PRE_TC-103	Logout of OS

ELECTION SERVER - RUN 4				
ADJUST OS CLOCK'S TIMEZONE, TIMEZONE MISMATCH FOR OVO/OVI, CLEAR ACTIVITY FOR ACTIVE OVO & COMPLETED OVI				
	System	**Functional**	**Test Case No.**	**Test Case Name**

		Description		
1		Login to OS	PRE_TC-01	OS Access
2		Adjust operating system clock -set time zone to Pacific time zone	PRE_TC-115	Adjust Operating System Clock
3		Logout of OS	PRE_TC-103	Logout of OS
4		Login to OS	PRE_TC-01	OS Access
5		Login to EMS using election CD - User: eouser, Password: <gtrhtr>, verify date & time	PRE_TC-ILTS-59	Login to EMS Using Election CD
6		Autoload election	PRE_TC-ILTS-62	Auto Load Election
** Boot up OVO & OVI connected to server via hub**				
7		Clear activity - active machines: OVO time zone mismatch	PRE_TC-ILTS-56	Clear Activity
8		Clear activity - active machines: OVI load election failed	PRE_TC-ILTS-56	Clear Activity
9		Logout of EMS	PRE_TC-102	Logout of EMS
Power down OVO & OVI machines				
10		Adjust operating system clock - set time zone to central time zone	PRE_TC-115	Adjust Operating System Clock
11		Logout of OS	PRE_TC-103	Logout of OS

ELECTION SERVER - RUN 5				
ELECTION PROPERTIES, ELECTION LOGS, APPLICATION LOG NAVIGATION & LOG SNAPSHOT, ACCESS HELP & ABOUT				
	System	**Functional**	**Test Case No.**	**Test Case Name**

		Description		
1		Login to OS	PRE_TC-01	OS Access
2		Login to EMS using election CD - User: esuser, Password: <maint>	PRE_TC-ILTS-59	Login to EMS Using Election CD
3		View election properties	PRE_TC-ILTS-60	View Election Properties
4		View election log	PRE_TC-ILTS-61	View Election Log
5		Access application log	PRE_TC-ILTS-42	Access Application Log
6		Real time auditing	PRE_TC-49	Audit Ballot Preparation Real-Time Auditing
8		Navigate logs	PRE_TC-ILTS-43	Navigate Logs
9		Log snapshot	PRE_TC-ILTS-44	Log Snapshot
7		Pre-election audit records	PRE_TC-50	Audit Ballot Preparation Pre-Election Audit Records
10		Access help	PRE_TC-113	Access Help
11		Access about	PRE_TC-ILTS-36	Access About (Unisyn & Application)
12		Logout of EMS	PRE_TC-102	Logout of EMS
13		Logout of OS	PRE_TC-103	Logout of OS

ATTACHMENT B

2005 VVSG REQUIREMENTS CHECKLIST

VVSG Req. No.	2005 VVSG Volume I Functional Requirement Matrix	REQUIREMENTS MET
Volume I	**Voting System Performance Guidelines**	
Section 2	**Functional Requirements**	
2.1	**Overall System Capabilities**	
2.1.2	**Accuracy**	
a.	Recording the election contests, candidates, and issues exactly as defined by election officials.	**X**
b.	Recording the appropriate options for casting and recording votes.	**X**
c.	Recording of each vote precisely as indicated by the voter and have the ability to produce an accurate report of all votes cast.	**X**
2.1.3	**Error Recovery**	
b.	Resumption of normal operation following the correction of a failure in a memory component, or in a data processing component, including the central processing unit.	**X**
c.	Recovery from any other external condition that causes equipment to become inoperable, provided that catastrophic electrical or mechanical damage due to external phenomena has not occurred.	**X**
2.1.4	**Integrity**	
f.	Protection against any attempt at improper data entry or retrieval.	**X**
g.	Records and reports the date and time of any normal or abnormal events.	**X**
h.	Maintenance of a permanent record of original audit data that cannot be modified or overridden but may be augmented by designated authorized officials in order to adjust for errors or omissions (e.g., during the canvassing process).	**X**
i.	Detect and record every event, including the occurrence of an error condition that the system cannot overcome, and time-dependent or programmed events that occur without the intervention of the voter or a polling place operator.	**X**
2.1.5.1a.	**Time, Sequence, and Preservation of Audit Records**	
i.	Create and maintain a real-time audit record.	**X**
ii.	System has a real-time clock, and maintains an absolute record of time and date, or record relative to some event whose time and data are known and recorded.	**X**
iii.	All audit record entries include the time-and-date stamp.	**X**
iv.	The audit record shall be active whenever the system is in an operating mode. Record shall be available at all times, though it need not be continually visible.	**X**
v.	The generation of audit record entries shall not be terminated or altered by program control, or by the intervention of any person.	**X**
vi.	System not affected by interruption of power.	**X**
vii.	Printable copy of the audit record. Separate printer is not required, and the record may be produced on the standard system printer if all the following conditions are met:	**X**
	Generation of audit trail records does not interfere with production of output reports	**X**

VVSG	2005 VVSG Volume I	REQUIREMENTS MET
Req. No.	**Functional Requirement Matrix**	
Volume I	**Voting System Performance Guidelines**	
Section 2	**Functional Requirements**	
2.1	**Overall System Capabilities**	
2.1.5.1a.	**Time, Sequence, and Preservation of Audit Records**	
vii.	Entries can be identified so as to facilitate their recognition, segregation, and retention	**X**
	Audit record entries are kept physically secure	**X**
2.1.5.1b.	**Error messages**	
i.	Generation, storage and reporting of all error messages as they occur to the user.	**X**
ii.	All error messages requiring intervention by an operator or precinct official are displayed or printed unambiguously in easily understood language text, or by means of other suitable visual indicators.	**X**
iii.	System use of numerical error codes for trained technician maintenance or repair containing the text corresponding to the code is self-contained, or affixed inside the unit device.	**X**
iv.	All error messages written clearly.	**X**
v.	The message cue for all systems shall clearly state the action to be performed in the event that voter or operator response is required.	**X**
vi.	That an erroneous response would not lead to irreversible error.	**X**
vii.	Nested error conditions are corrected in a controlled sequence such that system status shall be restored to the initial state existing before the first error occurred.	**X**
2.1.5.1c.	**Status Messages**	
	The display and report of critical status messages use unambiguous indicators or English language.	**X**
	For the capability of status messages as part of the real-time audit record.	**X**
	For the capability for a jurisdiction to designate critical status messages.	**X**
2.1.5.2	**Use of Shared Computing Platforms**	
	COTS operating systems hosting election software: The local terminal (display screen and keyboard) and external connection devices (network cards and ports) configuration only for authorized, identified users.	**X**
	COTS operating systems hosting election software: The operating system audit is enabled for all session openings and closings, for all process executions and terminations, and for the alteration or deletion of any memory or file object.	**X**
	COTS operating systems hosting election software: The system is configured to execute only intended and necessary processes during the execution of election software.	**X**

VVSG Req. No.	2005 VVSG Volume I Functional Requirement Matrix	REQUIREMENTS MET
Volume I	**Voting System Performance Guidelines**	
Section 2	**Functional Requirements**	
2.1	**Overall System Capabilities**	
2.1.5.2	**Use of Shared Computing Platforms**	
	COTS operating systems hosting election software: The system has been configured to halt election software processes upon the termination of any critical system process (such as system audit) during the execution of election software.	**X**
2.1.6	**Election Management System**	
	An EMS shall generate and maintain a database, or one or more interactive databases, that enables election officials or their designees to perform the following functions:	
a.	Definition of the political subdivision boundaries and multiple election districts, as indicated in the system documentation.	**X**
b.	Identification of contests, candidates, and issues.	**X**
c.	Definition of ballot formats and appropriate voting options.	**X**
d.	Generation of ballots and election-specific programs for vote recording and vote counting equipment.	**X**
e.	Installation of ballots and election-specific programs.	**X**
f.	Validation that ballots and programs have been properly prepared and installed.	**X**
g.	Accumulated vote totals at multiple reporting levels as indicated in the system documentation.	**X**
h.	Generation of post-voting reports per Section 2.4 [Post-voting Capabilities].	**X**
i.	Process and produce audit reports of the data indicated in Section 5.5 [sic] [5.4 Audit Record Data]	**X**
2.1.7.2	**Voting Variation**	
	The Technical Data Package accompanying the system shall specifically identify which of the following items *can* and *cannot* be supported by the voting system, as well as *how* the voting system can implement the items supported:	
	Support of open primaries.	**X**
	Support of partisan offices.	**X**
	Support of non-partisan offices.	**X**
	Support of write-in voting.	**X**
	Support of ballot rotation.	**X**
	Support of straight party voting.	**X**
	Support of split precincts.	**X**
	Support of vote for N of M.	**X**
	Support of ranked order voting.	**X**
	Support of provisional or challenged ballots.	**X**

VVSG Req. No.	2005 VVSG Volume I Functional Requirement Matrix	REQUIREMENTS MET
Volume I	**Voting System Performance Guidelines**	
Section 2	**Functional Requirements**	
2.1	**Overall System Capabilities**	
2.1.9	**Telecommunications**	
	Transmission of data during pre-voting, voting or post-voting activities includes capabilities to ensure data are transmitted with no alternation or unauthorized disclosure during transmission for:	
	• Ballot Definition	**X**
2.2	**Pre-voting Capabilities**	
	All voting systems shall provide capabilities to support:	
	• Ballot preparation	**X**
	• Election programming	**X**
	• Ballot and program installation and control	**X**
2.2.1	**Ballot Preparation**	
2.2.1.1	**General Capabilities**	
	Systems provide the general capability for ballot preparation, ballot formatting and ballot production.	
a.	Automatic formatting of ballots in accordance with the requirements for offices, candidates, and measures qualified to be placed on the ballot for each political subdivision and election district.	**X**
b.	**Collecting and maintaining the following data:**	
	i. Offices and their associated labels and instructions	**X**
	ii. Candidate names and their associated labels	**X**
	iii. Issues or measures and their associated text	**X**
d.	Generating ballots that segregate the choices in partisan races by party affiliation for primary election.	**X**
e.	Generation of ballots containing identifying codes or marks uniquely associated with each format.	**X**
f.	Vote response fields, selection buttons, or switches properly align with the specific candidate names and/or issues printed on the ballot display, ballot card or sheet, or separate ballot pages.	**X**
g.	For paper-based systems, voters are able to make selections by making a mark in areas designated for this purpose upon each ballot card or sheet.	**X**
h.	For paper-based systems, marksense systems ensure that the timing marks align properly with the vote response fields.	**X**
2.2.1.2	**Ballot Formatting**	
	All voting systems shall provide a capability for:	
a.	Creation of newly defined elections.	**X**
b.	Rapid and error-free definition of elections and their associated ballot layouts.	**X**
c.	Uniform allocation of space and fonts used for each office, candidate, and contest such that the voter perceives no active voting position to be	**X**

	preferred to any other.	
d.	Simultaneous display of the maximum number of choices for a single contest as indicated by the vendor in the system documentation.	**X**
e.	Retention of previously defined formats for an election.	**X**

VVSG	2005 VVSG Volume I	REQUIREMENTS MET
Req. No.	**Functional Requirement Matrix**	
Volume I	**Voting System Performance Guidelines**	
Section 2	**Functional Requirements**	
2.2.1.2	**Ballot Formatting**	
	All voting systems shall provide a capability for:	
f.	Prevention of unauthorized modification of any ballot formats.	**X**
g.	Modification by authorized persons of a previously defined ballot format for use in a subsequent election.	**X**
2.2.1.3	**Ballot Production**	
	The voting system shall provide a means of printing or otherwise generating a ballot display that can be installed in all voting equipment for which it is intended.	
	All voting systems shall provide the following capabilities:	
a.	The electronic display or printed document on which the user views the ballot is capable of rendering an image of the ballot in any of the languages required by The Voting Rights Act of 1965, as amended	**X**
	The following Languages were displayed during test:	English/Spanish
b.	The electronic display or printed document on which the user views the ballot does not show any advertising or commercial logos of any kind, whether public service, commercial, or political, unless specifically provided for in State law. Electronic displ	**X**
c.	The ballot conforms to vendor specifications for type of paper stock, weight, size, shape, size and location of punch or mark field used to record votes, folding, bleed through, and ink for printing if paper ballot documents or paper displays are part of	**X**
2.2.2	**Election Programming** Process by which election officials or their designees use election databases and vendor system software to logically define the voter choices associated with the contents of the ballots	
a.	Logical definition of the ballot, including the definition of the number of allowable choices for each office and contest.	**X**
b.	Logical definition of political and administrative subdivisions, where the list of candidates or contests varies between polling places.	**X**
c.	Exclusion of any contest on the ballot in which the voter is prohibited from casting a ballot because of place of residence, or other such administrative or geographical criteria.	**X**
d.	Ability to select from a range of voting options to conform to the laws of the jurisdiction in which the system will be used.	**X**
e.	Generation of all required master and distributed copies of the voting program, in conformance with the definition of the ballots for each voting device and polling place, and for each tabulating device.	**X**
2.2.3	**Ballot and Program Installation and Control**	
	All systems provide a means of installing ballots and programs on each	**X**

	piece of polling place or central count equipment according to the ballot requirements of the election and the jurisdiction.	

VVSG Req. No.	2005 VVSG Volume I Functional Requirement Matrix	REQUIREMENTS MET
Volume I	**Voting System Performance Guidelines**	
Section 2	**Functional Requirements**	
2.2.3	**Ballot and Program Installation and Control**	
a.	A detailed work plan or other documentation providing a schedule and steps for the software and ballot installation, which includes a table outlining the key dates, events and deliverables	**X**
b.	Capability for automatically verifying that the software has been properly selected and installed in the equipment or in programmable memory devices and for indicating errors.	**X**
c.	The capability for automatically validating that software correctly matches the ballot formats that it is intended to process, for detecting errors, and for immediately notifying an election official of detected errors.	**X**
2.3.3.1	**Common Requirements**	
a.	All systems shall provide text that is at least 3 millimeters high and provide the capability to adjust or magnify the text to an apparent size of 6.3 millimeters.	**X**
2.4.3	**Producing Reports**	
	All systems shall be able to create reports summarizing the vote data on multiple levels.	
f.	All systems shall provide capabilities to produce all system audit information required in Subsection 5.4 [Audit Record Data] in the form of printed reports, or in electronic memory for printing centrally.	**X**
3.1.3	**Alternative Languages**	
	The voting equipment shall be capable of presenting the ballot, ballot selections, review screens and instructions in any language required by state or federal law.	**X**
	HAVA Section 301 (a) (4) states that the voting system shall provide alternative language accessibility pursuant to the requirements of Section 203 of the Voting Rights Act f 1965 (42 U.S.C. 1973aa-1a)….As a practical matter, alternative language access i	**X**
3.1.5	**Perceptual Issues**	
h.	All text intended for the voter should be presented in a sans serif font.	**X**
4.1.3	**Election Management System (EMS) Requirements**	
4.1.3.1	**Recording Requirements**	
	Voting systems shall accurately record all election management data entered by the user, including election officials or their designees.	
	For recording accuracy, all systems shall:	
	a. Record every entry made by the user	**X**
	b. Add permissible voter selections correctly to the memory components of the device	**X**

	c. Verify the correctness of detection of the user selections and the addition of the selections correctly to memory	**X**
	d. Add various forms of data entered directly by the election official or designee, such as text, line art, logos, and images	**X**

VVSG	2005 VVSG Volume I	REQUIREMENTS MET
Req. No.	**Functional Requirement Matrix**	
Volume I	**Voting System Performance Guidelines**	
4.1.3	**Election Management System (EMS) Requirements**	
4.1.3.1	**Recording Requirements**	
	e. Verify the correctness of detection of data entered directly by the user and the addition of the selections correctly to memory	**X**
	g. Log corrected data errors by the voting system	**X**
4.1.8.2	**Data Report Generation**	
	All voting systems shall include report generators for producing output reports at the device, polling place, and summary level, with provisions for administrative and judicial subdivisions as required by the using jurisdiction.	**X**
5.4	**Audit Record Data**	
5.4.1	**Pre-election Audit Records**	
	During election definition and ballot preparation, the system shall audit the preparation of the baseline ballot formats and modifications to them, a description of these modifications, and corresponding dates.	**X**
a.	The log shall include the allowable number of selections for an office or issue;	**X**
b.	The log shall include the combinations of voting patterns permitted or required by the jurisdiction;	**X**
c.	The log shall include the inclusion or exclusion of offices or issues as the result of multiple districting within the polling place;	**X**
d.	The log include any other characteristics that may be peculiar to the jurisdiction, the election, or the polling place's location;	**X**
e.	The log shall include manual data maintained by election personnel;	**X**
f.	The log shall include samples of all final ballot formats; and	**X**
g.	The log shall include ballot preparation edit listings.	**X**
6.2.7	**Confirmation**	
	The telecommunications components of a voting system shall notify the user of the successful or unsuccessful completion of the data transmission.	**X**
	In the event of unsuccessful transmission the user shall be notified of the action to be taken.	**X**
7	**Security Requirements**	
7.2	**Access Controls**	
7.2.1	**General Access Control Policy**	
	The vendor shall specify the general features and capabilities of the access control policy recommended to provide effective voting system security.	
	The vendor shall provide a description of recommended policies for:	
	a. Software access controls;	**X**

	b. Hardware access controls;	**X**
	c. Communications;	**X**
	d. Effective password management;	**X**
	e. Protection abilities of a particular operating system;	**X**

VVSG	2005 VVSG Volume I	REQUIREMENTS MET
Req. No.	**Functional Requirement Matrix**	
Volume I	**Voting System Performance Guidelines**	
7	**Security Requirements**	
7.2	**Access Controls**	
7.2.1	**General Access Control Policy**	
	f. General characteristics of supervisory access privileges;	**X**
	g. Segregation of duties; and	**X**
	h. Any additional relevant characteristics.	**X**
7.2.1.1	**Individual Access Privileges**	
	a. Identification of each person to whom access is granted, and the specific functions and data to which each person holds authorized access;	**X**
	b. Individual authorizations limited to a specific time, time interval, or phase of the voting or counting operations; and	**X**

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VOTING TEST SUITE
TEST CASE PROCEDURE SPECIFICATION
FOR
UNISYN VOTING SOLUTIONS, INC.
OPENELECT VOTING SYSTEM, VERSION 1.0

Prepared by:

Jack Cobb 12-28-09

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NVLAP LAB CODE 200771-0

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1.0 INTRODUCTION

The purpose of the Test Case Procedure Specification is to document the "Voting" functionality of the Unisyn OpenElect Voting System (OVS), version 1.0. As part of the Functional Configuration Audit Wyle must verify the OVS performs as documented in the Unisyn supplied Technical Data Package submitted to Wyle for the test campaign. Wyle must also validate that the OVS meets the requirements of the 2005 EAC Voluntary Voting Systems Guidelines (VVSG). As part of the Functional Configuration Audit, Wyle qualified personnel will use this document as the procedure to execute the entire "Voting" test suite.

1.0 Scope

The scope of this procedure will focus on all activities performed by pollworkers, voters, and warehouse maintenance technicians after an election has been loaded, through the processing of special votes such as absentee and provisional ballots. These activities include pre-election logic testing, diagnostic tests, opening the polls, activating ballots, voting and casting both normal and audio ballots, utilizing the usability and accessibility aspects of the accessible voting station, closing the polls, printing machine reports, performing post-election maintenance tasks, and executing special voting sessions such as the processing of absentee and provisional ballots. The specific components of the OVS used in this test suite are the:

- OpenElect Voting Interface (OVI)
- OpenElect Voting Optical scanner (OVO)

1.1 References

The documents listed below were used in the development of the Test Plan and are utilized to perform certification testing.

- Election Assistance Commission 2005 Voluntary Voting System Guidelines, Volume I, Version 1.0, "Voting System Performance Guidelines", and Volume II, Version 1.0, "National Certification Testing Guidelines", dated December 2005
- Election Assistance Commission Testing and Certification Program Manual, Version 1.0, effective date January 1, 2007
- Election Assistance Commission Voting System Test laboratory Program Manual, Version 1.0, effective date July 2008
- National Voluntary Laboratory Accreditation Program NIST Handbook 150, 2006 Edition, "NVLAP Procedures and General Requirements (NIST Handbook 150)", dated February 2006
- National Voluntary Laboratory Accreditation Program NIST Handbook 150-22, 2008 Edition, "Voting System Testing (NIST Handbook 150-22)", dated May 2008
- United States 107th Congress Help America Vote Act (HAVA) of 2002 (Public Law 107-252), dated October 2002
- Wyle Laboratories' Test Guidelines Documents: EMI-001A, "Wyle Laboratories' Test Guidelines for Performing Electromagnetic Interference (EMI) Testing", and EMI-002A, "Test Procedure for Testing and Documentation of Radiated and Conducted Emissions Performed on Commercial Products"

1.0 INTRODUCTION (continued)

1.2 References (continued)

- Wyle Laboratories' Quality Assurance Program Manual, Revision 4
- ANSI/NCSL Z540-1, "Calibration Laboratories and Measuring and Test Equipment, General Requirements"
- ISO 10012-1, "Quality Assurance Requirements for Measuring Equipment"
- EAC Requests for Interpretation (listed on www.eac.gov)
- EAC Notices of Clarification (listed on www.eac.gov)

1.2 Terms and Abbreviations

The terms and abbreviations relevant to the test campaign are described in Table 1-1, below.

Table 1-1 Terms and Abbreviations

Term	Abbreviation	Definition
Ballot Layout Manager	BLM	Unisyn OVS application used to layout ballot information.
Commercial Off the Shelf	COTS	---
Direct Recording Electronic	DRE	---
United States Election Assistance Commission	EAC	Commission created per the Help America Vote Act of 2002, assigned the responsibility for setting voting system standards and providing for the voluntary testing and certification of voting systems.
Election Manager	EM	Utilizes the election definition file from the Ballot Layout Manager, adds jurisdiction voting device specific options and produces the CD used to load the election onto the voting devices and OVCS.
Election Management System	EMS	Within the OpenElect system, the EMS equivalent is OCS.
Election Server	ES	A component of the OCS, the ES updates the system clock and downloads new Election data to the voting devices prior to each election, typically at the warehouse.
Equipment Under Test	EUT	---

1.0 INTRODUCTIONS (continued)

1.3 Terms and Abbreviations (continued)

Table 1-1 Terms and Abbreviations (continued)

Functional Configuration Audit	FCA	Exhaustive verification of every system function and combination of functions cited in the manufacturer's documentation.
OpenElect Central Suite	OCS	Set of applications supplied by Unisyn to run at the Election Headquarters to support elections on the OVO, OVI, and OVCS systems. Includes: allot Layout Manager, Election Manager, Election Server, Tabulator Client, Tabulator Server and Tabulator Reports. In addition, the OCS includes the Software Server (SS) system for updating and validating OVO and OVI (voting device) software.
OpenElect Voting Device	OVD	OVD refers to the OVO, OVI, and OVCS hardware components of the OpenElect Voting System.
OpenElect Voting Interface	OVI	The OVI is an accessible voting device designed to accommodate voters with disabilities, and may also be used for Early Voting.
OpenElect Voting Optical scan	OVO	The OVO is a ballot scanning and tabulation device which is located at a precinct and may also be used for Early Voting purposes.
OpenElect Voting System	OVS	The OVS is a voting system which is comprised of the OVS suite of software applications, and the OVO and OVI client machines used by voters to produce and cast ballots.
Software Server	SS	The SS application is used for the updating and validation of Certified Software Releases which are installed on OVS client machines.

1.3 Relationship to Other Procedures

The Voting Test Case Procedure Specification is the second procedure to be executed as part of the FCA. No other test procedures need to be run concurrent with this procedure. Data supplied by the Pre Voting Test Suite will be utilized during the execution of the Voting Test Suite. This procedure will supply the election data, machine reports, and voting reports that will be used for performing tabulation functions during the Post- Voting Test Suite.

2.0 DETAILS

The following subsections describe the requirements and sequence that the individual test cases will be run in to exercise voting functionality ranging from pre-election testing through the processing of absentee and provisional votes.

2.0 DETAILS (continued)

2.1 Inputs, Outputs, and Special Requirements

Input data will be entered into the OVS using both equivalence partitioning and boundary value testing. For each data entry point, an entry will be made for both invalid and valid data. For data entry points that support a range of data, an entry will be made below the range, within the range, and outside the range to test minimum and maximum values supported. The first Run of each point of view of the Voting Test Suite will only input valid data and produce election data which will be used as the starting point of the Post Voting Test Suite.

The inputting of invalid data and data outside boundary ranges will generate error conditions. During the execution of this entire test suite Wyle qualified personnel are to pay specific attention to the following error and privacy requirements:

Table 2-1 Error and Privacy Requirements

Section		Requirement
VI-2.1.3	a	Restoration of the device to the operating condition existing immediately prior to an error or failure, without loss or corruption of voting data previously stored in the device.
	b	Resumption of normal operation following the correction of a failure in a memory component, or in a data processing component, including the central processing unit.
	c	Recovery from any other external condition that causes equipment to become inoperable, provided that catastrophic electrical or mechanical damage due to external phenomena has not occurred.
VI-2.1.4	f	Protection against any attempt at improper data entry or retrieval.
VI-2.1.5		System's characteristics documented in sufficient detail for accredited test labs and system users to evaluate the adequacy of the system's audit trail.
VI-2.1.5.1		Audit records are prepared for all phases of election operations performed using devices controlled by the jurisdiction or its contractors. (Includes ballot preparation, election definition, system readiness tests, voting, and ballot-counting operations).
VI-2.1.5.1.b	i.	Generation, storage and reporting of all error messages as they occur to the user.
	ii.	All error messages requiring intervention by an operator or precinct official are displayed or printed unambiguously in easily understood language text, or by means of other suitable visual indicators.
	iii.	System use of numerical error codes for trained technician maintenance or repair containing the text corresponding to the code is self-contained, or affixed inside the unit device.
	iv.	All error messages written clearly.
	v.	The message cue for all systems shall clearly state the action to be performed in the event that voter or operator response is required.
	vi.	That an erroneous response would not lead to irreversible error.
	vii.	Nested error conditions are corrected in a controlled sequence such that system status shall be restored to the initial state existing before the first error occurred.
VI-2.1.5.1c	i.	The display and report of critical status messages use unambiguous indicators or English language
VI-2.1.7.1	b	Accommodate device control functions performed by polling place officials and

		maintenance personnel.
	c	Register and accumulate votes.
	d	Accommodate variations in ballot counting logic.

2.0 DETAILS (continued)

2.1 Inputs, Outputs, and Special Requirements (continued)

Table 2-1 Error and Privacy Requirements (continued)

VI-2.3.1.2	f	All paper-based precinct count equipment shall include a means of identifying device failure and corrective action needed.
VI-2.3.3.1	b	All systems shall protect the secrecy of the vote such that the system cannot reveal any information about how a particular voter voted, except as otherwise required by individual State law.
VI-2.3.3.2	d	All paper-based systems shall protect the secrecy of the vote throughout the process.
VI – 4.1.3.1		Voting systems shall accurately record all election management data entered by the user, including election officials or their designees. For recording accuracy, all systems shall:
	a	Record every entry made by the user.
	c	Verify the correctness of detection of the user selections and the addition of the selections correctly to memory.
	e	Verify the correctness of detection of data entered directly by the user and the addition of the selections correctly to memory.
VI – 7.2.1.1	c	When the provision of accessibility involves an alternative format for ballot presentation, then all information presented to voters including instructions, warnings, error and other messages, and ballot choices shall be presented in that alternative format.
VI – 7.9.5	a	Voter privacy shall be preserved during the process of recording, verifying and auditing his or her ballot selections.

2.2 Sequence

The sequence for this test suite is broken down into "Runs". A run is a set of test cases which are executed in a logical order designed to exercise specific functionality of the OVS. The test suite contains a total of 31 runs. The runs can be broken down as follows:

- 15 runs for Voter Activities
- 6 runs for Pollworker Activities
- 9 runs for Warehouse Technician Activities
- 1 run for Pre-Voting Activities (Zero Proof Report Verification)

For ease of testing, the runs should be run sequentially, as it is assumed that the data obtained in the previous run is available for the subsequent run. The required runs are presented in Attachment A.

3.0 TEST COVERAGE REPORTING

This test suite functionally tests the following voting functions handled by the OCS:

Table 3-1 OCS Functional Tests

Point-of-View	Subfunctions
Voter	Review ballot instructions
	Navigation previous and next
	Print a ballot
	Under vote a ballot
	Under vote an audio ballot
	Vote an audio ballot
	Vote N of M
	Vote Partisan office
	Vote Non-Partisan office
	Vote Write-In
	Spanish ballot
	Spanish audio ballot
	Spanish audio write-in
	Cancel vote
	Cancel undervote
	Fleeing voter
	Protest vote
	Magnifying tool
	Audio protest vote
	Power interruption
	Sip and Puff
	Sip and Puff Write-In
	Sip and Puff cancel selection
	Cancel ballot
	Over vote
	Undervote
	Extraneous marks
	Marginal marks
	Ballot folding
Pollworker	Admin login
	Initialize precinct
	Add precinct
	Machine info report
	Activate audio ballot
	Test binary input
	Test diagnostics
	Test internal printer
	Test touchscreen

	Test display
	Test keyboard
	Test audio subsystem

3.0 TEST COVERAGE REPORTING (continued)

Table 3-1 OCS Functional Tests (continued)

Pollworker	Test headphones
	Reopen polls
	Open polls
	Close polls
	Printing test decks
	Inspection of ballot image
	Inspection of audio ballot image
Maintenance	Auditing machines
	Printing audit report
	Loading an election
	Test binary input
	Test diagnostics
	Test internal printer
	Test touchscreen
	Test display
	Test keyboard
	Test audio subsystem
	Test headphones
	Forced closing of polls
	Support of absentee voting
	Support of provisional voting
	Support of recount voting
	Unreadable ballot handling
	Multiple ballot fed

ATTACHMENT A
REQUIRED TEST RUNS

RUN 1 - VOTE 2 UNDERVOTED BALLOT			
	Functional Description	**Test Case No.**	**Test Case Name**
1	English	VOTE_TC-53	Voting Language Select
2	Republican	VOTE_TC-32	Voting Straight Party Vote
3	Review Instructions	VOTE_TC-ILTS-02	Review Voting Instructions
4	Next page	VOTE_TC-78	Navigate Forward
5	Next page	VOTE_TC-78	Navigate Forward
6	Next page	VOTE_TC-78	Navigate Forward
7	Next page	VOTE_TC-78	Navigate Forward
8	Next page	VOTE_TC-78	Navigate Forward
9	Next page	VOTE_TC-78	Navigate Forward
10	Nancy Ingram	VOTE_TC-33	Voting Make Vote Selection
11	Next page review instructions	VOTE_TC-37	Voting Review Selections
12	Next page	VOTE_TC-78	Navigate Forward
13	Next page	VOTE_TC-78	Navigate Forward
14	Print Ballot	VOTE_TC-ILTS-03	Print OVI Ballot
15	Cast an undervoted ballot	VOTE_TC-41	Voting Undervoted Ballot Casting

RUN 2 - VOTE 3 UNVOTED BALLOT			
	Functional Description	**Test Case No.**	**Test Case Name**
1	Spanish	VOTE_TC-53	Voting Language Select
2	Democrat	VOTE_TC-32	Voting Straight Party Vote
3	Review instructions	VOTE_TC-ILTS-02	Review Voting Instructions
4	Next page	VOTE_TC-78	Navigate Forward
5	No to Prop 1	VOTE_TC-33	Voting Make Vote Selection
6	Next page	VOTE_TC-78	Navigate Forward
7	Next page	VOTE_TC-78	Navigate Forward
8	Roland Gustiv	VOTE_TC-33	Voting Make Vote Selection
9	Next page review instructions	VOTE_TC-37	Voting Review Selections
10	Next page	VOTE_TC-78	Navigate Forward
11	Next page	VOTE_TC-78	Navigate Forward
12	Next page	VOTE_TC-78	Navigate Forward
13	Print ballot	VOTE_TC-ILTS-03	Print OVI Ballot
14	Cast ballot	VOTE_TC-41	Voting Undervoted Ballot Casting

RUN 3 - VOTE 8 UNDERVOTE AUDIO			
	Functional Description	**Test Case No.**	**Test Case Name**
1	English	VOTE_TC-53	Voting Language Select
2	Next page	VOTE_TC-78	Navigate Forward
3	Review instructions	VOTE_TC-ILTS-02	Review Voting Instructions
4	Harry Brown	VOTE_TC-44	Voting Make Vote Selection (Audio)
5	Next contest	VOTE_TC-46	Voting Proceed to Next Contest (Audio)
6	Ed Johnson	VOTE_TC-44	Voting Make Vote Selection (Audio)
7	Jim Gibbons	VOTE_TC-44	Voting Make Vote Selection (Audio)
8	Next contest	VOTE_TC-46	Voting Proceed to Next Contest (Audio)
9	Marsha Jones	VOTE_TC-44	Voting Make Vote Selection (Audio)
10	Next contest	VOTE_TC-46	Voting Proceed to Next Contest (Audio)
11	Yes to Prop 1	VOTE_TC-44	Voting Make Vote Selection (Audio)
12	Next contest	VOTE_TC-46	Voting Proceed to Next Contest (Audio)
13	Arlen Beal	VOTE_TC-44	Voting Make Vote Selection (Audio)
14	Next page	VOTE_TC-78	Navigate Forward
15	David Backus	VOTE_TC-44	Voting Make Vote Selection (Audio)
16	Write-in - Joe Dow	VOTE_TC-80	Write-In Selection (Audio)
17	Next contest	VOTE_TC-46	Voting Proceed to Next Contest (Audio)
18	Gary Becker	VOTE_TC-44	Voting Make Vote Selection (Audio)
19	Next contest	VOTE_TC-78	Navigate Forward
20	Bill Bates	VOTE_TC-44	Voting Make Vote Selection (Audio)
21	Review selection	VOTE_TC-ILTS-02	Review Voting Instructions
22	Next page	VOTE_TC-78	Navigate Forward
23	Next contest	VOTE_TC-46	Voting Proceed to Next Contest (Audio)
24	Next contest	VOTE_TC-46	Voting Proceed to Next Contest (Audio)
25	Next contest	VOTE_TC-46	Voting Proceed to Next Contest (Audio)
26	Next contest	VOTE_TC-46	Voting Proceed to Next Contest (Audio)
27	Next contest	VOTE_TC-46	Voting Proceed to Next Contest (Audio)
28	Next contest	VOTE_TC-46	Voting Proceed to Next Contest (Audio)
29	Next contest	VOTE_TC-46	Voting Proceed to Next Contest (Audio)
30	Next contest	VOTE_TC-46	Voting Proceed to Next Contest (Audio)
31	Next contest	VOTE_TC-46	Voting Proceed to Next Contest (Audio)
32	Print	VOTE_TC-ILTS-03	Print OVI Ballot
33	Cast Undervoted ballot	VOTE_TC-41	Voting Undervoted Ballot Casting

RUN 4 - VOTE 9 AUDIO UNDERVOTE WRITE-IN			
	Functional Description	**Test Case No.**	**Test Case Name**
1	English	VOTE_TC-53	Voting Language Select
2	Next page	VOTE_TC-78	Navigate Forward
3	Review instructions	VOTE_TC-ILTS-02	Review Voting Instructions
4	Bush	VOTE_TC-44	Voting Make Vote Selection (Audio)
5	Next Contest	VOTE_TC-46	Voting Proceed to Next Contest (Audio)
6	John Rusco	VOTE_TC-44	Voting Make Vote Selection (Audio)
7	Next Contest	VOTE_TC-46	Voting Proceed to Next Contest (Audio)
8	Daniel Laws	VOTE_TC-44	Voting Make Vote Selection (Audio)
9	Next Contest	VOTE_TC-46	Voting Proceed to Next Contest (Audio)
10	Next Contest	VOTE_TC-46	Voting Proceed to Next Contest (Audio)
11	No to Prop 1	VOTE_TC-44	Voting Make Vote Selection (Audio)
12	Next Contest	VOTE_TC-46	Voting Proceed to Next Contest (Audio)
13	Write in - Joe Dow	VOTE_TC-80	Write-In Selection (Audio)
14	Next Contest	VOTE_TC-46	Voting Proceed to Next Contest (Audio)
15	Myron Ensign	VOTE_TC-44	Voting Make Vote Selection (Audio)
16	Write in - Joe Dow	VOTE_TC-80	Write-In Selection (Audio)
17	Next Contest	VOTE_TC-46	Voting Proceed to Next Contest (Audio)
18	Write in - Joe Dow	VOTE_TC-80	Select Write-In Candidate (Audio)
19	Next Contest	VOTE_TC-46	Voting Proceed to Next Contest (Audio)
20	Nancy Ingram	VOTE_TC-44	Voting Make Vote Selection (Audio)
21	Review	VOTE_TC-37	Voting Review Selections
22	Next Contest	VOTE_TC-46	Voting Proceed to Next Contest (Audio)
23	Next Contest	VOTE_TC-46	Voting Proceed to Next Contest (Audio)
24	Next Contest	VOTE_TC-46	Voting Proceed to Next Contest (Audio)
25	Next Contest	VOTE_TC-46	Voting Proceed to Next Contest (Audio)
26	Next Contest	VOTE_TC-46	Voting Proceed to Next Contest (Audio)
27	Next Contest	VOTE_TC-46	Voting Proceed to Next Contest (Audio)
28	Next Contest	VOTE_TC-46	Voting Proceed to Next Contest (Audio)
29	Next Contest	VOTE_TC-46	Voting Proceed to Next Contest (Audio)
30	Print	VOTE_TC-ILTS-03	Print OVI Ballot
31	Cast vote	VOTE_TC-41	Voting Undervoted Ballot Casting

RUN 5 - VOTE 10 SPANISH WRITE-IN			
	Functional Description	**Test Case No.**	**Test Case Name**
1	Spanish	VOTE_TC-53	Voting Language Select
2	Next page	VOTE_TC-78	Move Forward on Ballot
3	Review instructions	VOTE_TC-ILTS-02	Review Voting Instructions
4	Audio write-in	VOTE_TC-80	Write-In Selection (Audio)
5	Next contest	VOTE_TC-46	Voting Proceed to Next Contest (Audio)
6	Write-in -Joe Dow	VOTE_TC-80	Write-In Selection (Audio)
7	Next contest	VOTE_TC-46	Voting Proceed to Next Contest (Audio)
8	Write-in -Joe Dow	VOTE_TC-80	Write-In Selection (Audio)
9	Next contest	VOTE_TC-46	Voting Proceed to Next Contest (Audio)
10	Write-in -Joe Dow	VOTE_TC-80	Write-In Selection (Audio)
11	Next contest	VOTE_TC-46	Voting Proceed to Next Contest (Audio)
12	Yes	VOTE_TC-44	Voting Make Vote Selection (Audio)
13	Write-in -Joe Dow	VOTE_TC-80	Write-In Selection (Audio)
14	Next contest	VOTE_TC-46	Voting Proceed to Next Contest (Audio)
15	Write-in -Joe Dow	VOTE_TC-80	Write-In Selection (Audio)
16	Write-in -Joe Dow	VOTE_TC-80	Write-In Selection (Audio)
17	Next contest	VOTE_TC-46	Voting Proceed to Next Contest (Audio)
18	Write-in -Joe Dow	VOTE_TC-80	Write-In Selection (Audio)
19	Next page	VOTE_TC-78	Move Forward on Ballot
20	Write-in -Joe Dow	VOTE_TC-80	Write-In Selection (Audio)
21	Next page	VOTE_TC-78	Navigate Forward
22	Review selections	VOTE_TC-37	Voting Review Selections
23	Next page	VOTE_TC-78	Move Forward on Ballot
24	Print ballot	VOTE_TC-ILTS-03	Print OVI Ballot
25	Cast vote	VOTE_TC-41	Voting Undervoted Ballot Casting

RUN 6 - CANCEL UNDERVOTE			
	Functional Description	**Test Case No.**	**Test Case Name**
1	English	VOTE_TC-53	Voting Language Select
2	Republican	VOTE_TC-32	Voting Straight Party Vote
3	Review instructions	VOTE_TC-ILTS-02	Review Voting Instructions
4	Next page	VOTE_TC-78	Move Forward on Ballot
5	Unselect George Bush & select Harry Brown	VOTE_TC-36	Voting Cancel Vote Selection
6	Next page	VOTE_TC-78	Move Forward on Ballot
7	Next page	VOTE_TC-78	Move Forward on Ballot
8	Next page	VOTE_TC-78	Move Forward on Ballot
9	Review	VOTE_TC-37	Voting Review Selections
10	Next page	VOTE_TC-78	Move Forward on Ballot
11	Print	VOTE_TC-ILTS-03	Print OVI Ballot
12	Cast ballot	VOTE_TC-39	Voting Ballot Casting

RUN 7 - REVIEW & CANCEL BALLOT			
	Functional Description	**Test Case No.**	**Test Case Name**
1	English	VOTE_TC-53	Voting Language Select
2	Republican	VOTE_TC-32	Voting Straight Party Vote
3	Review instructions	VOTE_TC-ILTS-02	Review Voting Instructions
4	Next page	VOTE_TC-78	Move Forward on Ballot
5	Next page	VOTE_TC-78	Move Forward on Ballot
6	Next page	VOTE_TC-78	Move Forward on Ballot
7	Return to previous contest	VOTE_TC-34	Voting Return to Previous Contest
8	Gary Decke	VOTE_TC-44	Voting Make Vote Selection (Audio)
9	Next page	VOTE_TC-78	Move Forward on Ballot
10	Review	VOTE_TC-37	Voting Review Selections
11	Cancel	VOTE_TC-42	Voting Ballot Casting Cancel

RUN 8 - FLEEING VOTER			
	Functional Description	**Test Case No.**	**Test Case Name**
1	Wait 2 minutes	VOTE_TC-55	Voting Fleeing Voter

RUN 9 - CAST PROTEST VOTE			
	Functional Description	**Test Case No.**	**Test Case Name**
1	English	VOTE_TC-53	Voting Language Select
2	Next page	VOTE_TC-78	Move Forward on Ballot
3	Review instructions	VOTE_TC-ILTS-02	Review Voting Instructions
4	Next page	VOTE_TC-78	Move Forward on Ballot
5	Next page	VOTE_TC-78	Move Forward on Ballot
6	Next page	VOTE_TC-78	Move Forward on Ballot
7	Next page	VOTE_TC-78	Move Forward on Ballot
8	Review	VOTE_TC-37	Voting Review Selections
9	Next page	VOTE_TC-78	Move Forward on Ballot
10	Print	VOTE_TC-ILTS-03	Print OVI Ballot
11	Cast ballot	VOTE_TC-57	Voting Blank Ballot Casting

RUN 10 - CASTING BLANK BALLOT, CANCELING SELECTION, MAGNIFYING TOOL			
	Functional Description	**Test Case No.**	**Test Case Name**
1	English	VOTE_TC-53	Voting Language Select
2	Next page	VOTE_TC-78	Move Forward on Ballot
3	Review Instructions	VOTE_TC-ILTS-02	Review Voting Instructions
4	Magnify	VOTE_TC-54	Voting Text Size & Magnifying Tool
5	Harry Brown	VOTE_TC-44	Voting Make Vote Selection (Audio)
6	Next page	VOTE_TC-78	Move Forward on Ballot
7	President	VOTE_TC-45	Voting Return to Previous Contest (Audio)
8	Cancel selection	VOTE_TC-47	Voting Cancel Vote Selection
9	Next page	VOTE_TC-78	Move Forward on Ballot
10	Next page	VOTE_TC-78	Move Forward on Ballot
11	Next page	VOTE_TC-78	Move Forward on Ballot
12	Next page	VOTE_TC-78	Move Forward on Ballot
13	Next page	VOTE_TC-78	Move Forward on Ballot
14	Next page	VOTE_TC-78	Move Forward on Ballot
15	Next page	VOTE_TC-78	Move Forward on Ballot
16	Review selections	VOTE_TC-37	Voting Review Selections
17	Next contest	VOTE_TC-46	Voting Proceed to Next Contest (Audio)
18	Next contest	VOTE_TC-46	Voting Proceed to Next Contest (Audio)
19	Next contest	VOTE_TC-46	Voting Proceed to Next Contest (Audio)
20	Next contest	VOTE_TC-46	Voting Proceed to Next Contest (Audio)
21	Next contest	VOTE_TC-46	Voting Proceed to Next Contest (Audio)
22	Next contest	VOTE_TC-46	Voting Proceed to Next Contest (Audio)
23	Next contest	VOTE_TC-46	Voting Proceed to Next Contest (Audio)
24	Next contest	VOTE_TC-46	Voting Proceed to Next Contest (Audio)
25	Print	VOTE_TC-ILTS-03	Print OVI Ballot
26	Cast ballot	VOTE_TC-57	Voting Blank Ballot Casting

RUN 11 - BLANK BALLOT AUDIO			
	Functional Description	**Test Case No.**	**Test Case Name**
1	English	VOTE_TC-53	Voting Language Select
2	Next page	VOTE_TC-78	Move Forward on Ballot
3	Review Instructions	VOTE_TC-ILTS-02	Review Voting Instructions
4	Next contest	VOTE_TC-46	Voting Proceed to Next Contest (Audio)
5	Next contest	VOTE_TC-46	Voting Proceed to Next Contest (Audio)
6	Next contest	VOTE_TC-46	Voting Proceed to Next Contest (Audio)
7	Next contest	VOTE_TC-46	Voting Proceed to Next Contest (Audio)
8	Next contest	VOTE_TC-46	Voting Proceed to Next Contest (Audio)
9	Next contest	VOTE_TC-46	Voting Proceed to Next Contest (Audio)
10	Next contest	VOTE_TC-46	Voting Proceed to Next Contest (Audio)
11	Next contest	VOTE_TC-46	Voting Proceed to Next Contest (Audio)
12	Continue	VOTE_TC-37	Voting Review Selections
13	Next contest	VOTE_TC-46	Voting Proceed to Next Contest (Audio)
14	Next contest	VOTE_TC-46	Voting Proceed to Next Contest (Audio)
15	Next contest	VOTE_TC-46	Voting Proceed to Next Contest (Audio)
16	Next contest	VOTE_TC-46	Voting Proceed to Next Contest (Audio)
17	Next contest	VOTE_TC-46	Voting Proceed to Next Contest (Audio)
18	Next contest	VOTE_TC-46	Voting Proceed to Next Contest (Audio)
19	Next contest	VOTE_TC-46	Voting Proceed to Next Contest (Audio)
20	Next contest	VOTE_TC-46	Voting Proceed to Next Contest (Audio)
21	Print	VOTE_TC-ILTS-03	Print OVI Ballot
22	Cast	VOTE_TC-49	Voting Ballot Casting (Audio)

RUN 12 - POWER INTERRUPTION			
	Functional Description	**Test Case No.**	**Test Case Name**
1	English	VOTE_TC-53	Voting Language Select
2	Next page	VOTE_TC-78	Move Forward on Ballot
3	Brown	VOTE_TC-44	Voting Make Vote Selection (Audio)
4	Johnson	VOTE_TC-44	Voting Make Vote Selection (Audio)
5	Pull Power	VOTE_TC-59	Voting Power Interruption

RUN 13 - SIP & PUFF WRITE-IN CANCEL SELECTION			
	Functional Description	**Test Case No.**	**Test Case Name**
1	English	VOTE_TC-53	Voting Language Select
2	Straight Party-Libertarian	VOTE_TC-32	Voting Straight Party Vote
3	Instructions	VOTE_TC-ILTS-02	Review Voting Instructions
4	Next page	VOTE_TC-78	Move Forward on Ballot
5	Next contest	VOTE_TC-35	Voting Proceed to Next Contest
6	Next contest	VOTE_TC-35	Voting Proceed to Next Contest
7	Next contest	VOTE_TC-35	Voting Proceed to Next Contest
8	District - Margia Jones	VOTE_TC-33	Voting Make Vote Selection
9	Next contest	VOTE_TC-35	Voting Proceed to Next Contest
10	Yes	VOTE_TC-33	Voting Make Vote Selection
11	Next contest	VOTE_TC-35	Voting Proceed to Next Contest
12	Arlyn Beal	VOTE_TC-33	Voting Make Vote Selection
13	Next contest	VOTE_TC-35	Voting Proceed to Next Contest
14	Next contest	VOTE_TC-35	Voting Proceed to Next Contest
15	Write-in Abe Dopy	VOTE_TC-79	Write-In Selection
16	Review	VOTE_TC-37	Voting Review Selections
17	Unselect Dave Backus & Select Ralph Savage	VOTE_TC-36	Voting Cancel Vote Selection
18	Review selections	VOTE_TC-37	Voting Review Selections
19	Print	VOTE_TC-ILTS-03	Print OVI Ballot
20	Cast ballot	VOTE_TC-39	Voting Ballot Casting

RUN 14 - CANCEL BALLOT			
	Functional Description	**Test Case No.**	**Test Case Name**
1	English	VOTE_TC-53	Voting Language Select
2	Republican	VOTE_TC-32	Voting Straight Party Vote
3	Instructions	VOTE_TC-ILTS-02	Review Voting Instructions
4	Next contest	VOTE_TC-78	Move Forward on Ballot
5	Next contest	VOTE_TC-78	Move Forward on Ballot
6	Next contest	VOTE_TC-78	Move Forward on Ballot
7	Next contest	VOTE_TC-37	Voting Review Selections
8	Cast ballot	VOTE_TC-42	Voting Undervoted Ballot Casting

RUN 15 – PRINT ZERO PROOF REPORT & ACTIVATE BALLOT				
	System	**Functional Description**	**Test Case No.**	**Test Case Name**
1	OVO	Enter password	VOTE_TC-ILTS-04	Election Password
2	OVO	Open Polling	VOTE_TC-22	Open Poll Opening Polls
3	OVO	Zero Proof	VOTE_TC-24	Print Zero Proof Report
4	OVI	Enter password	VOTE_TC-ILTS-04	Election Password
5	OVI	Activate Ballot	VOTE_TC-27	Activating the Ballot Activation by Pollworker

RUN 16 - ACTIVATE AUDIO BALLOT				
	System	**Functional Description**	**Test Case No.**	**Test Case Name**
1	OVO	Enter password	VOTE_TC-ILTS-04	Election Password
2	OVO	Open polls	VOTE_TC-22	Open Poll Opening Polls
3	OVO	Zero proof report	VOTE_TC-24	Print Zero Proof Report
4	OVI	Enter password	VOTE_TC-ILTS-04	Election Password
5	OVI	Activate audio ballot	VOTE_TC-28	Activating the Ballot Audio Ballot Activation by Pollworker

RUN 17 - TESTING DIAGNOSTICS				
	System	**Functional Description**	**Test Case No.**	**Test Case Name**
1	OVO	Access Administrative menu	VOTE_TC-ILTS-01	Access Administrative Menu on OVD
2	OVO	Machine info report	PRE_TC-ILTS-53	Machine Info Report
3	OVO	Access diagnostics	VOTE_TC-01	Voting Station Diagnostics Access Diagnostics
4	OVO	Test internal printer	VOTE_TC-11	Voting Station Diagnostics Internal Printer Test
5	OVO	Test touchscreen	VOTE_TC-81	Test Touchscreen
6	OVO	Test display	VOTE_TC-04	Voting Station Diagnostics Display Test
7	OVO	Ballot definition report	VOTE_TC-23	Open Poll Print Ballot Definition Report
8	OVI	Password	VOTE_TC-ILTS-04	Election Password
9	OVI	Access Administrative menu	VOTE_TC-ILTS-01	Access Administrative Menu on OVD
10	OVI	Machine info report	PRE_TC-ILTS-53	Machine Info Report
11	OVI	Access diagnostics	VOTE_TC-01	Voting Station Diagnostics Access Diagnostics
12	OVI	Test touchscreen	VOTE_TC-81	Test Touchscreen
13	OVI	Test display	VOTE_TC-04	Voting Station Diagnostics Display Test
14	OVI	Test keypad	VOTE_TC-06	Voting Station Diagnostics Keypad Test
15	OVI	Test audio subsystem	VOTE_TC-03	Voting Station Diagnostics Audio Subsystem Test
16	OVI	Test binary input	VOTE_TC-83	Binary Input Test
17	OVI	Test headphones	VOTE_TC-82	Headphone Test

RUN 18 - REOPEN POLLS				
	System	**Functional Description**	**Test Case No.**	**Test Case Name**
1	OVO	Election password	VOTE_TC-ILTS-04	Election Password
2	OVO	Administration menu	VOTE_TC-ILTS-01	Access Administrative Menu on OVD
3	OVO	View summary	VOTE_TC-73	Close Polls Attempt to Print Reports Before Poll Closing
4	OVO	Close polls	VOTE_TC-70	Close Polls
5	OVO	Attempt to reopen polls	VOTE_TC-71	Close Polls Re-Open Polls Attempt
6	OVO	Closed polls cast ballot attempt	VOTE_TC-72	Close Polls Ballot Cast with Close Polls Attempt
7	OVI	Election password	VOTE_TC-ILTS-04	Election Password
8	OVI	Administration menu	VOTE_TC-ILTS-01	Access Administrative Menu on OVD
9	OVI	Close polls	VOTE_TC-70	Close Polls
10	OVI	Attempt to reopen polls	VOTE_TC-71	Close Polls Re-Open Polls Attempt

RUN 19 - PAPER DIAGNOSTICS WITH TEST DECK, INSPECTION OF BALLOT IMAGE & AUDIO BALLOT IMAGE				
	System	**Functional Description**	**Test Case No.**	**Test Case Name**
1	OVI	Access maintenance menu	PRE_TC-ILTS-52	Access Maintenance Menu
2	OVI	Paper-based system diagnostics	VOTE_TC-74	Voting Station Diagnostics Paper Based System Diagnostics
3	OVI	Sessions selection & logic test	VOTE_TC-ILTS-05	Select & Initialize Voting Session
	OVI	Logic & accuracy test	VOTE_TC-12	Logic & Accuracy Test
4	OVI	Election password	VOTE_TC-ILTS-04	Election Password
5	OVI	Activate ballot	VOTE_TC-27	Activating the Ballot Ballot Activation by Pollworker
6	OVI	Inspection of ballot image - move back & forth to view image	VOTE_TC-75	Voting Station Election Load Inspection of Ballot Image
7	OVI	Inspection of ballot image -audio (same time as #7)	VOTE_TC-76	Voting Station Election Load Inspection of Ballot Image (Audio)
8	OVO	Access maintenance menu	PRE_TC-ILTS-52	Access Maintenance Menu
9	OVO	Sessions selection & logic test	VOTE_TC-ILTS-05	Select & Initialize Voting Session
10	OVO	Enter election password	VOTE_TC-ILTS-04	Election Password
11	OVO	Open polls "header ballot"	VOTE_TC-22	Open Poll Opening Polls
12	OVO	Feed test deck	VOTE_TC-39	Voting Ballot Casting
13	OVO	Election password	VOTE_TC-ILTS-04	Election Password
14	OVO	Access administration menu	VOTE_TC-ILTS-01	Access Administrative Menu on OVD
15	OVO	Access help	VOTE_TC-ILTS-17	Access Help on OVD
16	OVO	Close polls	VOTE_TC-70	Close Polls
17	OVO	View summary	VOTE_TC-73	Close Polls Attempt to Print Reports Before Polls Close
18	OVO	Shutdown	VOTE_TC-ILTS-15	Shutdown OVO

RUN 20 - AUDITING MAINTANANCE				
	System	**Functional Description**	**Test Case No.**	**Test Case Name**
1	EMS-ES	Login to EMS using election CD	PRE_TC-ILTS-59	Login to EMS Using Election CD
2	EMS-ES	View election log	PRE_TC-ILTS-61	View Election Log
3	EMS-ES	View machine log	PRE_TC-ILTS-57	View Machine Log
4	OVI-OVO	Access Administration menu	VOTE_TC-ILTS-01	Access Administrative Menu on OVD
5	OVI-OVO	System readiness record	VOTE_TC-19	Audit Voting Station Loading System Readiness Audit Log
6	OVI-OVO	Access maintenance menu	PRE_TC-ILTS-52	Access Maintenance Menu
7	OVI-OVO	Access machine info	PRE_TC-ILTS-53	Machine Info Report
8	OVI-OVO	Real time auditing	VOTE_TC-18	Audit Voting Station Loading Real Time Auditing
9	OVO	Print audit trail	VOTE_TC-ILTS-18	Print Audit Trail
10	OVI-OVO	Access Administration log	VOTE_TC-ILTS-19	Access Administrative Log

RUN 21 - ACCURACY TEST DIAGNOSTICS				
	System	**Functional Description**	**Test Case No.**	**Test Case Name**
1		Access administration menu	VOTE_TC-ILTS-01	Access Administrative Menu on OVD
2		Access maintenance menu	PRE_TC-ILTS-52	Access Maintenance Menu
3		Accuracy test	VOTE_TC-ILTS-08	Accuracy Test

RUN 22 - DIAGNOSTICS AS POLLWORKER				
	System	**Functional Description**	**Test Case No.**	**Test Case Name**
1		Access administration menu	VOTE_TC-ILTS-01	Access Administrative Menu on OVD
2		Access maintenance menu	PRE_TC-ILTS-52	Access Maintenance Menu
3		Access diagnostics	VOTE_TC-01	Voting Station Diagnostics Access Diagnostics
4		Test internal printer	VOTE_TC-11	Voting Station Diagnostics Internal Printer Test
5		Test display	VOTE_TC-04	Voting Station Diagnostics Display Test
6		Test touch screen	VOTE_TC-81	Test Touchscreen
7		Test reader	VOTE_TC-ILTS-09	Test Reader

RUN 23 - ADMINISTRATIVE CHANGE POLL CLOSE TIME				
**Election must be used that has enforced closing of polls & on election day **				
	System	**Functional Description**	**Test Case No.**	**Test Case Name**
1	OVO	Enter election password	VOTE_TC-ILTS-04	Election Password
2	OVO	Open polls	VOTE-TC-22	Open Poll Opening Polls
3	OVO	Print Zero Report	VOTE-TC-24	Print Zero Proof Report
4	OVO	Enter election password	VOTE_TC-ILTS-04	Election Password
5	OVO	Access maintenance menu	PRE_TC-ILTS-52	Access Maintenance Menu
6	OVO	Change close time	VOTE_TC-ILTS-07	Change Close Time
7	OVI	Enter election password	VOTE_TC-ILTS-04	Election Password
8	OVI	Enter election password	VOTE_TC-ILTS-04	Election Password
9	OVI	Access administration menu	VOTE_TC-ILTS-01	Access Administrative Menu on OVD
10	OVI	Access maintenance menu	PRE_TC-ILTS-52	Access Maintenance Menu
11	OVI	Change close time	VOTE_TC-ILTS-07	Change Close Time

RUN 24 - DIAGNOSTICS AS MAINTENANCE WORKER				
	System	**Functional Description**	**Test Case No.**	**Test Case Name**
1	OVI	Election password	VOTE_TC-ILTS-04	Election Password
2	OVI	Access administration menu	VOTE_TC-ILTS-01	Access Administrative Menu on OVD
3	OVI	Access maintenance menu	PRE_TC-ILTS-52	Access Maintenance Menu
4	OVI	Access diagnostics	VOTE_TC-01	Voting Stations Diagnostics Access Diagnostics
5	OVI	Test internal printer	VOTE_TC-11	Voting Station Diagnostics Internal Printer Test
6	OVI	Test display	VOTE_TC-04	Voting Station Diagnostics Display Test
7	OVI	Test audio subsystem	VOTE_TC-03	Voting Station Diagnostics Audio Subsystem Test
8	OVI	Test headphones	VOTE_TC-82	Headphone Test
9	OVI	Test touchscreen	VOTE_TC-81	Touchscreen Test
10	OVI	Test keypad	VOTE_TC-06	Voting Station Diagnostics Keypad Test
11	OVI	Test binary input	VOTE_TC-83	Binary Input Test

RUN 25 - ABSENTEE VOTING				
Election requires support for Absentee should be BEFORE election day				
	System	**Functional Description**	**Test Case No.**	**Test Case Name**
1	OVO	Access administration menu	VOTE_TC-ILTS-01	Access Administrative Menu on OVD
2	OVO	Election password	VOTE_TC-ILTS-04	Election Password
3	OVO	Access maintenance menu	PRE_TC-ILTS-52	Access Maintenance Menu
4	OVO	Select sessions	VOTE_TC-ILTS-05	Select & Initialize Voting Session
5	OVO	Select absentee	VOTE_TC-ILTS-05	Select & Initialize Voting Session
6	OVO	Enter supervisor password	VOTE_TC-ILTS-10	Supervisor Password
7	OVO	Enter election password	VOTE_TC-ILTS-04	Election Password
8	OVO	Open polls	VOTE_TC-22	Open Poll Opening Polls
9	OVO	Print Zero count	VOTE_TC-24	Print Zero Proof Report
10	OVO	Cast absentee votes/ballots	VOTE_TC-ILTS-12	Cast Absentee Ballots
11	OVO	Close polls	VOTE_TC-70	Close Polls
12	OVO	Shutdown	VOTE_TC-ILTS-15	Shutdown OVO
13	OVO	Remove TM	VOTE_TC-ILTS-16	Remove TM

RUN 26 - PROVISIONAL VOTING				
Use election from Run 25, should be AFTER election day				
	System	**Functional Description**	**Test Case No.**	**Test Case Name**
1	OVO	Access maintenance menu	PRE_TC-ILTS-52	Access Maintenance Menu
2	OVO	Select sessions	VOTE_TC-ILTS-05	Select & Initialize Voting Session
3	OVO	Select provisional voting	VOTE_TC-ILTS-05	Select & Initialize Voting Session
4	OVO	Enter supervisor password	VOTE_TC-ILTS-10	Supervisor Password
5	OVO	Enter election password	VOTE_TC-ILTS-04	Election Password
6	OVO	Open polls	VOTE_TC-22	Open Poll Opening Polls
7	OVO	Print Zero proof report	VOTE_TC-24	Print Zero Proof Report
8	OVO	Cast provisional ballots	VOTE_TC-ILTS-13	Cast Provisional Ballots
9	OVO	Close polls	VOTE_TC-70	Close Polls
10	OVO	Shutdown	VOTE_TC-ILTS-15	Shutdown OVO
11	OVO	Remove TM	VOTE_TC-ILTS-16	Remove TM

RUN 27 - ELECTION RECOUNT				
Use same election as Runs 25 & 26, should be AFTER election day				
	System	**Functional Description**	**Test Case No.**	**Test Case Name**
1		Access maintenance menu	PRE_TC-ILTS-52	Access Maintenance Menu
2		Select sessions	VOTE_TC-ILTS-05	Select & Initialize Voting Session
3		Select recount	VOTE_TC-ILTS-05	Select & Initialize Voting Session
4		Enter supervisor password	VOTE_TC-ILTS-10	Supervisor Password
5		Enter election password	VOTE_TC-ILTS-04	Election Password
6		Open polls	VOTE_TC-22	Open Poll Opening Polls
7		Print Zero proof report	VOTE_TC-24	Print Zero Proof Report
8		Cast ballots - marginal mark ballots will be used in recount	VOTE_TC-39	Voting Ballot Casting
9		Overvoted ballot handling paper	VOTE_TC-64	VM Capabilities Overvoted Ballot Handling (Paper)
10		Undervoted ballot handling paper	VOTE_TC-65	VM Capabilities Undervoted Ballot Handling (Paper)
11		Write-in ballot handling paper	VOTE_TC-66	VM Capabilities Write-in Ballot Handling (Paper)
12		Blank ballot handling paper	VOTE_TC-67	VM Capabilities Blank Ballot Handling (Paper)
13		Multiple ballot feed paper	VOTE_TC-68	VM Capabilities Multiple Ballot Feed (Paper)
14		Unreadable ballot handling paper	VOTE_TC-69	VM Capabilities Unreadable Ballot Handling (Paper)
15		Close polls	VOTE_TC-70	Close Polls
16		Verify results for marginal ballots and others	VOTE_TC-ILTS-14	Verify Results for Marginal Ballots & Others

RUN 28 - CASTING OVER-VOTED BALLOT				
Requires open election. Test Case is self contained test				
	System	**Functional Description**	**Test Case No.**	**Test Case Name**
Voter must have an over-voted ballot card				
1	OVO	Cast over-voted ballot	VOTE_TC-40	Voting Overvoted Ballot Casting

RUN 29 - BALLOT COUNTER (PUBLIC COUNT) TEST				
Requires open election. Test Case is self contained test				
	System	**Functional Description**	**Test Case No.**	**Test Case Name**
1	OVO	Test public ballot counter functionality	VOTE_TC-25	Ballot Counter Functions

RUN 30 - PROTECTIVE BALLOT COUNTER TEST				
Requires open election. Test Case is self contained test				
	System	**Functional Description**	**Test Case No.**	**Test Case Name**
1	OVO	Test protective ballot counter functionality	VOTE_TC-26	Ballot Counter Protective Ballot Counter Functions

PRE-VOTING ACTIVITIES RUN 1				
VERIFY VOTE REGISTERS ARE EMPTY AND ZERO PROOF REPORT IS VALID				
	System	**Functional Description**	**Test Case No.**	**Test Case Name**
1	OVO	Verify that vote registers are empty and that	VOTE_TC-ILTS-20	Empty Vote Register Verification

ATTACHMENT B

2005 VVSG REQUIREMENTS CHECKLIST

VVSG Req. No.	2005 VVSG Volume I Functional Requirement Matrix	REQUIREMENTS MET
Volume I	**Voting System Performance Guidelines**	
Section 2	**Functional Requirements**	
2.1	**Overall System Capabilities**	
2.1.2	**Accuracy**	
b.	Recording the appropriate options for casting and recording votes.	**X**
c.	Recording of each vote precisely as indicated by the voter and have the ability to produce an accurate report of all votes cast.	**X**
2.1.3	**Error Recovery**	
a.	Restoration of the device to the operating condition existing immediately prior to an error or failure, without loss or corruption of voting data previously stored in the device.	**X**
b.	Resumption of normal operation following the correction of a failure in a memory component, or in a data processing component, including the central processing unit.	**X**
c.	Recovery from any other external condition that causes equipment to become inoperable, provided that catastrophic electrical or mechanical damage due to external phenomena has not occurred.	**X**
2.1.4	**Integrity**	
a.	Protection against a single point of failure that would prevent further voting at the polling place.	**X**
b.	Protection against the interruption of electronic power.	**X**
f.	Protection against any attempt at improper data entry or retrieval.	**X**
g.	Records and reports the date and time of any normal or abnormal events.	**X**
h.	Maintenance of a permanent record of original audit data that cannot be modified or overridden but may be augmented by designated authorized officials in order to adjust for errors or omissions (e.g., during the canvassing process).	**X**
i.	Detect and record every event, including the occurrence of an error condition that the system cannot overcome, and time-dependent or programmed events that occur without the intervention of the voter or a polling place operator.	**X**
j.	Detecting and reporting of system status and degree of operability by built-in measurement, self-test, and diagnostic software and hardware.	**X**
2.1.5.1a.	**Time, Sequence, and Preservation of Audit Records**	
i.	Create and maintain a real-time audit record.	**X**
ii.	System has a real-time clock, and maintains an absolute record of time and date, or record relative to some event whose time and data are known and recorded.	**X**
iii.	All audit record entries include the time-and-date stamp.	**X**
iv.	The audit record shall be active whenever the system is in an operating mode. Record shall be available at all times, though it need not be continually visible.	**X**
v.	The generation of audit record entries shall not be terminated or altered by program control, or by the intervention of any person.	**X**
vi.	System not affected by interruption of power.	**X**

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2.1.5.1a.	**Time, Sequence, and Preservation of Audit Records**	
vii.	Printable copy of the audit record. Separate printer is not required, and the record may be produced on the standard system printer if all the following conditions are met:	**X**
	Generation of audit trail records does not interfere with production of output reports	**X**
	Entries can be identified so as to facilitate their recognition, segregation, and retention	**X**
	Audit record entries are kept physically secure	**X**
2.1.5.1b.	**Error messages**	
i.	Generation, storage and reporting of all error messages as they occur to the user.	**X**
ii.	All error messages requiring intervention by an operator or precinct official are displayed or printed unambiguously in easily understood language text, or by means of other suitable visual indicators.	**X**
iii.	System use of numerical error codes for trained technician maintenance or repair containing the text corresponding to the code is self-contained, or affixed inside the unit device.	**X**
iv.	All error messages written clearly.	**X**
v.	The message cue for all systems shall clearly state the action to be performed in the event that voter or operator response is required.	**X**
vi.	That an erroneous response would not lead to irreversible error.	**X**
vii.	Nested error conditions are corrected in a controlled sequence such that system status shall be restored to the initial state existing before the first error occurred.	**X**
2.1.5.1c.	**Status Messages**	
	The display and report of critical status messages use unambiguous indicators or English language.	**X**
	For the capability of status messages as part of the real-time audit record.	**X**
	For the capability for a jurisdiction to designate critical status messages.	**X**
2.1.6	**Election Management System**	
i.	Process and produce audit reports of the data indicated in Section 5.5 [sic] [5.4 Audit Record Data]	**X**
2.1.7	**Vote Tabulating Program** Each voting system shall have a vote tabulation program that will meet specific functional requirements.	
2.1.7.1	**Functions**	
	The vote tabulating program software resident in each voting machine, vote count server, or other devices shall include all software modules required to:	

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2.1.7	**Vote Tabulating Program** Each voting system shall have a vote tabulation program that will meet specific functional requirements.	
2.1.7.1	**Functions**	
b.	Accommodate device control functions performed by polling place officials and maintenance personnel.	**X**
c.	Register and accumulate votes.	**X**
d.	Accommodate variations in ballot counting logic.	**X**
2.1.8	**Ballot Counter**	
a.	The counter is able to be set to zero before any ballots are submitted for tally.	**X**
b.	The counter records the number of ballots cast during a particular test cycle or election.	**X**
c.	The counter increases the count only by the input of a ballot.	**X**
d.	Prevention or disabling the resetting of the counter by any person other than authorized persons at authorized points.	**X**
e.	The counter is visible to designated election officials.	**X**
2.2	**Pre-voting Capabilities**	
	All voting systems shall provide capabilities to support:	
	• Readiness testing	**X**
	• Verification at the polling place	**X**
2.2.1	**Ballot Preparation**	
2.2.1.3	**Ballot Production**	
	The voting system shall provide a means of printing or otherwise generating a ballot display that can be installed in all voting equipment for which it is intended.	
	All voting systems shall provide the following capabilities:	
	Vendor documentation for marksense systems shall include specifications for ballot materials to ensure that vote selections are read from only a single ballot at a time, without detection of marks from multiple ballots concurrently (e.g., reading of bleed	**X**
2.2.4	**Readiness Testing**	
a.	Provide the capabilities to verify that voting equipment and precinct count equipment is properly prepared for an election, and collect data that verifies equipment readiness.	**X**
b.	Provide capabilities for obtaining status and data reports from each set of equipment.	**X**
c.	Verify the correct installation and interface of all voting equipment.	**X**
d.	Verify that hardware and software function correctly.	**X**
e.	Provide capabilities for generating consolidated data reports at the polling place and higher jurisdictional levels.	**X**

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2.2.4	**Readiness Testing**	
f.	Provide capabilities for segregating test data from actual voting data, either procedurally or by hardware/software features.	**X**
g.	Resident test software, external devices, and special purpose test software connected to or installed in voting devices to simulate operator and voter functions used for these tests shall be capable of being tested separately, and shall be proven to be re	**X**
h.	Resident test software, external devices, and special purpose test software connected to or installed in voting devices to simulate operator and voter functions used for these tests shall be incapable of altering or introducing any residual effect on the	**X**
i.	Paper-based systems shall support of conversion testing that uses all potential ballot positions as active positions.	**X**
j.	Paper-based systems shall support of conversion testing of ballots with active position density for systems without pre-designated ballot positions.	**X**
2.2.5	**Verification at Polling Place**	
	All systems provide a formal record of the following, in any media, upon verification of the authenticity of the command source:	
a.	The election's identification data.	**X**
b.	The identification of all equipment units.	**X**
c.	The identification of the polling place.	**X**
d.	The identification of all ballot formats.	**X**
e.	The contents of each active candidate register by office and of each active measure register at all storage locations (showing that they contain only zeros).	**X**
f.	A list of all ballot fields that can be used to invoke special voting options.	**X**
g.	Other information needed to confirm the readiness of the equipment, and to accommodate administrative reporting requirements.	**X**
h.	Capability to test all voting devices prior to opening to confirm no hardware or software failures.	**X**
i.	Capability to test all voting devices prior to opening to confirm that the device is ready to be activated for accepting votes.	**X**
2.2.6	**Verification at the Central Location**	
	Upon verification of the authenticity of the command source, any equipment used in a central count environment provides a printed record of:	
a.	The election's identification data	**X (Absentee, Provisional, and Recount only)**
b.	The contents of each active candidate register by office and of each active measure register at all storage locations (showing that they contain only zeros)	**X (Absentee, Provisional, and Recount only)**

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2.2.6	**Verification at the Central Location**	
c.	Other information needed to confirm the readiness of the equipment, and to accommodate administrative reporting requirements	**X (Absentee, Provisional, and Recount only)**
2.3	**Voting Capabilities**	
	All voting systems shall support:	
	• Opening the polls	**X**
	• Casting a ballot	**X**
	Additionally, all DRE systems shall support:	
	• Activating the ballot	**X**
2.3.1	**Opening the Polls**	
2.3.1.1	**Precinct Count Systems**	
a.	All precinct count systems shall provide an internal test or diagnostic capability to verify that all of the polling place tests specified in 2.2.5 [Verification at the Polling Place] have been successfully completed.	**X**
b.	All precinct count systems shall provide automatic disabling any device that has not been tested until it has been tested.	**X**
2.3.1.2	**Paper-Based System Requirements**	
a.	All paper-based systems shall include a means of verifying that ballot marking devices are properly prepared and ready to use.	**X**
b.	All paper-based systems shall include a voting booth or similar facility, in which the voter may mark the ballot in privacy.	**X**
c.	All paper-based systems shall include secure receptacles for holding voted ballots.	**X**
d.	All paper-based precinct count equipment shall include a means of activating the ballot counting device.	**X**
e.	All paper-based precinct count equipment shall include a means of verifying that the device has been correctly activated and is functioning properly.	**X**
f.	All paper-based precinct count equipment shall include a means of identifying device failure and corrective action needed.	**X**
2.3.2	**Activating the Ballot (DRE Systems)**	
a.	To activate the ballot, all DRE Systems shall enable election officials to control the content of the ballot presented to the voter, either printed form or electronic display, such that each voter is permitted to record votes only in contests in which tha	**X (OVI POV)**
b.	All DRE Systems shall allow each eligible voter to cast a ballot.	**X (OVI POV)**
c.	All DRE Systems shall prevent a voter from voting on a ballot to which s/he is not entitled.	**X (OVI POV)**
d.	All DRE Systems shall prevent a voter from casting more than one ballot in the same election.	**X (OVI POV)**

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2.3.2	**Activating the Ballot (DRE Systems)**	
e.	All DRE Systems shall activate the casting of a ballot in a general election.	**X (OVI POV)**
f.	All DRE Systems shall enable the selection of the ballot that is appropriate to the party affiliation declared by the voter in a primary election.	**X (OVI POV)**
g.	All DRE Systems shall activate all portions of the ballot upon which the voter is entitled to vote.	**X (OVI POV)**
h.	All DRE Systems shall disable all portions of the ballot upon which the voter is not entitled to vote.	**X (OVI POV)**
2.3.3.1	**Common Requirements**	
b.	All systems shall protect the secrecy of the vote such that the system cannot reveal any information about how a particular voter voted, except as otherwise required by individual State law.	**X**
c.	All systems shall record the selection and non-selection of individual vote choices for each contest and ballot measure.	**X**
d.	All systems shall record the voter's selection of candidates whose names do not appear on the ballot, if permitted under State law, and record as many write-in votes as the number of candidates the voter is allowed to select.	**X**
e.	In the event of a failure of the main power supply external to the voting system, all systems shall provide the capability for any voter who is voting at the time to complete casting a ballot, allow for the successful shutdown of the voting system without	**X**
2.3.3.2	**Paper-Based System Requirements**	
a.	All paper-based systems shall allow the voter to easily identify the voting field that is associated with each candidate or ballot measure response.	**X**
b.	All paper-based systems shall allow the voter to mark the ballot to register a vote.	**X**
c.	All paper-based systems shall allow either the voter or the appropriate election official to place the voted ballot into the ballot counting device (precinct count systems) or a secure receptacle (central count systems).	**X**
d.	All paper-based systems shall protect the secrecy of the vote throughout the process.	**X**
e.	All paper-based precinct count systems shall provide feedback to the voter that identifies specific contests for which s/he has made no selection or fewer than the allowable number of selection (e.g., undervotes).	**X**
f.	All paper-based precinct count systems shall notify the voter if he or she has made more than the allowable number of selections for any contest (e.g., overvotes)	**X**

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2.3.3.2	**Paper-Based System Requirements**	
g.	All paper-based precinct count systems shall notify the voter before the ballot is cast and counted of the effect of making more than the allowable number of selections for a contest.	**X**
h.	All paper-based precinct count systems shall provide the voter opportunity to correct the ballot for either an undervote or overvote before the ballot is cast and counted.	**X**
2.3.3.3	**DRE Systems Requirements**	
a.	DRE Systems shall prohibit the voter from accessing or viewing any information on the display screen that has not been authorized by election officials and preprogrammed into the voting system (i.e., no potential for display of external information or linking to other information sources).	**X (OVI POV)**
b.	DRE Systems shall enable the voter to easily identify the selection button or switch, or the active area of the ballot display, that is associated with each candidate or ballot measure response.	**X (OVI POV)**
c.	DRE Systems shall allow the voter to select his or her preferences on the ballot in any legal number and combination.	**X (OVI POV)**
d.	DRE Systems shall indicate that a selection has been made or canceled.	**X (OVI POV)**
e.	DRE Systems shall indicate to the voter when no selection, or an insufficient number of selections, has been made for a contest (e.g., undervotes).	**X (OVI POV)**
f.	DRE Systems shall notify the voter if he or she has made more than the allowable number of selections for any contest (e.g., overvotes).	**X (OVI POV)**
h.	DRE Systems shall provide the voter opportunity to correct the ballot for either an undervote or overvote before the ballot is cast and counted.	**X (OVI POV)**
i.	DRE Systems shall notify the voter when the selection of candidates and measures is completed.	**X (OVI POV)**
j.	DRE Systems shall allow the voter, before the ballot is cast, to review his or her choices and, if the voter desires, to delete or change his or her choices before the ballot is cast.	**X (OVI POV)**
k.	For electronic image displays, DRE Systems shall prompt the voter to confirm the voter's choices before casting his or her ballot, signifying to the voter that casting the ballot is irrevocable and directing the voter to confirm the voter’s intention to c	**X (OVI POV)**
l.	DRE Systems shall notify the voter after the vote has been stored successfully that the ballot has been cast.	**X (OVI POV)**
m.	DRE Systems shall notify the voter that the ballot has not been cast successfully if it is not stored successfully, including storage of the ballot image, and provide clear instruction as to the steps the voter should take to cast his or her ballot should	**X (OVI POV)**

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2.3.3.3	**DRE Systems Requirements**	
n.	DRE Systems shall provide sufficient computational performance to provide responses back to each voter entry in no more than three seconds.	**X (OVI POV)**
o.	DRE Systems shall ensure that the votes stored accurately represent the actual votes cast.	**X (OVI POV)**
p.	DRE Systems shall prevent modification of the voter's vote after the ballot is cast.	**X (OVI POV)**
q.	DRE Systems shall provide a capability to retrieve ballot images in a form readable by humans [in accordance with the requirements of Subsections 2.1.2 (f) [Accuracy] and 2.1.4 (k) and (l)] [Integrity].	**X (OVI POV)**
2.4.1	**Closing the Polls**	
a.	For precinct count systems: Preventing the further casting of ballots once the polls have closed.	**X**
b.	For precinct count systems: Providing an internal test that verifies that the prescribed closing procedure has been followed, and that the device status is normal.	**X**
c.	For precinct count systems: Incorporating a visible indication of system status.	**X**
d.	For precinct count systems: Producing a diagnostic test record that verifies the sequence of events, and indicates that the extraction of voting data has been activated.	**X**
e.	For precinct count systems: Precluding the unauthorized reopening of the polls once the poll closing has been completed for that election.	**X**
2.4.3	**Producing Reports**	
	All systems shall be able to create reports summarizing the vote data on multiple levels.	
f.	All systems shall provide capabilities to produce all system audit information required in Subsection 5.4 [Audit Record Data] in the form of printed reports, or in electronic memory for printing centrally.	**X**
h.	All precinct count voting systems shall prevent the printing of reports and the unauthorized extraction of data prior to the official close of the polls.	**X**
3.1	**Usability Requirements**	
a. 1. A. i.	The voting system (including any lever voting system, optical scanning voting system, or direct recording electronic system) shall 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;	**X**

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3.1	**Usability Requirements**	
a. 1. A. ii.	The voting system (including any lever voting system, optical scanning voting system, or direct recording electronic system) shall 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); and	**X**
a. 1. A. iii.	If the voter selects votes for more than one candidate for a single office:	**X**
	I. Notify the voter that the voter has selected more than one candidate for a single office on the ballot;	**X**
	II. Notify the voter before the ballot is cast and counted of the effect of casting multiple votes for the office; and	**X**
a. 1. B.	A state or jurisdiction that uses a paper ballot voting system, a punch card voting system, or a central count voting system (including mail-in absentee ballots and mail-in ballots), may meet the requirements of subparagraph (A)(iii) by:	
	i. Establishing a voter education program specific to that voting system that notifies each voter of the effect of casting multiple votes for an office; and	**X**
	ii. Providing the voter with instructions on how to correct the ballot before it is cast and counted (including instructions on how to correct the error through the issuance of a replacement ballot if the voter was otherwise unable to change the b	**X**
a. 1. C.	The voting system shall ensure that any notification required under this paragraph preserves the privacy of the voter and the confidentiality of the ballot.	**X**
3.1.2	**Functional Capabilities**	
a.	The voting system shall provide feedback to the voter that identifies specific contests or ballot issues for which he or she has made no selection or fewer than the allowable number of selections (e.g., undervotes).	**X**
b.	The voting system shall notify the voter if he or she has made more than the allowable number of selections for any contest (e.g., overvotes).	**X**
c.	The voting system shall notify the voter before the ballot is cast and counted of the effect of making more than the allowable number of selections for a contest.	**X**
d.	The voting system shall provide the voter the opportunity to correct the ballot for either an undervote or overvote before the ballot is cast and counted.	**X**
e.	The voting system shall allow the voter, at his or her choice, to submit an undervoted ballot without correction.	**X**
f.	DRE voting machines shall allow the voter to change a vote within a contest before advancing to the next contest.	**X**

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3.1.2	**Functional Capabilities**	
g.	DRE voting machines should provide navigation controls that allow the voter to advance to the next contest or go back to the previous contest before completing a vote on the contest currently being presented (whether visually or aurally).	**X**
3.1.3	**Alternative Languages**	
	The voting equipment shall be capable of presenting the ballot, ballot selections, review screens and instructions in any language required by state or federal law.	**X**
	HAVA Section 301 (a) (4) states that the voting system shall provide alternative language accessibility pursuant to the requirements of Section 203 of the Voting Rights Act f 1965 (42 U.S.C. 1973aa-1a)….As a practical matter, alternative language access i	**X**
4.1.3	**Election Management System (EMS) Requirements**	
4.1.3.1	**Recording Requirements**	
	Voting systems shall accurately record all election management data entered by the user, including election officials or their designees.	
	For recording accuracy, all systems shall:	
	a. Record every entry made by the user	
	b. Add permissible voter selections correctly to the memory components of the device	**X**
	c. Verify the correctness of detection of the user selections and the addition of the selections correctly to memory	**X**
4.1.5	**Paper based Conversion Requirements**	
4.1.5.1	**Ballot Handling**	
b.	When ballots are unreadable or some condition is detected requiring that the cards be segregated from normally processed ballots for human review (e.g. write-ins), all central count paper-based systems shall do one of the following:	**X**
	ii. Outstack the ballot	**X**
	iii. Stop the ballot reader and display a message prompting the election official or designee to remove the ballot	**X**
	iv. Mark the ballot with an identifying mark to facilitate its later identification	**X**
c.	The voting systems provides a capability that can be activated by an authorized election official to identify ballots containing overvotes, blank ballots, and ballots containing undervotes in a designated contest. If enabled, these capabilities shall per	**X**
d.	When ballots are unreadable or when some condition is detected requiring that the cards be segregated from normally processed ballots for human review (e.g. write-in votes) all precinct count systems shall:	
d. i.	In response to an unreadable or blank ballot, return the ballot and	**X**

	provide a message prompting the voter to examine the ballot.	

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d. ii.	In response to a ballot with a write-in vote, segregate the ballot or mark the ballot with an identifying mark to facilitate its later identification.	**X**
d. iii.	In response to a ballot with an overvote the system shall:	**X**
	Provide a capability to identify an overvoted ballot	**X**
	Return the ballot	**X**
	Provide an indication prompting the voter to examine the ballot	**X**
	Allow the voter to correct the ballot	**X**
	Provide a means for an authorized election official to deactivate this capability entirely and by contest	**X**
d. iv.	In response to a ballot with an undervote, the system shall:	**X**
	Provide a capability to identify an undervoted ballot	**X**
	Return the ballot	**X**
	Provide an indication prompting the voter to examine the ballot	**X**
	Allow the voter to correct the ballot	**X**
	Allow the voter to submit the ballot with the undervote	**X**
	Provide a means for an authorized election official to deactivate this capability	**X**
e.	Ballot readers shall prevent multiple feed or detect and provide an alarm indicating multiple feed.	**X**
e. i.	If multiple feed is detected, the card reader shall halt in a manner that permits the operator to remove the unread cards causing the error, and reinsert them in the card input hopper.	**X**
4.1.5.2	**Ballot Reading Accuracy**	
d.	Paper-based systems detect marks that conform to vendor specifications with an error rate not exceeding the requirement indicated in Section 4.1.1.	**X**
e.	Paper-based systems ignore, and not record, extraneous perforations, smudges, and folds.	**X**
f.	Paper-based systems reject ballots that meet all vendor specifications at a rate not to exceed 2 percent.	**X**
4.1.8	**Vote Data Management Requirements**	
	The vote data managements for all systems address capabilities that manage, process, and report voting data after the data has been consolidated at the polling place or other jurisdictional levels.	**X**
4.1.8.1	**Data File Management**	
	All voting systems shall provide the capability to:	
a.	Integrate voting data files with ballot definition files.	**X**
b.	Verify file compatibility	**X**
c.	Edit and update files as required	**X**

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4.1.8	**Vote Data Management Requirements**	
4.1.8.2	**Data Report Generation**	
	All voting systems shall include report generators for producing output reports at the device, polling place, and summary level, with provisions for administrative and judicial subdivisions as required by the using jurisdiction.	**X**
4.3.5	**Availability**	
a.	Paper based voting systems and supporting software respond to operational commands and accomplish the functions of:	
	a. Recording voter selections (such as by ballot marking); and	**X**
	i. Scanning the marks on paper ballots and converting them into digital data.	**X**
b.	DRE voting systems and supporting software respond to operational commands and accomplish the functions of recording and storing the voter's ballot selections.	**X (OVI POV)**
5.4	**Audit Record Data**	
5.4.2	**System Readiness Audit Records**	
a.	Prior to the start of ballot counting, a system process shall verify hardware and software status and generate a readiness audit record, including the identification of the software release, the identification of the election to be processed, and the resu	**X**
b.	In the case of systems used at the polling place, the record shall include the polling place's identification;	**X**
c.	Ballot interpretation logic tests and records the correction installation of ballot formats on voting devices;	**X**
d.	The software shall check and record the status of all data paths and memory locations to be used in vote recording to protect against contamination of voting data;	**X**
e.	Upon the conclusion of the tests, the software shall provide evidence in the audit record that the test data have been expunged;	**X**
f.	If required and provided, the ballot reader and arithmetic-logic unit shall be evaluated for accuracy, and the system shall record the results, allowing the processing, or simulated processing, of sufficient test ballots to provide a statistical estimate	**X**
5.4.3	**In-Process Audit Records**	
a.	At a minimum, the in-process audit records shall contain:	
	Machine generated error and exception messages demonstrate successful recovery, including, but are not necessarily limited to:	**X**
	i. The source and disposition of system interrupts resulting in entry into exception handling routines;	**X**
	ii. All messages generated by exception handlers;	**X**
	iii. The identification code and number of occurrences for each hardware and software error or failure;	**X**

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5.4.3	**In-Process Audit Records**	
	iv. Notification of system login or access errors, file access errors, and physical violations of security as they occur, and a summary record of these events after processing; and	**X**
	v. Other exception events such as power failures, failure of critical hardware components, data transmission errors, or other type of operating anomaly.	**X**
b.	Critical system status messages other than informational messages displayed by the system during the course of normal operations, including, but are not limited to:	
	i. Diagnostic and status messages upon startup;	**X**
	ii. The "zero totals" check conducted before opening the polling place or counting a precinct centrally;	**X**
	iii. For paper-based systems, the initiation or termination of card reader and communications equipment operation; and	**X**
	iv. For DRE machines at controlled voting locations, the event (and time, if available) of activating and casting each ballot (i.e., each voter's transaction as an event). This data can be compared with the public counter for reconciliation pur	**X**
c.	Non-critical status messages that are generated by the machine's data quality monitor or by software and hardware condition monitors.	**X**
d.	System generated log of all normal process activity and system events that require operator intervention, so that each operator access can be monitored and access sequence can be constructed.	**X**
5.5	**Voter Secrecy on DRE Systems**	
a.	Immediately after the voter casts a ballot, the voter's selections are recorded in memory to be used for vote counting and audit data, including ballot images, and the selections are erased from the display, memory and all other storage, including all for	**X (OVI POV)**
b.	Immediately after the voter cancels a ballot, selections are erased from the display and all other storage, including buffers and other temporary storage.	**X (OVI POV)**
7.2.1.1	**Individual Access Privileges**	
	c. Permitting the voter to cast a ballot expeditiously, but precluding voter access to all other aspects of the vote-counting processes.	**X**
Vol. 2 3.3.1	**Testing in parallel with Precinct Count Systems**	
	For testing voting functions defined in Volume I, Sections 2, the following procedures shall be performed during the functionality tests of voting equipment and precinct counting equipment.	
	The procedure to prepare election programs shall:	
	Verify program memory device content	**X**
	The procedures to simulate opening of the polls shall:	

	Obtain "zero" printout or other evidence that data memory has been cleared	**X**

VVSG Req. No.	2005 VVSG Volume I Functional Requirement Matrix	REQUIREMENTS MET
Vol. 2 3.3.2	Testing in parallel with Central Count Systems	
	For testing voting functions defined in Volume I, Sections 2, the following procedures shall be performed during the functional tests.	
	The procedure to prepare election programs shall:	
	Verify program memory device content	**X**

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POST-VOTING TEST SUITE
TEST CASE PROCEDURE SPECIFICATION
FOR
UNISYN VOTING SOLUTIONS, INC.
OPENELECT VOTING SYSTEM, VERSION 1.0

Prepared by:

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U.S. Election Assistance Commission
VSTL
EAC Lab Code 0704

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1.0 INTRODUCTION

The purpose of the Test Case Procedure Specification is to document the "Post-Voting" functionality of the Unisyn OpenElect Voting System (OVS), version 1.0. As part of the Functional Configuration Audit, Wyle must verify that the OVS performs as documented in the Unisyn supplied Technical Data Package submitted to Wyle for the test campaign. Wyle must also validate that the OVS meets the requirements of the 2005 EAC Voluntary Voting Systems Guidelines (VVSG). As part of the Functional Configuration Audit, Wyle qualified personnel will use this document as the procedure to execute the entire "Post-Voting" test suite.

1.1 Scope

The scope of this procedure will focus on all activities performed from verification of machine reports to the EMS post election activities. These activities include verifying election results, tabulation of results, Rank Choice Voting (RCV) tabulation, consolidating voted data, Transport Media (TM) maintenance & cleaning, uploading machine logs from Transport Media, concluding an election, backing up results, aging election 22 months, deleting elections, and auditing voting machine logs. The specific applications of the OVS used in this test suite are:

- Tabulator Monitor
- Tabulator Client
- Tabulator Reports
- Election Manager
- OVCS Application

Election Manager provides some functionality that is considered "Post-Voting" functions. These include TM maintenance, upload of the OpenElect Voting Optical Scan (OVO) machine logs, and concluding an election, which was exercised in the Pre-Voting Test Suite.

1.2 References

The documents listed below were used in the development of the Test Plan and are utilized to perform certification testing.

- Election Assistance Commission 2005 Voluntary Voting System Guidelines, Volume I, Version 1.0, "Voting System Performance Guidelines", and Volume II, Version 1.0, "National Certification Testing Guidelines", dated December 2005
- Election Assistance Commission Testing and Certification Program Manual, Version 1.0, effective date January 1, 2007
- Election Assistance Commission Voting System Test laboratory Program Manual, Version 1.0, effective date July 2008
- National Voluntary Laboratory Accreditation Program NIST Handbook 150, 2006 Edition, "NVLAP Procedures and General Requirements (NIST Handbook 150)", dated February 2006

1.0 INTRODUCTION (continued)

1.2 References (continued)

- National Voluntary Laboratory Accreditation Program NIST Handbook 150-22, 2008 Edition, "Voting System Testing (NIST Handbook 150-22)", dated May 2008
- United States 107th Congress Help America Vote Act (HAVA) of 2002 (Public Law 107-252), dated October 2002
- Wyle Laboratories' Test Guidelines Documents: EMI-001A, "Wyle Laboratories' Test Guidelines for Performing Electromagnetic Interference (EMI) Testing", and EMI-002A, "Test Procedure for Testing and Documentation of Radiated and Conducted Emissions Performed on Commercial Products"
- Wyle Laboratories' Quality Assurance Program Manual, Revision 4
- ANSI/NCSL Z540-1, "Calibration Laboratories and Measuring and Test Equipment, General Requirements"
- ISO 10012-1, "Quality Assurance Requirements for Measuring Equipment"
- EAC Requests for Interpretation (listed on www.eac.gov)
- EAC Notices of Clarification (listed on www.eac.gov)

1.3 Terms and Abbreviations

The terms and abbreviations relevant to the test campaign are described in Table 1-1, below.

Table 1-1 Terms and Abbreviations

Term	Abbreviation	Definition
Ballot Layout Manager	BLM	Unisyn OVS application used to layout ballot information.
Commercial Off the Shelf	COTS	---
Direct Recording Electronic	DRE	---
United States Election Assistance Commission	EAC	Commission created per the Help America Vote Act of 2002, assigned the responsibility for setting voting system standards and providing for the voluntary testing and certification of voting systems.
Election Manager	EM	Utilizes the election definition file from the Ballot Layout Manager, adds jurisdiction voting device specific options and produces the CD used to load the election onto the voting devices and OVCS.
Election Management System	EMS	Within the OpenElect system, the EMS equivalent is OCS.

1.0 INTRODUCTIONS (continued)

1.3 Terms and Abbbreviations (continued)

Table 1-1 Terms and Abbreviations (continued)

Election Server	ES	A component of the OCS, the ES updates the system clock and downloads new Election data to the voting devices prior to each election, typically at the warehouse.
Equipment Under Test	EUT	---
Functional Configuration Audit	FCA	Exhaustive verification of every system function and combination of functions cited in the manufacturer's documentation.
OpenElect Central Suite	OCS	Set of applications supplied by Unisyn to run at the Election Headquarters to support elections on the OVO, OVI, and OVCS systems. Includes: allot Layout Manager, Election Manager, Election Server, Tabulator Client, Tabulator Server and Tabulator Reports. In addition, the OCS includes the Software Server (SS) system for updating and validating OVO and OVI (voting device) software.
OpenElect Voting Device	OVD	OVD refers to the OVO, OVI, and OVCS hardware components of the OpenElect Voting System.
OpenElect Voting Interface	OVI	The OVI is an accessible voting device designed to accommodate voters with disabilities, and may also be used for Early Voting.
OpenElect Voting Optical Scan	OVO	The OVO is a ballot scanning and tabulation device which is located at a precinct and may also be used for Early Voting purposes.
OpenElect Voting System	OVS	The OVS is a voting system which is comprised of the OVS suite of software applications, and the OVO and OVI client machines used by voters to produce and cast ballots.
OpenElect Voting Central Scan	OVCS	The OVCS is a high speed optical scan unit used at the central count location. The OVCS processes early voting, absentee, and provisional ballots, by capturing write-in votes, and capturing images of each ballot processed. The OVCS can be used to count all ballots for an election at the central count location in a smaller jurisdiction, or to recount ballots in large jurisdictions.

1.0 INTRODUCTIONS (continued)

1.4 Relationship to Other Procedures

The Post-Voting Test Case Procedure Specification is the last procedure to be executed as part of the FCA. No other test procedures need to be run concurrent with this procedure. This procedure requires both Pre-Voting Test Suite and Voting Test Suite be completed before this procedure is run. This procedure requires the election definition from Pre-Voting Test Suite for tabulation and database management functions. This procedure also requires voted data loaded on the Transport Media and machine reports Voting Test Suite.

2.0 DETAILS

The following subsections describe the requirements and sequence that the individual test cases will be run in to facilitate the reporting and auditing of the election.

2.1 Inputs, Outputs, and Special Requirements

Input data will be entered into the OCS using both equivalence partitioning and boundary value testing. For each data entry point, an entry will be made for both invalid and valid data. For data entry points that support a range of data, an entry will be made below the range, within the range, and outside the range to test minimum and maximum values supported. The first Run in the Post-Voting Test Suite will only input valid data and produce election reports and an election database that will be audited for accurate election data. This run will be used during the System Intergration Testing as a template for the execution of the election definititions.

The inputting of invalid data and data outside boundary ranges will generate error conditions. During the execution of this entire test suite Wyle qualified personnel are to pay specific attention to the following error and privacy requirements:

Table 2-1 Error and Privacy Requirements

Section		Requirement
VI-2.1.3	a	Restoration of the device to the operating condition existing immediately prior to an error or failure, without loss or corruption of voting data previously stored in the device.
	b	Resumption of normal operation following the correction of a failure in a memory component, or in a data processing component, including the central processing unit.
	c	Recovery from any other external condition that causes equipment to become inoperable, provided that catastrophic electrical or mechanical damage due to external phenomena has not occurred.
VI-2.1.4	f	Protection against any attempt at improper data entry or retrieval.
V1-2.1.5		System's characteristics documented in sufficient detail for accredited test labs and system users to evaluate the adequacy of the system's audit trail.
VI-2.1.5.1		Audit records are prepared for all phases of election operations performed using devices controlled by the jurisdiction or its contractors. (Includes ballot preparation, election definition, system readiness tests, voting, and ballot-counting operations).
VI-2.1.5.1.b	i	Generation, storage and reporting of all error messages as they occur to the user.

2.0 DETAILS (continued)

2.1 Inputs, Outputs, and Special Requirements (continued)

Table 2-1 Error and Privacy Requirements (continued)

	ii	All error messages requiring intervention by an operator or precinct official are displayed or printed unambiguously in easily understood language text, or by means of other suitable visual indicators.
	iii	System use of numerical error codes for trained technician maintenance or repair containing the text corresponding to the code is self-contained, or affixed inside the unit device.
	iv	All error messages written clearly.
	v	The message cue for all systems shall clearly state the action to be performed in the event that voter or operator response is required.
	vi	That an erroneous response would not lead to irreversible error.
	vii	Nested error conditions are corrected in a controlled sequence such that system status shall be restored to the initial state existing before the first error occurred.
VI-2.1.5.1c	i	The display and report of critical status messages use unambiguous indicators or English language
VI-2.2.3	a	A detailed work plan or other documentation providing a schedule and steps for the software and ballot installation, which includes a table outlining the key dates, events and deliverables.
VI-2.3.1.2	f	All paper-based precinct count equipment shall include a means of identifying device failure and corrective action needed.
VI-2.3.3.1	b	All systems shall protect the secrecy of the vote such that the system cannot reveal any information about how a particular voter voted, except as otherwise required by individual State law.
VI-2.3.3.2	d	All paper-based systems shall protect the secrecy of the vote throughout the process.
VI – 4.1.3.1	a c e	Voting systems shall accurately record all election management data entered by the user, including election officials or their designees. For recording accuracy, all systems shall: Record every entry made by the user. Verify the correctness of detection of the user selections and the addition of the selections correctly to memory. Verify the correctness of detection of data entered directly by the user and the addition of the selections correctly to memory.
VI – 7.2.1.1	c	When the provision of accessibility involves an alternative format for ballot presentation, then all information presented to voters including instructions, warnings, error and other messages, and ballot choices shall be presented in that alternative format.
VI – 7.9.5	a	Voter privacy shall be preserved during the process of recording, verifying and auditing his or her ballot selections.

2.2 Sequence

The sequence for this test suite is broken down into “Runs”. A run is a set of test cases which are executed in a logical order designed to exercise specific functionality of the OCS. The test suite contains a total of 17 runs. All three Tabulator applications are dependent on each other. Election Manager has one post voting run. For ease of testing, the runs should be run sequentially, as it is assumed that the data obtained in the previous run is available for the subsequent run. The required runs are presented in Attachment A.

3.0 TEST COVERAGE REPORTING

This test suite functionally tests the following post-voting functions handled by the OCS:

Table 3-1 OCS Functional Tests

TABULATOR MONITOR	
Functions	**Subfunctions**
General Application Functions	Login
	Logout
	Exit application
Using the Tabulator	Import new election
	Open election
	Close election
	Delete imported election
User Management	Replace the default Superuser
	Verified Admin User vs. Superuser role
	Add users
	Change user password
	Deactivate, reactivate, and delete users
Managing Tabulator Runs	Create tabulation run
	Training run
	Logic test run
	Early Voting tabulation run
	Election Day tabulation run
	Absentee tabulation run
	Recount tabulation run
Tabulating Votes	Vote Consolidation Status – Uploaded Precincts
	Vote Consolidation Status – Missing Precincts
	Create adjustment entry
	Manual vote entry using candidate count form
	Manual vote entry invalidates RCV tally results
	Tally RCV contests
	RCV contest tally options
	RCV tally reports
	Upload voter registration information
Election Management	Exercise Tabulator preferences
	Backup election results
	Import election reults
Audits and Maintenance	Application log
	Accessing help functions
	About Unisyn and Tabulator Monitor application
TABULATOR CLIENT	
Functions	**Subfunctions**
General Application Functions	Login to Tabulator Client using Election CD
	Exit application
Uploading Activity/Instructions	Green Light: Insert TM
	Yellow Light: Validating files
	Red Light: Error
	Black Light: Finished
Audits and Maintenance	Application log
	Accessing help functions

	About Unisyn and Tabulator Client application

3.0 TEST COVERAGE REPORTING (continued)

Table 3-1 OCS Functional Tests (continued

TABULATOR REPORTS	
Functions	**Subfunctions**
General Application Functions	Login
	Logout
	Exit application
Accessing Election Results	Open and election
	Selecting a tabulation run
	Closing an election
Reports	Generating reports
	Navigating reports
	Official and unofficial reports
	Election summary report
	Election detail report
	Voter turnout report
	Over/under report
	Statement of vote report
	Supplemental statement of vote report
Audits and Maintenance	Application log
	Accessing help functions
	About Unisyn and Tabulator Reports application
ELECTION MANAGER	
Functions	**Subfunctions**
TM Upload and Cleaning	TM maintenance
	Upload machine logs from TM
	TM cleaning
OpenElect Voting Central Scan	
Functions	**Subfunctions**
General Application Functions	Login
	Logout
	Exit Application
	Protective Count
Canon Scanner	Setup the Scanner
	Loading Ballots
	Reading Ballots
	Centering Guides
	Control panel
	Scanner Errors
	Setting Scanner Parameters
Sessions and Batches	Starting a New Session
	Creating Zero Balance Report
	Processing a Batch
	Recovery of Incomplete Session
	Closing a Session
Upload Sessions	Selecting Sessions
	Uploading Session data to Tabulator

3.0 TEST COVERAGE REPORTING (continued)

Table 3-1 OCS Functional Tests (continued

OVCS Reports	General Report Information
	Generating Reports
Audits and Maintenance	Session Machine Logs
	Application Log
	Help
	About Unisyn
	Diagnostics
	Backup
	Restore

ATTACHMENT A
REQUIRED TEST RUNS

TABULATOR – RUN 1				
TABULATOR MONITOR, TABULATOR CLIENT, TABULATOR REPORTS & OVCS				
ELECTION DAY				
	System	**Functional Description**	**Test Case No.**	**Test Case Name**
1		Verify voting reports	POST_TC-01	Verify Voting Reports
2	Monitor	OS Access	PRE_TC-01	OS Access
3	Monitor	EMS Access	PRE_TC-02	EMS Access
4	Monitor	Login as superuser, password: <admin> & change password to <admin1>	PRE_TC-78	Change EMS Password During Initial Login
5	Monitor	Import election using election CD	POST_TC-ILTS-01	Import election using election CD
6	Monitor	Open election	PRE_TC-44	DB Management Election DB Edit
7	Client	Login to EMS using election CD for tabulator client using <maint> password	PRE_TC-ILTS-59	Login to EMS Using Election CD
8	Client	Consolidate data from media - TM - will give error of "invalid active session"	POST_TC-05	Consolidate Data From Media
9	Monitor	Create new run in tabulator monitor - run name: Logic Test, run type: Logic Test, check active run	POST_TC-ILTS-02	Create Run in Tabulator
10	Client	Consolidate data from media - TM	POST_TC-05	Consolidate Data From Media
11	Client	Import election data	POST_TC-08	Import Election Data
12	Client	Tally election data	POST_TC-14	Tally Election Data
13	Client	Logout of EMS	PRE_TC-102	Logout of EMS
14	OVCS	OS Access	PRE_TC-01	OS Access
15	OVCS	Login to EMS using election CD using <maint> password	PRE_TC-ILTS-59	Login to EMS Using Election CD
16	OVCS	Create new NORMAL session	POST_TC-ILTS-18	Create new Session
17	OVCS	Create zero balance report	POST_TC-ILTS-19	Create Zero Balance Report
18	OVCS	Save zero balance report	POST_TC-ILTS-20	Save Report
19	OVCS	View protective counter	POST_TC-ILTS-17	View Protective Counter
20	OVCS	Start single scan	POST_TC-ILTS-21	Single Scan
21	OVCS	Commit (batch)	POST_TC-ILTS-30	Consolidate Data from Central Scan

22	OVCS	Close session	POST_TC-14	Tally Election Data

TABULATOR – RUN 1 *(continued)*				
TABULATOR MONITOR, TABULATOR CLIENT, TABULATOR REPORTS & OVCS				
ELECTION DAY				
	System	**Functional Description**	**Test Case No.**	**Test Case Name**
23	OVCS	Create session summary report: Election: open	POST_TC-ILTS-22	Create Session Summary Report
24	OVCS	Save session summary report	POST_TC-ILTS-20	Save Report
25	OVCS	Create session summary report: Election: closed	POST_TC-ILTS-22	Create Session Summary Report
26	OVCS	Save session summary report	POST_TC-ILTS-20	Save Report
27	Monitor	Create new run in tabulator monitor - run name: OVCS Normal, run type: Normal, check active run	POST_TC-ILTS-02	Create Run in Tabulator
28	OVCS	Select session to upload	POST_TC-ILTS-23	Select Session(s) to Upload
29	OVCS	Upload to tabulator	POST_TC-ILTS-24	Import Tallied Data from OVCS
30	OVCS	Logout of EMS	PRE_TC-102	Logout of EMS
31	Monitor	Backup election database	POST_TC-19	Backup Election Database
32	Monitor	Close election	PRE_TC-108	Close Election
33	Monitor	Logout of EMS	PRE_TC-102	Logout of EMS
34	Report	Login to EMS - user name & password from Tabulator Monitor	PRE_TC-02	Login to EMS
35	Report	Open election	PRE_TC-44	DB Management Election DB Edit
36	Report	Select Tabulator Run – Logic Test	POST_TC-ILTS-09	Select Tabulator Run
37	Report	Print tally data & verify logic test - Official Election Detail Report	POST_TC-15	Print Vote Tally Data
38	Report	Print & verify logic test - official election summary	POST_TC-16	Print & Verify Election Summary
39	Report	Print & verify logic test - official precinct summary	POST_TC-17	Print & Verify Precinct Summary
40	Report	Select Tabulator Run – Normal	POST_TC-ILTS-09	Select Tabulator Run
41	Report	Print tally data & verify Normal -	POST_TC-15	Print Vote Tally Data

		Official Election Detail Report		

TABULATOR – RUN 1 *(continued)*				
TABULATOR MONITOR, TABULATOR CLIENT, TABULATOR REPORTS & OVCS				
ELECTION DAY				
	System	**Functional Description**	**Test Case No.**	**Test Case Name**
42	Report	Print & verify Normal - official election summary	POST_TC-16	Print & Verify Election Summary
43	Report	Print & verify Normal-official precinct summary	POST_TC-17	Print & Verify Precinct Summary
44	Report	Close election	PRE_TC-108	Close Election
45	Report	Logout of EMS	PRE_TC-102	Logout of EMS
46	Report	Logout of OS	PRE_TC-103	Logout of OS

TABULATOR MONITOR – RUN 2				
REPLACE DEFAULT SUPERUSER, USER MANAGEMENT - DELETING & REACTIVATING USERS				
	System	**Functional Description**	**Test Case No.**	**Test Case Name**
1		OS Access	PRE_TC-01	OS Access
2		EMS Access - superuser password: <admin1>	PRE_TC-02	EMS Access
3		Add user - user: tabsuper, role: superuser, password: <tab>	PRE_TC-06	EMS Administration Add User
4		Logout of EMS	PRE_TC-102	Logout of EMS
5		Login to EMS - user: tabsuper, password: <tab0>	PRE_TC-02	EMS Access
6		Change password during initial logini - new password: <tab1>	PRE_TC-78	Change EMS Password During Initial Login
7		Deactivate user - superuser	PRE_TC-ILTS-10	Deactivate User
8		Logout of EMS	PRE_TC-102	Logout of EMS
9		EMS Access - superuser password: <admin1>	PRE_TC-02	EMS Access
10		EMS Access - tabsuper	PRE_TC-02	EMS Access
11		Reactivate user - superuser	PRE_TC-ILTS-12	Reactivate User
12		Change/update password - superuser new password: <admin2>	PRE_TC-104	Change/Update Password
13		Logout of EMS	PRE_TC-102	Logout of EMS
14		Login to EMS - superuser, password: <admin2>	PRE_TC-02	EMS Access
15		Logout of EMS	PRE_TC-102	Logout of EMS
16		EMS access - tabsuper password: <tab1>	PRE_TC-02	EMS Access
17		Deactivate user - superuser	PRE_TC-ILTS-10	Deactivate User
18		Delete user - superuser	PRE_TC-08	EMS Administration Delete User
19		Logout of EMS	PRE_TC-102	Logout of EMS
20		EMS Access - superuser password: <admin2>	PRE_TC-02	EMS Access

TABULATOR MONITOR – RUN 2 *(continued)*				
REPLACE DEFAULT SUPERUSER, USER MANAGEMENT - DELETING & REACTIVATING USERS				
	System	**Functional Description**	**Test Case No.**	**Test Case Name**
21		EMS access - tabsuper password: <tab1>	PRE_TC-02	EMS Access
22		Add user - tabadmin password: <tabadmin>	PRE_TC-06	EMS Administration Add User
23		Logout of EMS	PRE_TC-102	Logout of EMS
24		EMS access - tabadmin password: <tabadmin>	PRE_TC-02	EMS Access
25		Change password during initial login - new password: <tabadmin1>	PRE_TC-78	Change EMS Password During Initial Login
26		Logout of EMS	PRE_TC-102	Logout of EMS
27		Logout of OS	PRE_TC-103	Logout of OS

TABULATOR – RUN 3				
USER ROLES, RCV TALLY & REPORT, CONSOLIDATION STATUS & SNAPSHOTS, UPLOAD VOTER REGISTRATION DATA				
	System	**Functional Description**	**Test Case No.**	**Test Case Name**
1		Login to OS	PRE_TC-01	OS Access
2		Login to EMS - tabadmin, password: <tabadmin1>	PRE_TC-02	EMS Access
3		Verify roles in EMS - tabadmin	PRE_TC-86	Verify User Roles in EMS
4		Import election using election CD	POST_TC-ILTS-01	Import election using election CD
5		Open election	PRE_TC-44	DB Management Election DB Edit
6		Manually input absentees – Should Fail	POST_TC-09	Manual Input Absentees
7		Manually input provisional – Should Fail	POST_TC-10	Manual Input Provisional
8		Manually input challenged – Should Fail	POST_TC-11	Manual Input Challenged
9		Backup election database	POST_TC-19	Backup Election Database
10		Import election results	POST_TC-ILTS-03	Import Election Results
11		Add user	PRE_TC-06	EMS Administration Add User
12		Close election	PRE_TC-108	Close Election
13		Delete election imported into tabulator	POST_TC-ILTS-04	Delete election imported into tabulator
14		Logout of EMS	PRE_TC-102	Logout of EMS
15		Login to EMS - tabsuper, password: <tab1>	PRE_TC-02	EMS Access
16		Verify roles in EMS - tabsuper	PRE_TC-86	Verify User Roles in EMS
17		Delete election imported into tabulator	POST_TC-ILTS-04	Delete election imported into tabulator
18		Import election using election CD	POST_TC-ILTS-01	Import election using election CD
19		Open election	PRE_TC-44	DB Management Election DB Edit
20		Backup election database ElectionBackup _101_2009_08 _13_16_02_05.uva	POST_TC-19	Backup Election Database
21		Close election	PRE_TC-108	Close Election
22		Delete election	POST_TC-ILTS-04	Delete election imported into

		imported into tabulator		tabulator

TABULATOR – RUN 3 *(continued)*				
USER ROLES, RCV TALLY & REPORT, CONSOLIDATION STATUS & SNAPSHOTS, UPLOAD VOTER REGISTRATION DATA				
	System	**Functional Description**	**Test Case No.**	**Test Case Name**
23		Import election results - use backup of results	POST_TC-ILTS-03	Import Election Results
24		Open election - imported election	PRE_TC-44	DB Management Election DB Edit
25		Delete election imported into tabulator	POST_TC-ILTS-04	Delete election imported into tabulator
26		Close election	PRE_TC-108	Close Election
The following training election must have RCV voting included				
27		Import election using election CD	POST_TC-ILTS-01	Import election using election CD
28		Open election - imported election	PRE_TC-44	DB Management Election DB Edit
29	Client	Login to EMS using election CD as supervisor	PRE_TC-ILTS-59	Login to EMS Using Election CD
30		Consolidate data from media - TM	POST_TC-05	Consolidate Data From Media
31		Upload voter registration data - .csv file	POST_TC-ILTS-05	Upload Voter Registration Information
32		Tally election data - default options RCV tally	POST_TC-14	Tally Election Data
33		RCV tally report	POST_TC-ILTS-06	RCV Tally Report
34		Navigate reports	PRE_TC-ILTS-17	Navigate Reports
35		View consolidation status - uploaded	POST_TC-ILTS-07	View Consolidation Status
36		Refresh view - verify that time stamp updates	POST_TC-ILTS-08	Refresh View
37		Log snapshot - verify	PRE_TC-ILTS-44	Log Snapshot
38		Vote consolidation status - missing	POST_TC-ILTS-07	View Consolidation Status
39		Refresh view - verify that time stamp updates	POST_TC-ILTS-08	Refresh View
40		Log snapshot - verify	PRE_TC-ILTS-44	Log Snapshot
41		Manually adjust tally tables	POST_TC-25	Manually Adjust Tally Tables
42		Adjust candidate counts 0 - 1 vote for first person in first non-rcv	POST_TC-24	Adjust Candidate Counts

43		View consolidation status - uploaded	POST_TC-ILTS-07	View Consolidation Status
44		Clear tally tables	POST_TC-13	Clear Tally Tables
45	Monitor	Logout of EMS	PRE_TC-102	Logout of EMS
TABULATOR – RUN 3 *(continued)*				
USER ROLES, RCV TALLY & REPORT, CONSOLIDATION STATUS & SNAPSHOTS, UPLOAD VOTER REGISTRATION DATA				
	System	**Functional Description**	**Test Case No.**	**Test Case Name**
46	Monitor	Login to EMS - tabadmin	PRE_TC-02	EMS Access
47		Open election	PRE_TC-44	DB Management Election DB Edit
48		Consolidate data from media - TM	POST_TC-05	Consolidate Data From Media
49		Upload voter registration info - .csv file	POST_TC-ILTS-05	Upload Voter Registration Information
50		Manually adjust tally tables	POST_TC-25	Manually Adjust Tally Tables
51		Tally election data - default options RCV tally	POST_TC-14	Tally Election Data
52		RCV tally report	POST_TC-ILTS-06	RCV Tally Report
53		Navigate reports	PRE_TC-ILTS-17	Navigate Reports
54		Close election	PRE_TC-108	Close Election
55	Client	Logout of EMS	PRE_TC-102	Logout of EMS
56	Monitor	Logout of EMS	PRE_TC-102	Logout of EMS
57	Reports	Login to EMS - administratior	PRE_TC-02	EMS Access
58		Open election	PRE_TC-44	DB Management Election DB Edit
59		Print tally data "Election Detail Report" - unofficial & verify "Training" on report	POST_TC-15	Print Vote Tally Data
60		Navigate reports	PRE_TC-ILTS-17	Navigate Reports
61		Close election	PRE_TC-108	Close Election
62	Reports	Logout of EMS	PRE_TC-102	Logout of EMS
63		Logout of OS	PRE_TC-103	Logout of OS

TABULATOR – RUN 4				
CREATE RUNS, TYPES, SET ACTIVE RUNS & SELECT RUNS				
USE SAME ELECTION AS RUN 3				
	System	**Functional Description**	**Test Case No.**	**Test Case Name**
1		Login to OS	PRE_TC-01	OS Access
2	Monitor	Login to EMS as superuser	PRE_TC-02	EMS Access
3		Open election	PRE_TC-44	DB Management Election DB Edit
4	Monitor	Create new run - Name: Test Logic, Type: Logic Test, uncheck Active Run, check Upload Vote Files	POST_TC-ILTS-02	Create Run in Tabulator
5		Select tabulator run - Test Logic	POST_TC-ILTS-09	Select Tabulator Run
6		Set active run - Test Logic	POST_TC-ILTS-10	Set Active Run
7		Create new run - Name: Normal, Type: Normal, uncheck Active Run, check Upload Vote Files	POST_TC-ILTS-02	Create Run in Tabulator
8		Select tabulator run - Normal	POST_TC-ILTS-09	Select Tabulator Run
9		Set active run - Normal	POST_TC-ILTS-10	Set Active Run
10		Create new run - Name: Test Recount, Type: Recount, uncheck Active Run, check Upload Vote Files	POST_TC-ILTS-02	Create Run in Tabulator
11		Select tabulator run - Test Recount	POST_TC-ILTS-09	Select Tabulator Run
12		Set active run - Test Recount	POST_TC-ILTS-10	Set Active Run
13		Close election	PRE_TC-108	Close Election
14		Logout of EMS	PRE_TC-102	Logout of EMS
15		Logout of OS	PRE_TC-103	Logout of OS

TABULATOR - RUN 5				
TABULATOR MONITOR HELP, ABOUT, AUDIT LOGS & LOG SNAPSHOTS				
TABULATOR CLIENT HELP, ABOUT, AUDIT LOGS & LOG SNAPSHOTS				
TABULATOR REPORTS HELP, ABOUT, AUDIT LOGS & LOG SNAPSHOTS				
OVCS HELP, ABOUT, AUDIT LOGS & LOG SNAPSHOTS				
	System	**Functional Description**	**Test Case No.**	**Test Case Name**
1		Login to OS	PRE_TC-01	OS Access
2	Monitor	Login to EMS as superuser	PRE_TC-02	EMS Access
3	Monitor	Access help	PRE_TC-113	Access Help
4	Monitor	Access about	PRE_TC-ILTS-36	Access About (Unisysn & Application)
5	Monitor	Access application log	PRE_TC-ILTS-42	Acess Application Log
6	Monitor	Audit of EMS	POST_TC-21	Audit of EMS
7	Monitor	Real-time auditing of EMS	POST_TC-23	Real-time auditing of EMS
8	Monitor	Navigate logs	PRE_TC-ILTS-43	Navigate Logs
9	Monitor	Log snapshot	PRE_TC-ILTS-44	Log Snapshot
10	Monitor	Logout of EMS	PRE_TC-102	Logout of EMS
11	Client	Login to EMS using election CD	PRE_TC-ILTS-59	Login to EMS Using Election CD
12	Client	Access help	PRE_TC-113	Access Help
13	Client	Access about	PRE_TC-ILTS-36	Access About (Unisysn & Application)
14	Client	Access application log	PRE_TC-ILTS-42	Access Application Log
15	Client	Audit of EMS	POST_TC-21	Audit of EMS
16	Client	Real-time auditing of EMS	POST_TC-23	Real-time auditing of EMS
17	Client	Navigate logs	PRE_TC-ILTS-43	Navigate Logs
18	Client	Log snapshot	PRE_TC-ILTS-44	Log Snapshot
19	Client	Logout of EMS	PRE_TC-102	Logout of EMS
20	Reports	Login to EMS as superuser	PRE_TC-02	EMS Access
21	Reports	Edit preferences - read only	PRE_TC-112	Edit Preferences
22	Reports	Access help	PRE_TC-113	Access Help
23	Reports	Access about	PRE_TC-ILTS-36	Access About (Unisysn & Application)
24	Reports	Access application log	PRE_TC-ILTS-42	Acess Application Log
25	Reports	Audit of EMS	POST_TC-21	Audit of EMS
26	Reports	Real-time auditing of EMS	POST_TC-23	Real-time auditing of EMS
27	Reports	Navigate logs	PRE_TC-ILTS-43	Navigate Logs
28	Reports	Log snapshot	PRE_TC-ILTS-44	Log Snapshot
29	Reports	Logout of EMS	PRE_TC-102	Logout of EMS
30	OVCS	Login to OS	PRE_TC-01	OS Access

TABULATOR - RUN 5 *(continued)*				
TABULATOR MONITOR HELP, ABOUT, AUDIT LOGS & LOG SNAPSHOTS				
TABULATOR CLIENT HELP, ABOUT, AUDIT LOGS & LOG SNAPSHOTS				
TABULATOR REPORTS HELP, ABOUT, AUDIT LOGS & LOG SNAPSHOTS				
OVCS HELP, ABOUT, AUDIT LOGS & LOG SNAPSHOTS				
	System	**Functional Description**	**Test Case No.**	**Test Case Name**
31	OVCS	Login to EMS using election CD	PRE_TC-ILTS-59	Login to EMS Using Election CD
32	OVCS	Access help	PRE_TC-113	Access Help
33	OVCS	Access about	PRE_TC-ILTS-36	Access About (Unisysn & Application)
34	OVCS	Access application log	PRE_TC-ILTS-42	Access Application Log
35	OVCS	Audit of EMS	POST_TC-21	Audit of EMS
36	OVCS	Navigate logs	PRE_TC-ILTS-43	Navigate Logs
37	OVCS	Log snapshot	PRE_TC-ILTS-44	Log Snapshot
38	OVCS	Real-time auditing of EMS	POST_TC-23	Real-time auditing of EMS
39	OVCS	Logout of EMS	PRE_TC-102	Logout of EMS
40		Logout of OS	PRE_TC-103	Logout of OS

TABULATOR CLIENT – RUN 6				
UNCLOSED VOTING TM, NON-MATCHING ELECTION TM				
	System	**Functional Description**	**Test Case No.**	**Test Case Name**
1		Login to OS	PRE_TC-01	OS Access
2	Client	Login to EMS using election CD - supervisor	PRE_TC-ILTS-59	Login to EMS Using Election CD
3		Consolidate data from media - TM - use TM from different election	POST_TC-05	Consolidate Data From Media
4		Consolidate data from media - TM - use TM with open election	POST_TC-05	Consolidate Data From Media
5		Logout of EMS	PRE_TC-102	Logout of EMS
6		Logout of OS	PRE_TC-103	Logout of OS

TABULATOR - RUN 7				
ABSENTEE TABULATION INCLUDING OVCS, FILTER SPECIAL SESSIONS, MANUAL ADJUST & MANUAL ADJUST INVALIDATES RCV				
REAL ELECTION MUST BE USED				
AN ABSENTEE VOTING SESSION MUST BE USED FOR TABULATION				
	System	**Functional Description**	**Test Case No.**	**Test Case Name**
1		Verify voting reports	POST_TC-01	Verify Voting Reports
2		OS access	PRE_TC-01	OS Access
3	Monitor	Login to EMS as superuser	PRE_TC-02	EMS Access
4		Open election	PRE_TC-44	DB Management Election DB Edit
5	Client	Login to EMS using election CD - maintenance password	PRE_TC-ILTS-59	Login to EMS Using Election CD
6		Create new run - Name: Absentee, Type: Normal, check Is Active, check Upload Vote Files	POST_TC-ILTS-02	Create Run in Tabulator
7		Consolidate data from media -TM	POST_TC-05	Consolidate Data From Media
8		View consolidation status - uploaded	POST_TC-ILTS-07	View Consolidation Status
9		Filter special sessions - verify that absentee count is hidden	POST_TC-ILTS-11	Filter Special Sessions
10		View consolidation status - missing & verify that absentee count is present	POST_TC-ILTS-07	View Consolidation Status
11		Filter special sessions - verify that absentee is no longer present	POST_TC-ILTS-11	Filter Special Sessions
12		View consolidation status - uploaded & verify that absentee is no longer hidden	POST_TC-ILTS-07	View Consolidation Status
13		Import election data	POST_TC-08	Import Election Data
14		Tally election data	POST_TC-14	Tally Election Data
15		Tally election data - default options (RCV tally)	POST_TC-14	Tally Election Data
16	Client	Logout of EMS	PRE_TC-102	Logout of EMS

TABULATOR - RUN 7 *(continued)*				
ABSENTEE TABULATION INCLUDING OVCS, FILTER SPECIAL SESSIONS, MANUAL ADJUST & MANUAL ADJUST INVALIDATES RCV				
REAL ELECTION MUST BE USED				
AN ABSENTEE VOTING SESSION MUST BE USED FOR TABULATION				
	System	**Functional Description**	**Test Case No.**	**Test Case Name**
17		Manually adjust tally tables - Name: Absentee Adjustment, Slope: Election Wide, Precincts: All, Public Count: 1	POST_TC-25	Manually Adjust Tally Tables
18		Adjust candidate counts - +2 votes for candidate in non-RCV contest	POST_TC-24	Adjust Candidate Counts
19		Adjust candidate counts - +1 vote for candidate in non-RCV contest	POST_TC-24	Adjust Candidate Counts
20	OVCS	Login to EMS using election CD using maintenance password	PRE_TC-ILTS-59	Login to EMS Using Election CD
21	OVCS	Create new ABSENTEE session	POST_TC-ILTS-18	Create new Session
22	OVCS	Create zero balance report	POST_TC-ILTS-19	Create Zero Balance Report
23	OVCS	Save zero balance report	POST_TC-ILTS-20	Save Report
24	OVCS	Start bulk scan	POST_TC-ILTS-25	Bulk Scan
25	OVCS	Clear (batch)	POST_TC-ILTS-26	Clear Batch
26	OVCS	Start bulk scan	POST_TC-ILTS-25	Bulk Scan
27	OVCS	Commit (batch)	POST_TC-ILTS-30	Consolidate Data from Central Scan
28	OVCS	Close session	POST_TC-14	Tally Election Data
29	OVCS	Create session summary report	POST_TC-ILTS-22	Create Session Summary Report
30	OVCS	Save session summary report	POST_TC-ILTS-20	Save Report
31	OVCS	Select all sessions	POST_TC-ILTS-27	Select All Sessions
32	OVCS	Clear all sessions	POST_TC-ILTS-28	Clear All Sessions
33	OVCS	Comment on a session – Label absentee session as: 1st Absentee session	POST_TC-ILTS-29	Comment On A Session
34	OVCS	Upload to tabulator	POST_TC-ILTS-24	Import Tallied Data from OVCS
35	OVCS	Logout of EMS	PRE_TC-102	Logout of EMS
36	Monitor	RCV Tally	POST_TC-14	RCV Tally

TABULATOR - RUN 7 *(continued)*				
ABSENTEE TABULATION INCLUDING OVCS, FILTER SPECIAL SESSIONS, MANUAL ADJUST & MANUAL ADJUST INVALIDATES RCV				
REAL ELECTION MUST BE USED				
AN ABSENTEE VOTING SESSION MUST BE USED FOR TABULATION				
	System	**Functional Description**	**Test Case No.**	**Test Case Name**
37		Adjust candidate counts - +1 vote for candidate in RCV contest (will invalidate results)	POST_TC-24	Adjust Candidate Counts
38		Tally election data (RCV tally) - verify that adjusted RCV contest is no longer available	POST_TC-14	Tally Election Data
39		Logout of EMS	PRE_TC-102	Logout of EMS
40		Logout of OS	PRE_TC-103	Logout of OS

TABULATOR REPORTS – RUN 8				
ALL REPORTS & SELECT RUNS				
	System	**Functional Description**	**Test Case No.**	**Test Case Name**
1		OS Access	PRE_TC-01	OS Access
2	Reports	EMS Access	PRE_TC-02	EMS Access
3		Open election	PRE_TC-44	DB Management Election DB Edit
4		Print & view consolidated data reports - encompasses all tabulator reports	POST_TC-12	View & Print Consolidated Data Reports
5		Print & verify election summary - unofficial election summary report, select absentee contests, verify labeled unofficial	POST_TC-16	Print & Verify Election Summary
6		Navigate reports	PRE_TC-ILTS-17	Navigate Reports
7		Print & verify election summary - unofficial election summary report, select all contests, verify labeled unofficial	POST_TC-16	Print & Verify Election Summary
8		Navigate reports	PRE_TC-ILTS-17	Navigate Reports
9		Print & verify election summary - official election summary report, select absentee contests, verify labeled official	POST_TC-16	Print & Verify Election Summary
10		Navigate reports	PRE_TC-ILTS-17	Navigate Reports
11		Print & verify election summary - official election summary report, select all contests, verify labeled official	POST_TC-16	Print & Verify Election Summary
12		Navigate reports	PRE_TC-ILTS-17	Navigate Reports
13		Print vote tally data - unofficial election detail report, select absentee contests, verify labeled unofficial	POST_TC-15	Print Vote Tally Data
14		Navigate reports	PRE_TC-ILTS-17	Navigate Reports

TABULATOR REPORTS – RUN 8 *(continued)*				
ALL REPORTS & SELECT RUNS				
	System	**Functional Description**	**Test Case No.**	**Test Case Name**
15		Print vote tally data - unofficial election detail report, select all contests, verify labeled unofficial	POST_TC-15	Print Vote Tally Data
16		Navigate reports	PRE_TC-ILTS-17	Navigate Reports
17		Print vote tally data - official election detail report, select absentee contests, verify labeled official	POST_TC-15	Print Vote Tally Data
18		Navigate reports	PRE_TC-ILTS-17	Navigate Reports
19		Print vote tally data - official election detail report, select all contests, verify labeled official	POST_TC-15	Print Vote Tally Data
20		Navigate reports	PRE_TC-ILTS-17	Navigate Reports
21		View voter turnout report - Type: Unofficial, hide party breakdown	POST_TC-ILTS-12	Voter Turnout Report
22		Navigate reports	PRE_TC-ILTS-17	Navigate Reports
23		View voter turnout report - Type: Unofficial, show party breakdown	POST_TC-ILTS-12	Voter Turnout Report
24		Navigate reports	PRE_TC-ILTS-17	Navigate Reports
25		View voter turnout report - Type: Official, hide party breakdown	POST_TC-ILTS-12	Voter Turnout Report
26		Navigate reports	PRE_TC-ILTS-17	Navigate Reports
27		View voter turnout report - Type: Official, show party breakdown	POST_TC-ILTS-12	Voter Turnout Report
28		Navigate reports	PRE_TC-ILTS-17	Navigate Reports
29		View over/under report -Type: Unofficial, select absentee contests, verify labeled unofficial	POST_TC-ILTS-13	Over/Under Report
30		Navigate reports	PRE_TC-ILTS-17	Navigate Reports
31		View over/under report -Type: Unofficial, select all contests, verify	POST_TC-ILTS-13	Over/Under Report

		labeled unofficial		
TABULATOR REPORTS – RUN 8 *(continued)*				
ALL REPORTS & SELECT RUNS				
	System	**Functional Description**	**Test Case No.**	**Test Case Name**
32		Navigate reports	PRE_TC-ILTS-17	Navigate Reports
33		View over/under report -Type: Official, select absentee contests, verify labeled official	POST_TC-ILTS-13	Over/Under Report
34		Navigate reports	PRE_TC-ILTS-17	Navigate Reports
35		View over/under report -Type: Official, select all contests, verify labeled official	POST_TC-ILTS-13	Over/Under Report
36		Navigate reports	PRE_TC-ILTS-17	Navigate Reports
37		Print & verify precinct summary - Unofficial statement of vote, select absentee contests, verify labeled unofficial	POST_TC-17	Print & Verify Precinct Summary
38		Navigate reports	PRE_TC-ILTS-17	Navigate Reports
39		Print & verify precinct summary - Unofficial statement of vote, select all contests, verify labeled unofficial	POST_TC-17	Print & Verify Precinct Summary
40		Navigate reports	PRE_TC-ILTS-17	Navigate Reports
41		Print & verify precinct summary - Official statement of vote, select absentee contests, verify labeled official	POST_TC-17	Print & Verify Precinct Summary
42		Navigate reports	PRE_TC-ILTS-17	Navigate Reports
43		Print & verify precinct summary - Official statement of vote, select all contests, verify labeled official	POST_TC-17	Print & Verify Precinct Summary
44		Navigate reports	PRE_TC-ILTS-17	Navigate Reports
45		View supplemental statement of vote - Type: Unofficial, District Type: Normal contests, verify labeled unofficial	POST_TC-ILTS-14	Supllemental Statement of Vote
46		Navigate reports	PRE_TC-ILTS-17	Navigate Reports

TABULATOR REPORTS – RUN 8 *(continued)*				
ALL REPORTS & SELECT RUNS				
	System	**Functional Description**	**Test Case No.**	**Test Case Name**
47		View supplemental statement of vote - Type: Unofficial, District Type: Normal contests, verify labeled unofficial	POST_TC-ILTS-14	Supllemental Statement of Vote
48		Navigate reports	PRE_TC-ILTS-17	Navigate Reports
49		View supplemental statement of vote - Type: Official, District Type: Normal contests, verify labeled official	POST_TC-ILTS-14	Supllemental Statement of Vote
50		Navigate reports	PRE_TC-ILTS-17	Navigate Reports
51		View supplemental statement of vote - Type: Official, District Type: Normal contests, verify labeled official	POST_TC-ILTS-14	Supllemental Statement of Vote
52		Navigate reports	PRE_TC-ILTS-17	Navigate Reports
53		Select tabulator run - logic test	POST_TC-ILTS-09	Select Tabulator Run
54		Select tabulator run - normal	POST_TC-ILTS-09	Select Tabulator Run
55		Select tabulator run - recount	POST_TC-ILTS-09	Select Tabulator Run
56		Logout of EMS	PRE_TC-102	Logout of EMS
57		Logout of OS	PRE_TC-103	Logout of OS

TABULATOR - RUN 9				
EARLY VOTING TABULATION				
EARLY VOTING SESSION DATA MUST BE AVAILABLE INCLUDING TAPES & TM				
	System	**Functional Description**	**Test Case No.**	**Test Case Name**
1		Verify voting reports	POST_TC-01	Verify Voting Reports
2		OS access	PRE_TC-01	OS Access
3	Monitor	Login to EMS as superuser	PRE_TC-02	EMS Access
4		Open election	PRE_TC-44	DB Management Election DB Edit
5		Login to EMS using election CD	PRE_TC-ILTS-59	Login to EMS Using Election CD
6		Create new run - Name: Early Voting, Type: Normal, check Is Active, check Upload Vote Files	POST_TC-ILTS-02	Create Run in Tabulator
7		Consolidate data from media - TM	POST_TC-05	Consolidate Data From Media
8		Import election data	POST_TC-08	Import Election Data
9		Tally election data	POST_TC-14	Tally Election Data
10	Client	Logout of EMS	PRE_TC-102	Logout of EMS
11	Monitor	Logout of EMS	PRE_TC-102	Logout of EMS
12	Reports	Login to EMS	PRE_TC-02	EMS Access
13		Open election	PRE_TC-44	DB Management Election DB Edit
14		Select tabulator run - early voting	POST_TC-ILTS-09	Select Tabulator Run
15		Print vote tally data - unofficial election detail report, select all contests, verify early votes tallied	POST_TC-15	Print Vote Tally Data
16		Logout of EMS	PRE_TC-102	Logout of EMS
17		Logout of OS	PRE_TC-103	Logout of OS

TABULATOR - RUN 10				
ELECTION DAY TABULATION, RCV TALLY OPTIONS: GO TO NEXT VALID, PREVIOUS ROUND, DELETE ELECTION WITH LIVE DATA (FAILS)				
ELECTION DAY DATA WITH RCV WILL BE USED				
	System	**Functional Description**	**Test Case No.**	**Test Case Name**
1		Verify voting reports	POST_TC-01	Verify Voting Reports
2		OS access	PRE_TC-01	OS Access
3	Monitor	Login to EMS as superuser	PRE_TC-02	EMS Access
4		Open election	PRE_TC-44	DB Management Election DB Edit
5	Client	Login to EMS using election CD	PRE_TC-ILTS-59	Login to EMS Using Election CD
6		Create new run - Name: Election Day, Type: Normal, check Is Active, check Upload Vote Files	POST_TC-ILTS-02	Create Run in Tabulator
RCV vote patterns will be used that exercise the options listed for RCV tally, expected results must match				
7		Consolidate data from media - TM	POST_TC-05	Consolidate Data From Media
8		Import election data	POST_TC-08	Import Election Data
9		Tally election data	POST_TC-14	Tally Election Data
10		Tally election data (RCV tally) - Options: Invalid ranking = go to next valid ranking, Tie breaking = previous round	POST_TC-14	Tally Election Data
11		RCV tally report - verify expected results	POST_TC-ILTS-06	RCV Tally Report
12	Client	Logout of EMS	PRE_TC-102	Logout of EMS
13	Monitor	Close Election	PRE_TC-108	Close Election
14	Monitor	Delete Election Imported into Tabulator -- Delete Election with LIVE data -- should FAIL	POST_TC-ILTS-04	Delete Election Imported into Tabulator
15	Monitor	Logout of EMS	PRE_TC-102	Logout of EMS
16	Reports	Login to EMS	PRE_TC-02	EMS Access
17		Open election	PRE_TC-44	DB Management Election DB Edit
18		Select tabulator run - Election Day	POST_TC-ILTS-09	Select Tabulator Run
19		Print vote tally data - unofficial election detail report, select all contests, verify early votes tallied & RCV results	POST_TC-15	Print Vote Tally Data

TABULATOR - RUN 10 *(continued)*				
ELECTION DAY TABULATION, RCV TALLY OPTIONS: GO TO NEXT VALID, PREVIOUS ROUND, DELETE ELECTION WITH LIVE DATA (FAILS)				
ELECTION DAY DATA WITH RCV WILL BE USED				
	System	**Functional Description**	**Test Case No.**	**Test Case Name**
20		Logout of EMS	PRE_TC-102	Logout of EMS
21		Logout of OS	PRE_TC-103	Logout of OS

TABULATOR - RUN 11				
PROVISIONAL TABULATION INCLUDING OVCS, RCV TALLY OPTIONS: EXHAUSTING BALLOT, MULTIPLE DELETIONS				
AFTER ELECTION DAY, PROVISIONAL VOTE DATA INCLUDING RCV WILL BE USED				
	System	**Functional Description**	**Test Case No.**	**Test Case Name**
1		Verify voting reports	POST_TC-01	Verify Voting Reports
2		OS access	PRE_TC-01	OS Access
3	Monitor	Login to EMS as superuser	PRE_TC-02	EMS Access
4		Open election	PRE_TC-44	DB Management Election DB Edit
5	OVCS	Login to EMS using election CD using maintenance password	PRE_TC-ILTS-59	Login to EMS Using Election CD
6	OVCS	Create new PROVISIONAL session	POST_TC-ILTS-18	Create new Session
7	OVCS	Create zero balance report	POST_TC-ILTS-19	Create Zero Balance Report
8	OVCS	Save zero balance report	POST_TC-ILTS-20	Save Report
9	OVCS	Start bulk scan	POST_TC-ILTS-25	Bulk Scan
10	OVCS	Commit (batch)	POST_TC-ILTS-30	Consolidate Data from Central Scan
11	OVCS	Close session	POST_TC-14	Tally Election Data
12	OVCS	Logout of EMS	PRE_TC-102	Logout of EMS
13		Adjust Operating System Clock	PRE_TC-115	Adjust OS Clock
14	OVCS	Login to EMS using Election CD	PRE_TC-ILTS-59	Login to EMS Using Election CD
12	OVCS	Create session summary report	POST_TC-ILTS-22	Create Session Summary Report
13	OVCS	Save session summary report	POST_TC-ILTS-20	Save Report
14	OVCS	Select session to upload	POST_TC-ILTS-23	Select Session(s) to Upload
15	OVCS	Upload to tabulator	POST_TC-ILTS-24	Import Tallied Data from OVCS
16	OVCS	Logout of EMS	PRE_TC-102	Logout of EMS
17		Login to EMS using election CD	PRE_TC-ILTS-59	Login to EMS using election CD
18	Monitor	Create new run - Name: Provisional, Type: Normal, check Is Active, check Upload Vote Files	POST_TC-ILTS-02	Create Run in Tabulator
19		Consolidate data from media - TM	POST_TC-05	Consolidate Data from Media
20		Import election data	POST_TC-08	Import Election Data
21		Tally election data	POST_TC-14	Tally Election Data

TABULATOR - RUN 11 *(continued)*				
PROVISIONAL TABULATION INCLUDING OVCS, RCV TALLY OPTIONS: EXHAUSTING BALLOT, MULTIPLE DELETIONS				
AFTER ELECTION DAY, PROVISIONAL VOTE DATA INCLUDING RCV WILL BE USED				
	System	**Functional Description**	**Test Case No.**	**Test Case Name**
Appropriate RCV vote pattern to exercise options & expected results needed				
22		Tally election data (RCV tally) - Options: Invalid ranking = exhausted ballot, Tie breaking = multiple deletions	POST_TC-14	Tally Election Data
23		RCV tally report - verify expected results	POST_TC-ILTS-06	RCV Tally Report
24	Client	Logout of EMS	PRE_TC-102	Logout of EMS
25	Monitor	Logout of EMS	PRE_TC-102	Logout of EMS
26	Reports	Login to EMS	PRE_TC-02	EMS Access
27		Open election	PRE_TC-44	DB Management Election DB Edit
28		Select tabulator run - Provisional	POST_TC-ILTS-09	Select Tabulator Run
29		Print vote tally data - unofficial election detail report, select all contests, verify provisional votes tallied & RCV expected results	POST_TC-15	Print Vote Tally Data
30		Logout of EMS	PRE_TC-102	Logout of EMS
31		Logout of OS	PRE_TC-103	Logout of OS

TABULATOR - RUN 12				
RECOUNT TABULATION, RCV TALLY OPTIONS: EXHAUSTING BALLOT, MANUAL SELECTION				
AFTER ELECTION DAY, RECOUNT VOTE TALLY DATA & REQUIRED RCV VOTE PATTERNS & DATA ARE REQUIRED				
	System	**Functional Description**	**Test Case No.**	**Test Case Name**
1		Verify voting reports	POST_TC-01	Verify Voting Reports
2		OS access	PRE_TC-01	OS Access
3	Monitor	Login to EMS as superuser	PRE_TC-02	EMS Access
4		Open election	PRE_TC-44	DB Management Election DB Edit
5		Login to EMS using election CD	PRE_TC-ILTS-59	Login to EMS using election CD
6	Monitor	Create new run - Name: Recount, Type: Recount, check Is Active, check Upload Vote Files	POST_TC-ILTS-02	Create Run in Tabulator
7		Consolidate data from media - TM	POST_TC-05	Consolidate Data from Media
8		Import election data	POST_TC-08	Import Election Data
9		Tally election data	POST_TC-14	Tally Election Data
Appropriate vote patterns cast & expected results for RCV options needed				
10		Tally election data (RCV tally) - Options: Invalid ranking = exhausting ballot, Tie breaking = multiple deletions	POST_TC-14	Tally Election Data
11		RCV tally report - verify expected results	POST_TC-ILTS-06	RCV Tally Report
12	Client	Logout of EMS	PRE_TC-102	Logout of EMS
13	Monitor	Logout of EMS	PRE_TC-102	Logout of EMS
14	Reports	Login to EMS	PRE_TC-02	EMS Access
15		Open election	PRE_TC-44	DB Management Election DB Edit
16		Select tabulator run - Recount	POST_TC-ILTS-09	Select tabulator Run
17		Print vote tally data - unofficial election detail report, select all contests, verify recount tallied & RCV tally expected results	POST_TC-15	Print Vote Tally Data
18		Logout of EMS	PRE_TC-102	Logout of EMS
19		Logout of OS	PRE_TC-103	Logout of OS

TABULATOR - RUN 13				
PREFERENCES, RCV TALLY OPTIONS: SAVE, SAVE AS DEFAULT				
** TWO ELECTIONS MUST BE PRESENT IN TABULATOR MONITOR**				
	System	**Functional Description**	**Test Case No.**	**Test Case Name**
1		OS access	PRE_TC-01	OS Access
2	Monitor	Login to EMS as superuser	PRE_TC-02	EMS Access
3		Open election - with existing imported data	PRE_TC-44	DB Management Election DB Edit
4		Tally election data (RCV tally) - Select Options: Exhausting Ballot, Manual Selection - Save changes then Cancel	POST_TC-14	Tally Election Data
5		Tally election data (RCV tally) - verify that options saved are still selected - Select Options: Exhausting Ballot, Multiple Deletions	POST_TC-14	Tally Election Data
6		Save as defaults then cancel	PRE_TC-ILTS-40	Save as Defaults
7		Edit Preferences – Verify that Options from Step 5 are selected	PRE_TC-112	Edit Preferences
8		Tally Election Data (RCV Tally)	POST_TC-14	Tally Election Data
9		Save as defaults – Go to Next Valid & Manual Selection	PRE_TC-ILTS-40	Save as Defaults
10		Edit Preferences – Verify Go to Next Valid & Manual Selection are selected	PRE_TC-112	Edit Preferences
11		Close election	PRE_TC-108	Close Election
12		Import election using election CD	POST_TC-ILTS-01	Import election using election CD
13		Edit preferences - Document storage location: Read-only, Invalid Ranking = go to next valid ranking, Tie Breaking = previous round - Save	PRE_TC-112	Edit Preferences
14		Open previous election	PRE_TC-44	DB Management Election DB Edit

TABULATOR - RUN 13 *(continued)*				
PREFERENCES, RCV TALLY OPTIONS: SAVE, SAVE AS DEFAULT				
** TWO ELECTIONS MUST BE PRESENT IN TABULATOR MONITOR**				
	System	**Functional Description**	**Test Case No.**	**Test Case Name**
15		Tally election data (RCV tally) - verify that Invalid Ranking = go to next valid ranking, Tie Breaking = previous round are selected	POST_TC-14	Tally Election Data
16		Close election	PRE_TC-108	Close Election
17		Edit Preferences – Exhausting ballot & Multiple deletions - save	PRE_TC-112	Edit Preferences
18		Open previous election – Logic and Accuracy election	PRE_TC-44	DB Management Election DB Edit
19		Tally election data (RCV tally) - verify that options are not updated to defaults	POST_TC-14	Tally Election Data
20		Close election	PRE_TC-108	Close Election
21		Delete election imported into Tabulator – Logic and Accuracy Election	POST_TC-ILTS-04	Delete Election Imported into Tabulator
22		Import election into Tabulator	POST_TC-ILTS-01	Import Election Using Election CD
23		Open previous election	PRE_TC-44	DB Management Election DB Edit
24		Tally election data (RCV tally) – Verify preferences are set as Exhausting ballot and Multiple deletions	POST_TC-14	Tally Election Data
25		Logout of EMS	PRE_TC-102	Logout of EMS
26		Logout of OS	PRE_TC-103	Logout of OS

ELECTION MANAGER (POST VOTING) - RUN 14				
TM UPLOAD, AUDIT VOTING LOGS, REAL-TIME VOTING AUDITING, TM CLEANING				
	System	**Functional Description**	**Test Case No.**	**Test Case Name**
1		OS access	PRE_TC-01	OS Access
2	Monitor	Login to EMS as superuser	PRE_TC-02	EMS Access
3		TM upload (logs)	POST_TC-ILTS-15	TM Upload
4		View machine log - select correct machine & election	PRE_TC-ILTS-57	View Machine Log
5		Print & verify audit logs	POST_TC-02	Print and Verify Audit Logs
6		Audit voting real-time auditing	POST_TC-03	Audit Voting Real-Time Auditing
7		TM cleaning	POST_TC-ILTS-16	TM Cleaning
8		Logout of EMS	PRE_TC-102	Logout of EMS
9		Logout of OS	PRE_TC-103	Logout of OS

TABULATOR – RUN 15				
LOGIC TEST USING OVCS AND DIAGNOSTICS				
GEN-01				
	System	**Functional Description**	**Test Case No.**	**Test Case Name**
1		Login to OS	PRE_TC-01	OS Access
2	Monitor	Login to EMS as superuser	PRE_TC-02	EMS Access
3		Open election	PRE_TC-44	DB Management Election DB Edit
4	Monitor	Create new run - Name: LAT, Type: Logic Test, check Active Run, uncheck Upload Vote Files	POST_TC-ILTS-02	Create Run in Tabulator
5	OVCS	Login to EMS using election CD using maintenance password	PRE_TC-ILTS-59	Login to EMS Using Election CD
6	OVCS	Logout of the EMS	PRE_TC-102	Logout of EMS
7	OVCS	Login to EMS using election CD using supervisor password	PRE_TC-ILTS-59	Login to EMS Using Election CD
8	OVCS	Create new LAT session	POST_TC-ILTS-18	Create new Session
9	OVCS	Create zero balance report	POST_TC-ILTS-19	Create Zero Balance Report
10	OVCS	Navigate reports	PRE_TC-ILTS-17	Navigate Reports
11	OVCS	Start single scan	POST_TC-ILTS-21	Single Scan
12	OVCS	Commit (batch)	POST_TC-ILTS-30	Consolidate Data from Central Scan
13	OVCS	Start bulk scan	POST_TC-ILTS-25	Bulk Scan
14	OVCS	Commit (batch)	POST_TC-ILTS-30	Consolidate Data from Central Scan
15	OVCS	Close session	POST_TC-14	Tally Election Data
16	OVCS	Create session summary report	POST_TC-ILTS-22	Create Session Summary Report
17	OVCS	Navigate reports	PRE_TC-ILTS-17	Navigate Reports
18	OVCS	Create new LAT session	POST_TC-ILTS-18	Create new Session
19	OVCS	Start bulk scan	POST_TC-ILTS-25	Bulk Scan
20	OVCS	Commit (batch)	POST_TC-ILTS-30	Consolidate Data from Central Scan
21	OVCS	Close session	POST_TC-14	Tally Election Data
22	OVCS	Select session to upload	POST_TC-ILTS-23	Select Session(s) to Upload
23	OVCS	Upload to tabulator: first session	POST_TC-ILTS-24	Import Tallied Data from OVCS
24	OVCS	Select session to upload	POST_TC-ILTS-23	Select Session(s) to Upload
25	OVCS	Disable session: disable the 2nd session	POST_TC-ILTS-31	Disable Session

TABULATOR – RUN 15 *(continued)*				
LOGIC TEST USING OVCS AND DIAGNOSTICS				
GEN-01				
	System	**Functional Description**	**Test Case No.**	**Test Case Name**
26	OVCS	Comment on a Session	POST_TC-ILTS-29	Comment on a Session
26	OVCS	Diagnostics for reader: single scan mode	VOTE_TC-ILTS-09	Test Reader
27	OVCS	Diagnostics for reader: bulk scan mode	VOTE_TC-ILTS-09	Test Reader
28	OVCS	Logout of EMS	PRE_TC-102	Logout of EMS
29		Close election	PRE_TC-108	Close Election
30		Logout of EMS	PRE_TC-102	Logout of EMS
31		Logout of OS	PRE_TC-103	Logout of OS

OVCS – RUN 16				
WRITE-IN ONLY SCANNING USING OVCS				
USE SAME ELECTION AS RUN 15				
	System	**Functional Description**	**Test Case No.**	**Test Case Name**
1		Login to OS	PRE_TC-01	OS Access
2	Monitor	Login to EMS as superuser	PRE_TC-02	EMS Access
3		Open election	PRE_TC-44	DB Management Election DB Edit
4	Monitor	Create new run - Name: WRITE-IN ONLY, Type: Logic Test, check Active Run	POST_TC-ILTS-02	Create Run in Tabulator
5	OVCS	Login to EMS using election CD using maintenance password	PRE_TC-ILTS-59	Login to EMS Using Election CD
6	OVCS	Create new WRITE-IN ONLY session	POST_TC-ILTS-18	Create new Session
7	OVCS	Create zero balance report	POST_TC-ILTS-19	Create Zero Balance Report
8	OVCS	Save zero balance report	POST_TC-ILTS-20	Save Report
9	OVCS	Start single scan	POST_TC-ILTS-21	Single Scan
10	OVCS	Commit (batch)	POST_TC-ILTS-30	Consolidate Data from Central Scan
11	OVCS	Start bulk scan	POST_TC-ILTS-25	Bulk Scan
12	OVCS	Commit (batch)	POST_TC-ILTS-30	Consolidate Data from Central Scan
13	OVCS	Close session	POST_TC-14	Tally Election Data
14	OVCS	Create write-in report	POST_TC-ILTS-32	Create Write-In Report
15	OVCS	Navigate reports	PRE_TC-ILTS-17	Navigate Reports
16	OVCS	Select session to upload	POST_TC-ILTS-23	Select Session(s) to Upload
17	OVCS	Upload to tabulator	POST_TC-ILTS-24	Import Tallied Data from OVCS
18	OVCS	Logout of EMS	PRE_TC-102	Logout of EMS
19		Close election	PRE_TC-108	Close Election
20		Logout of EMS	PRE_TC-102	Logout of EMS
21		Logout of OS	PRE_TC-103	Logout of OS

OVCS – RUN 17				
TRAINING SESSION ON OVCS				
	System	**Functional Description**	**Test Case No.**	**Test Case Name**
1		Login to OS	PRE_TC-01	OS Access
2	Monitor	Login to EMS as superuser	PRE_TC-02	EMS Access
3	Monitor	Open election	PRE_TC-44	DB Management Election DB Edit
4	Monitor	Create new run - Name: Training Test Run, Type: Logic Test, check Active Run	POST_TC-ILTS-02	Create Run in Tabulator
5	OVCS	Login to EMS using election CD using maintenance password	PRE_TC-ILTS-59	Login to EMS Using Election CD
6	OVCS	Create new TRAINING session	POST_TC-ILTS-18	Create new Session
7	OVCS	Create zero balance report	POST_TC-ILTS-19	Create Zero Balance Report
8	OVCS	Save zero balance report	POST_TC-ILTS-20	Save Report
9	OVCS	Start single scan	POST_TC-ILTS-21	Single Scan
10	OVCS	Commit (batch)	POST_TC-ILTS-30	Consolidate Data from Central Scan
11	OVCS	Close session	POST_TC-14	Tally Election Data
12	OVCS	Create session summary report	POST_TC-ILTS-22	Create Session Summary Report
13	OVCS	Save zero balance report	POST_TC-ILTS-20	Save Report
14	OVCS	Select session to upload	POST_TC-ILTS-23	Select Session(s) to Upload
15	OVCS	Upload to tabulator – Invalid Session	POST_TC-ILTS-24	Import Tallied Data from OVCS
16	Monitor	Select tabulator run – Training	POST_TC-ILTS-09	Select Tabulator Run
17	Monitor	Set active run	POST_TC-ILTS-10	Set Active Run
18	OVCS	Upload to tabulator	POST_TC-ILTS-24	Import Tallied Data from OVCS
19	OVCS	Logout of EMS	PRE_TC-102	Logout of EMS
20	Monitor	Logout of EMS	PRE_TC-102	Logout of EMS
21		Logout of OS	PRE_TC-103	Logout of OS

ATTACHMENT B

2005 VVSG REQUIREMENTS CHECKLIST

VVSG Req. No.	2005 VVSG Volume I Functional Requirement Matrix	REQUIREMENT MET
Volume I	**Voting System Performance Guidelines**	
Section 2	**Functional Requirements**	
2.1	**Overall System Capabilities**	
2.1.4	**Integrity**	
f.	Protection against any attempt at improper data entry or retrieval.	**X**
g.	Records and reports the date and time of any normal or abnormal events.	**X**
h.	Maintenance of a permanent record of original audit data that cannot be modified or overridden but may be augmented by designated authorized officials in order to adjust for errors or omissions (e.g., during the canvassing process).	**X**
i.	Detect and record every event, including the occurrence of an error condition that the system cannot overcome, and time-dependent or programmed events that occur without the intervention of the voter or a polling place operator.	**X**
2.1.5.1a.	**Time, Sequence, and Preservation of Audit Records**	
i.	Create and maintain a real-time audit record.	**X**
ii.	System has a real-time clock, and maintains an absolute record of time and date, or record relative to some event whose time and data are known and recorded.	**X**
iii.	All audit record entries include the time-and-date stamp.	**X**
iv.	The audit record shall be active whenever the system is in an operating mode. Record shall be available at all times, though it need not be continually visible.	**X**
v.	The generation of audit record entries shall not be terminated or altered by program control, or by the intervention of any person.	**X**
vi.	System not affected by interruption of power.	**X**
vii.	Printable copy of the audit record. Separate printer is not required, and the record may be produced on the standard system printer if all the following conditions are met:	**X**
	Generation of audit trail records does not interfere with production of output reports	**X**
	Entries can be identified so as to facilitate their recognition, segregation, and retention	**X**
	Audit record entries are kept physically secure	**X**
2.1.5.1b.	**Error messages**	
i.	Generation, storage and reporting of all error messages as they occur to the user.	**X**
ii.	All error messages requiring intervention by an operator or precinct official are displayed or printed unambiguously in easily understood language text, or by means of other suitable visual indicators.	**X**
iii.	System use of numerical error codes for trained technician maintenance or repair containing the text corresponding to the code is self-contained, or affixed inside the unit device.	**X**
iv.	All error messages written clearly.	**X**

VVSG	2005 VVSG Volume I	REQUIREMENT MET
Req. No.	**Functional Requirement Matrix**	
Volume I	**Voting System Performance Guidelines**	
Section 2	**Functional Requirements**	
2.1	**Overall System Capabilities**	
2.1.5.1b.	**Error messages**	
v.	The message cue for all systems shall clearly state the action to be performed in the event that voter or operator response is required.	**X**
vi.	That an erroneous response would not lead to irreversible error.	**X**
vii.	Nested error conditions are corrected in a controlled sequence such that system status shall be restored to the initial state existing before the first error occurred.	**X**
2.1.5.1c.	**Status Messages**	
	The display and report of critical status messages use unambiguous indicators or English language.	**X**
	For the capability of status messages as part of the real-time audit record.	**X**
	For the capability for a jurisdiction to designate critical status messages.	**X**
2.1.6	**Election Management System**	
	An EMS shall generate and maintain a database, or one or more interactive databases, that enables election officials or their designees to perform the following functions:	
f.	Validation that ballots and programs have been properly prepared and installed.	**X**
g.	Accumulated vote totals at multiple reporting levels as indicated in the system documentation.	**X**
h.	Generation of post-voting reports per Section 2.4 [Post-voting Capabilities].	**X**
i.	Process and produce audit reports of the data indicated in Section 5.5 [sic] [5.4 Audit Record Data]	**X**
2.1.7	**Vote Tabulating Program** Each voting system shall have a vote tabulation program that will meet specific functional requirements.	
2.1.7.1	**Functions**	
	The vote tabulating program software resident in each voting machine, vote count server, or other devices shall include all software modules required to:	
a.	Monitor system status and generate machine-level audit reports.	**X**
b.	Accommodate device control functions performed by polling place officials and maintenance personnel.	**X**
c.	Register and accumulate votes.	**X**
d.	Accommodate variations in ballot counting logic.	**X**
2.1.10	**Data Retention**	
	All systems shall maintain integrity of voting and audit data during an election and for at least 22 months thereafter.	**X**
2.2.4	**Readiness Testing**	
e.	Provide capabilities for generating consolidated data reports at the polling place and higher jurisdictional levels.	**X**

VVSG	2005 VVSG Volume I	REQUIREMENT MET
Req. No.	**Functional Requirement Matrix**	
Volume I	**Voting System Performance Guidelines**	
Section 2	**Functional Requirements**	
2.2.4	**Readiness Testing**	
f.	Provide capabilities for segregating test data from actual voting data, either procedurally or by hardware/software features.	**X**
2.2.5	**Verification at Polling Place**	
	All systems provide a formal record of the following, in any media, upon verification of the authenticity of the command source:	
f.	A list of all ballot fields that can be used to invoke special voting options.	**X**
	For equipment that consolidates polling place data at one or more central counting places, there is verification for the correct extraction of voting data from transportable memory devices or transmission of secure data over secure communication links.	**X**
2.3	**Voting Capabilities**	
2.3.3.3	**DRE Systems Requirements**	
o.	DRE Systems shall ensure that the votes stored accurately represent the actual votes cast.	**X (OVI POV)**
2.4	**Post-Voting Capabilities**	
	All voting systems shall provide capabilities to accumulate and report results for the jurisdiction and to generate audit trails.	**X**
	Precinct count voting systems must provide a means to close the polls including generating appropriate reports.	**X**
2.4.1	**Closing the Polls**	
d.	For precinct count systems: Producing a diagnostic test record that verifies the sequence of events, and indicates that the extraction of voting data has been activated.	**X**
2.4.2	**Consolidating Vote Data**	
	All systems provide a means to consolidate vote data from all polling places, and optionally from other sources such as absentee ballots, provisional ballots, and voted ballots requiring human review (e.g., write-in votes).	**X**
2.4.3	**Producing Reports**	
	All systems shall be able to create reports summarizing the vote data on multiple levels.	
a.	All systems shall provide capabilities to support geographic reporting, which requires the reporting of all results for each contest at the precinct level and additional jurisdictional levels.	**X**
b.	All systems shall provide capabilities to produce a printed report of the number of ballots counted by each tabulator.	**X**
c.	All systems shall provide capabilities to produce a printed report for each tabulator of the results of each contest that includes the votes cast for each selection, the count of undervotes, and the count of overvotes.	**X**

VVSG Req. No.	2005 VVSG Volume I Functional Requirement Matrix	REQUIREMENT MET
Volume I	**Voting System Performance Guidelines**	
Section 2	**Functional Requirements**	
d.	All systems shall provide capabilities to produce a consolidated printed report of the results for each contest of all votes cast (including the count of ballots from other sources supported by the system as specified by the vendor) that includes the vote	**X**
e.	All systems shall be capable of producing a consolidated printed report of the combination of overvotes for any contest that is selected by an authorized official (e.g.; the number of overvotes in a given contest combining candidate A and candidate B, com	**X**
f.	All systems shall provide capabilities to produce all system audit information required in Subsection 5.4 [Audit Record Data] in the form of printed reports, or in electronic memory for printing centrally.	**X**
g.	All systems shall provide capabilities to prevent data from being altered or destroyed by report generation, or by the transmission of results over telecommunications lines.	**X**
i.	All precinct count voting systems shall provide a means to extract information from a transportable programmable memory device or data storage medium for vote consolidation.	**X**
j.	All precinct count systems shall consolidate the data contained in each unit into a single report for the polling place when more than one voting machine or precinct tabulator is used.	**X**
k.	All precinct count systems shall prevent data in transportable memory from being altered or destroyed by report generation, or by the transmission of results over telecommunications lines.	**X**
2.4.4	**Broadcasting Results**	
a.	Provide only aggregated results, and not data from individual ballots.	**X**
c.	Clearly indicate on each report or file that the results it contains are unofficial.	X
4.1.3	**Election Management System (EMS) Requirements**	
4.1.3.1	**Recording Requirements**	
	Voting systems shall accurately record all election management data entered by the user, including election officials or their designees.	
	For recording accuracy, all systems shall:	
	a. Record every entry made by the user	**X**
	e. Verify the correctness of detection of data entered directly by the user and the addition of the selections correctly to memory	**X**
	g. Log corrected data errors by the voting system	**X**
4.3.5	**Availability**	
a.	Paper based voting systems and supporting software respond to operational commands and accomplish the functions of:	
	a. Recording voter selections (such as by ballot marking); and	**X**
	i. Scanning the marks on paper ballots and converting them into digital data.	**X**

VVSG	2005 VVSG Volume I	REQUIREMENT MET
Req. No.	**Functional Requirement Matrix**	
Volume I	**Voting System Performance Guidelines**	
4.3.5	**Availability**	
c.	DRE and paper-based precinct count systems and supporting software respond to operational commands and accomplish the functions of consolidation of vote selection data from multiple precinct-based systems, generate jurisdiction-wide vote counts, store and	**X**
d.	DRE and paper-based central count systems and supporting software respond to operational commands and accomplish the functions of consolidation of vote selection data from multiple counting devices generate jurisdiction-wide vote counts, store and report	**X**
5.4.4	**Vote Tally Data**	
	Voting systems shall meet reporting requirements by providing software capable of obtaining data concerning various aspects of vote counting and producing reports of them on a printer. At a minimum:	
a.	Vote tally data shall include number of ballots cast, using each ballot configuration, by tabulator, by precinct, and by political subdivision;	**X**
b.	Vote tally data shall include candidate and measure vote totals for each contest, by tabulator;	**X**
c.	Vote tally data shall include the number of ballots read within each precinct and for additional jurisdictional levels, by configuration, including separate totals for each party in primary elections;	**X**
d.	Vote tally data shall include separate accumulation of overvotes and undervotes for each contest, by tabulator, precinct and for additional jurisdictional levels (no overvotes would be indicated for DRE voting devices); and	**X**
e.	Vote tally data shall include for paper-based systems only, the total number of ballots both processed and unprocessable; and if there are multiple card ballots, the total number of cards read.	**X**
	For systems that produce an electronic file containing vote tally data, the contents of the file shall include the same minimum data cited in a-e for printed vote tally reports.	**X**