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Test Plan for EAC 2005 VVSG Certification Testing Unisyn Voting Solutions OpenElect[®] 2.0.A Voting System

EAC Project Number: UNS1704

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U.S. Election Assistance Commission

VSTL

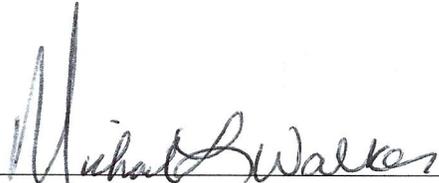
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SIGNATURES

Approved by:



Michael Walker, VSTL Project Manager

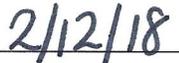


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Date

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TABLE OF CONTENTS

1.0	INTRODUCTION	1
1.1	Description and Overview of EAC Certified System Being Modified	1
1.1.1	Baseline Certified System	8
1.1.2	Description of Modification	10
1.1.3	Initial Assessment	12
1.1.4	Regression Test	12
1.2	References	12
1.3	Terms and Abbreviations.....	13
1.4	Project Schedule	14
1.5	Scope of Testing	14
1.5.1	Block Diagram.....	15
1.5.2	System Limits	16
1.5.3	Supported Languages.....	18
1.5.4	Supported Functionality.....	18
1.5.5	VVSG	19
1.5.6	RFIs.....	19
1.5.7	NOCs	19
2.0	PRE-CERTIFICATION TESTING AND ISSUES	19
2.1	Evaluation of Prior VSTL Testing.....	19
2.2	Evaluation of Prior Non-VSTL Testing.....	19
2.3	Known Field Issues.....	19
3.0	MATERIALS REQUIRED FOR TESTING	20
3.1	Software	20
3.2	Equipment	20
3.3	Test Materials	20
3.4	Deliverable Materials.....	21
3.5	Proprietary Data.....	21
4.0	TEST SPECIFICATIONS	21
4.1	Requirements (Strategy of Evaluation).....	21
4.1.1	Rational for ‘Not Applicable’ Requirements.....	22

4.2	Hardware Configuration and Design	23
4.3	Software System Functions.....	23
4.4	Test Case Design	23
4.4.1	Hardware Qualitative Design.....	24
4.4.2	Hardware Environmental Test Case Design	24
4.4.3	Software Module Test Case Design and Data	24
4.4.4	Software Functional Test Case Design and Data.....	24
4.4.5	System-Level Test Case Design	25
4.5	Security Functions	25
4.6	TDP Evaluation.....	25
4.7	Source Code Review.....	26
4.8	QA & CM System Review	27
4.9	PCA.....	27
4.10	FCA.....	27
4.11	Accuracy	27
4.12	System Integration	28
5.0	TEST DATA	28
5.1	Test Data Recording	28
5.2	Test Data Criteria.....	28
5.3	Test Data Reduction.....	29
6.0	TEST PROCEDURES AND CONDITIONS	29
6.1	Facility Requirements	29
6.2	Test Set-Up	29
6.3	Test Sequence	29
6.4	Test Operations Procedures	30
	PROJECT SCHEDULE.....	A-1

1.0 INTRODUCTION

The purpose of this Test Plan is to document the procedures that Pro V&V, Inc. will follow to perform certification testing during a system modification campaign for the Unisyn Voting Solutions OpenElect Voting System (OVS) Version 2.0.A to the requirements set forth for voting systems in the U.S. Election Assistance Commission (EAC) 2005 Voluntary Voting System Guidelines (VVSG), Version 1.0. Prior to submitting the voting system for testing, Unisyn submitted an application package to the EAC for certification of the OpenElect 2.0.A Voting System. The application was accepted by the EAC and the project was assigned the unique Project Number of UNS1704.

At test conclusion, the results of all testing performed as part of this test campaign will be submitted to the EAC in the form of a national certification test report.

1.1 Description and Overview of EAC Certified System Being Modified

The EAC Certified System that is the baseline for the submitted modification is described in the following subsections. All information presented was derived from the previous Certification Test Report, the EAC Certificate of Conformance and/or the System Overview.

The OVS 2.0 is a paper ballot voting system using touch screen and scan technology to scan and validate ballots, provide voter assisted ballots to accommodate voters with special needs, and tabulate results. The OCS, FVT, OVO, OVI-VC, and OVCS components of the OVS 2.0.A have previously been tested as part of the OVS 2.0 test campaign.

The OVS 2.0 consists of the following major components:

- **OpenElect Central Suite (OCS)**
- **OpenElect Voting Optical (OVO)**
- **OpenElect Voting Interface – Vote Center (OVI-VC)**
- **Freedom Vote Tablet (FVT)**
- **OpenElect Voting Central Scan (OVCS)**

The OVO, FVT, and OVI-VC are the OVS components designed to accept voter input. The FVT and OVI-VC are the OVS ballot marking devices (BMDs). The OVO can collect and tally precinct votes, generate reports, and store election data internally. The OVCS is the bulk scanner used for mail-in ballots, provisional ballots, and recounts.

Open Elect Central Suite (OCS)

The OCS System supports elections on the OVO, OVI-VC, FVT, and OVCS systems. The Election Management System (EMS) consists of the following components running as either a front-end/client application or as a back-end/server application:

Ballot Layout Manager (BLM) – uses a database to create and store precinct and district information and an interface to create, check, translate, and produce the ballot styles needed by a jurisdiction for an election. The BLM output is printer ready artwork of all ballots in all languages and the Unisyn election definition file.

Election Manager (EM) – converts the Unisyn election definition file to a Unisyn-specific XML format and prepares compressed, encrypted election files for output to CD or USB. The EM allows the jurisdiction to add voting device specific options for elections, i.e. whether to check the contests for undervotes, and whether to allow or disallow certain features such as sounds, party icons, reports, etc. The EM also creates and manages Supervisor and Maintenance technician logins and passwords.

Election Server (ES) – loads the correct system time on the voting devices and uses the Election Definition created by the EM to download new election data, via a closed and secure network, to OVS voting devices.

Tabulator Client (TC) – retrieves vote files and ballot images from Transport Media (TM) devices, stores them on its disk, and transfers the files to the Tabulator and notifies the Tabulator that a new file is present.

Tabulator (Tab) – receives and validates uploaded voting data and provides a status of uploaded files as well as handling Rank Choice Voting (RCV) functionality. It also updates the database with adjudicated ballots from the Auditor application. The Tabulator maintains the Tabulator database, which stores the results from all precincts.

Auditor – accesses ballot images and data from the OVCS and TC PCs to allow jurisdiction personnel to evaluate ballots with questionable or erroneous marks and change votes in accordance to the voter's perceived intent. The Auditor can also be used to process write-in votes. All changes uploaded to the Tabulator database and actions are password controlled.

Tabulator Reports (TR) – accesses data from the Tabulator database to generate the necessary reports

Additionally, the OCS includes the Software Server (SS) system for updating and validating the software on the OVO and the OVI-VC voting devices. The FVT's software is updated manually via a USB thumb drive.

OpenElect Voting Optical (OVO)

The OVO is a full-page dual-sided optical scan precinct scanner that scans and validates voter ballot pages and provides a summary of all ballot pages cast. The election is loaded from the OVS Election Server over a secure local network or from the TM. On Election Day, an OVO at each poll location scans and validates voters' ballots, and provides precinct tabulation and reporting. The OVO runs Logic Tests and Training Elections in addition to General and Primary Elections. A Software Server utility is provided to update the OVO with the current level of certificated software. The OVO unit can also be paired with OVI-VC and FVT units for early voting to scan and tabulate early voting ballots and election support at voting centers.

OVO units can be used at election headquarters to read absentee, provisional or recount ballots in smaller jurisdictions.

The OVO consists of the following components:

- **Personal Computer (PC)** - Computer component (with a touch panel display) has pre-installed server software (that manages data and communication) and client software that provides a user interface for voting and maintenance. A new election loaded via the Election Server or manually via a Transport Media (TM) sets passwords, parameters, and ballot styles for that election. (Valid ballots for a poll location are reinitialized or set on Election Day startup by scanning a ballot header card).
- **Transport Media (TM)** – 1 GB or larger USB thumb drive that provides the means of transporting audit, optional ballot page images and results files from the precinct on Election Night to Election Headquarters where the central count system resides.
- **Ballot Reader** - Dual-sided scanner connected to the PC to scan data from marked ballot pages. The Ballot Reader ejects accepted ballot pages into an attached ballot box or rejects unaccepted ballot pages back out to the voter.
- **Printer** - 58 mm thermal receipt printer connected to the PC to print voter receipts and reports at the OVO.
- **UPS** - Uninterruptible power supply is provided as part of the system.

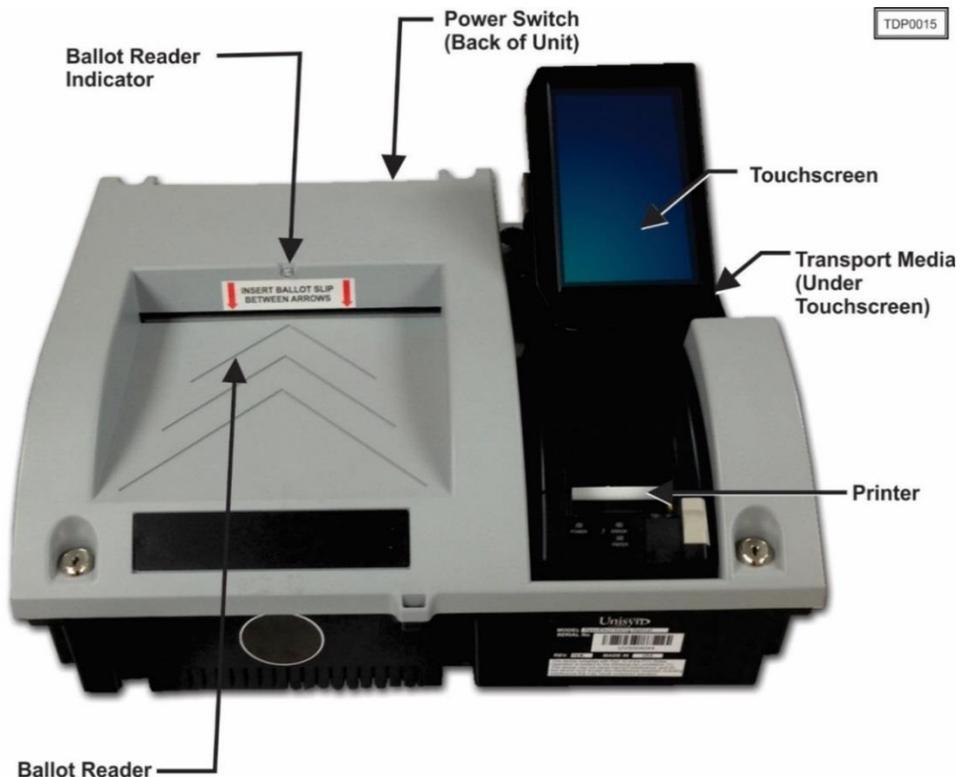


Figure 1-1. OVO

OpenElect Voting Interface – Vote Center (OVI-VC)

The OVI-VC is a ballot marking device (BMD) that supports both ADA and Regional Early Voting requirements. The OVI-VC has a 15-inch display and is equipped to assist voters, with varying abilities, to prepare their ballots independently and privately. It presents each contest on the correct ballot to the voter in visual and, if needed, audio formats. The OVI-VC gives voters the option to use an audio ballot, ADA keypad, sip and puff binary device, and touchscreen with varying font sizes to make their selections. Once the voter has made their selections, they are prompted to review their ballot selections. After the validation process is complete, the OVI-VC then prints the ballot and the voter inserts it into the OVO to cast their vote. When authorized, the OVI-VC provides for write-in candidates.

Each OVI-VC can support multiple languages for both visual and audio ballots, allowing the voter to choose their preferred language.

The OVI-VC consists of the following components:

- **Personal Computer (PC)** - Computer component (with a touch panel display) has pre-installed server software that manages data and communication and client software that provides user interfaces for voting and maintenance. A new election loaded via the Election Server or manually via a Transport Media (TM) sets passwords, parameters, audio, and ballot styles for that election.
- **Transport Media (TM)** - USB device with 1 GB or larger storage provides the means of transporting audit files to the OCS system.
- **Printer** – 82.5 mm thermal receipt printer is connected to the PC to print BMD Ballots and reports at the OVI-VC.
- **UPS** - Uninterruptible power supply is provided as part of the system.



Figure 1-2. OVI-VC

Freedom Vote Tablet (FVT)

The FVT is a tablet ballot marking device that enables voters make their vote selections and to print their voted ballot. It can be used on Election Day or during an early voting period. Like the OVI-VC, the FVT is ADA compliant. It assists voters, with varying levels of ability, through the voting process, ballot review, and printing functions. The FVT presents each contest on the ballot style to the voter in visual and/or audio formats. It facilitates special needs voters through a variety of methods including wheelchair access, sip and puff, zoom-in ballot function and audio assistance for the visually impaired. The voter with limited vision can navigate through the ballot using an audio ballot and the ADA keypad or touchscreen to input their selections. Once the ballot is printed, it is taken to the OVO to be cast. Each FVT can support multiple languages for both visual and audio ballots, allowing the voter to choose their preferred language.

The FVT consists of the following components:

- **Tablet** – The Android tablet has a 13.3 in. touchscreen and comes with pre-installed software that provides user interfaces for voting and maintenance. Election files generated by the EM are loaded manually via a USB. The election files will allow the jurisdiction to determine the FVT’s mode such as early voting or training, sets passwords, parameters, audio, and ballot styles for that election.

- **Barcode Reader** - 2D USB Barcode reader will read the 2D barcodes produced by the EM such as the initialize barcode and administrative/maintenance barcodes. It will also read the 'populate' barcode produced by other qualified systems.
- **USB Hub** – A four port USB hub is installed in the FVT case to connect the printer, barcode scanner, and keypad to the tablet.
- **Printer** – 82.5 mm thermal receipt printer is connected to the Tablet to print BMD ballots and reports.
- **Optional ADA Devices** – 10-key keypad with Sip and Puff Interface, Headphones, Sip and Puff Device.

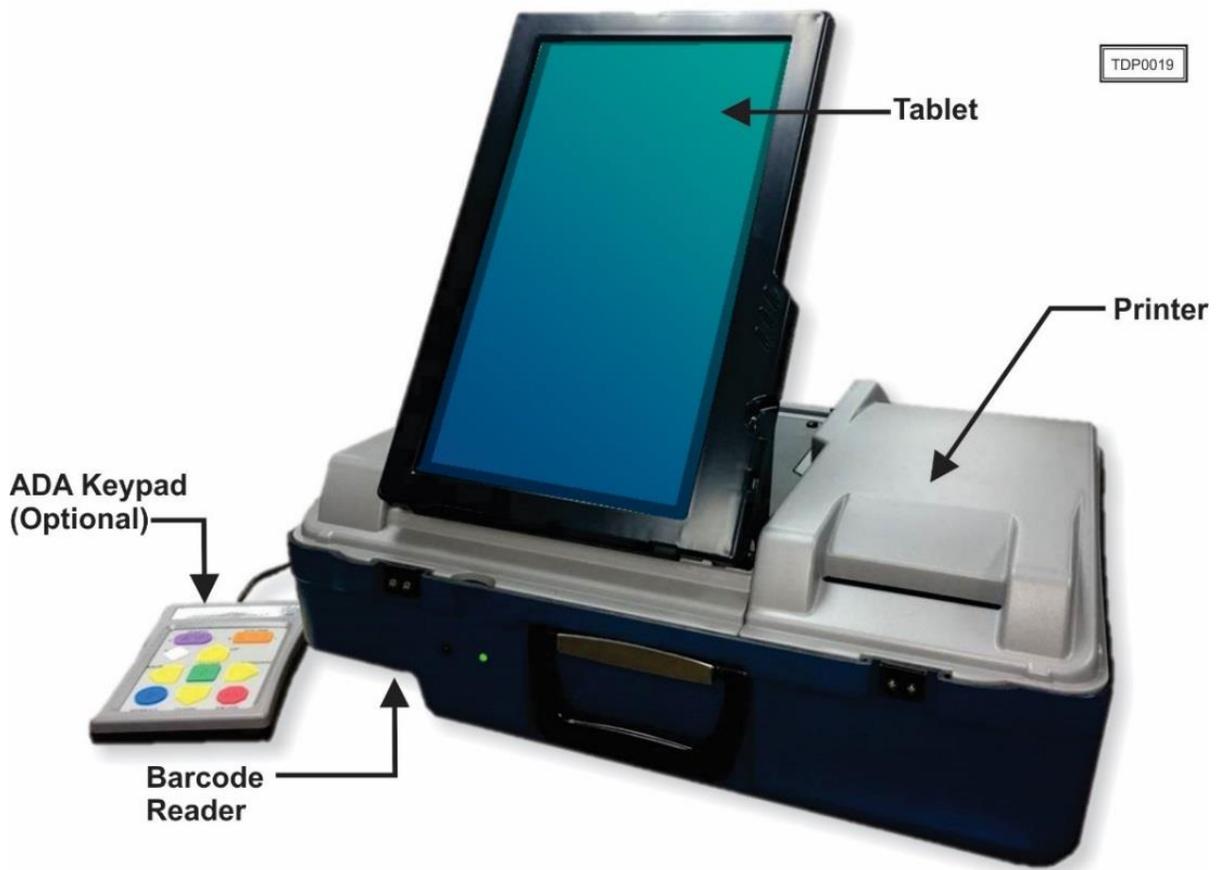


Figure 1-3. FVT

OpenElect Voting Central Scan (OVCS)

The OVCS units reside at election headquarters designated to read absentee, provisional or recount ballots in large jurisdictions or read the entire election's ballots at a central count location in smaller jurisdictions. The OVCS also captures Write-In data images and produces a Write-In image report for manual processing upon request. The OVCS system consists of the following components:

- **PC Desktop** – A desktop PC configuration with the following minimum characteristics:
 - PC: 1.8 GHz Processor, 2 GB RAM, 250GB (or larger) Hard Drive, USB Ports, Network Interface Port (Ethernet), CDRW/DVD, Video Port
 - 16:9 LCD
 - Keyboard and Mouse
- **Bulk Scanner** – A dual-sided scanner (either Canon model DR-M160II or model DR-X10C) that is connected to the PC to scan data from marked ballots.

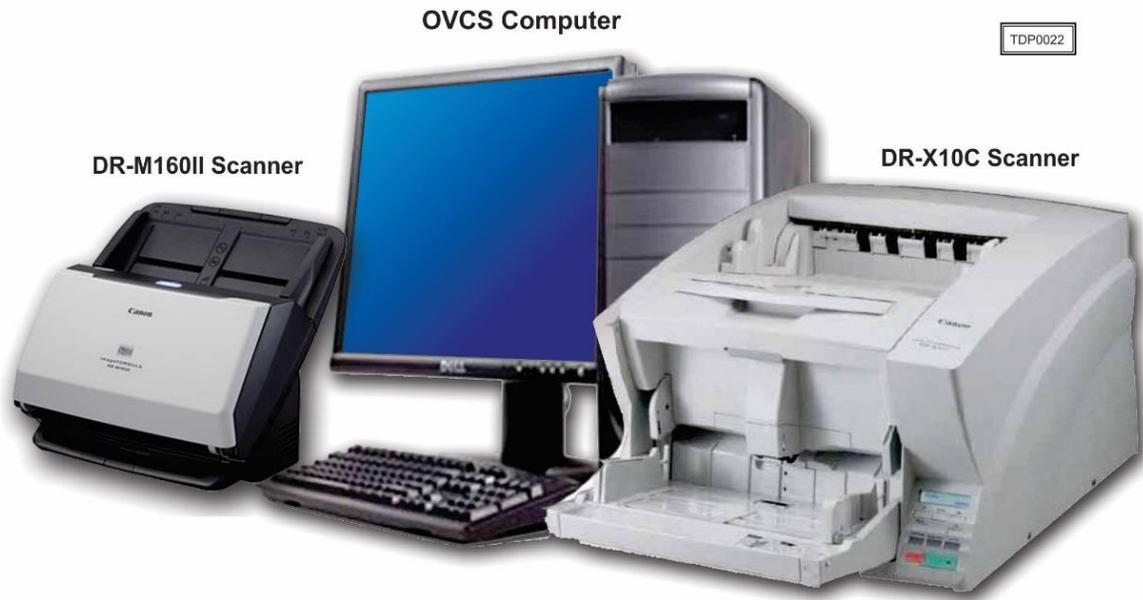


Figure 1-4. OVCS

1.1.1 Baseline Certified System

The baseline system for this modification is the OVS 2.0 Voting System. The tables below describe the certified equipment and firmware versions. Detailed descriptions of the OVS 2.0 test campaign are contained in Pro V&V Report No.TR-01-01-UNI-002-01.01 Rev. B, which is available for viewing on the EAC’s website at www.eac.gov.

This subsection lists the proprietary and COTS software to be provided by the manufacturer as part of the test campaign.

Table 1-1. OVS 2.0 COTS Software Components

FVT, OVO and OVI-VC Device Software	Version
CentOS Linux (OVO and OVI-VC)	6.3
Java JRE + Unlimited Cryptographic Extension	1.6.0_02
Android OS (FVT)	4.4.4

Table 1-2. OCS and OVCS COTS Software Components

OCS and OVCS Device Software	Version
CentOS Linux	6.5 and 6.8
Java JRE + Unlimited Cryptographic Extension	1.6.0_02
Apache-Tomcat Application Server	6.0.13
MySQL Database (BLM, EM, A, and Tab only)	5.0.45-7
JasperReports	2.0.5

Table 1-3. Voting System COTS Hardware

Hardware	Make	Model
OVO		
<i>Duplex Ballot Scanner</i>		
Duplex Ballot Scanner	PDI Scan	Pagescan III
Scanner Power Adapter	eUrasia Power	uA36-1024
<i>58 mm Thermal Printer</i>		
58 mm Thermal Printer	Citizen Printer	CT-5281
Printer Power Adapter	---	28AD4
<i>Computer</i>		
Chassis	Morex	---
Power Adapter	DC/DC converter	---
Motherboard	Jetway	JNF9D-2550
Memory	SuperTalent - Onboard RAM	3120-21282
Hard Drive	Western Digital	WD5000AZLX
Adapter	EDAC	EA 10951c-120

Table 1-3. Voting System COTS Hardware (continued)

Hardware	Make	Model
<i>1 Gb USB TM</i>		
Innodisk	1 Gb USB	---
Delkin	1 Gb USB	SLC-MLC
<i>7" LCD Touchscreen Display</i>		
7" LCD Touchscreen Display	Xenarc Technologies	700TSV
<i>AC Power In Module</i>		
AC Power In Module	Delta	Emi 10BEEG3G
OVI-VC		
<i>Sip and Puff (Optional)</i>		
Sip and Puff (Optional)	Origin Instruments	AirVoter
<i>Headphone (Optional)</i>		
Headphone (Optional)	Koss On-Ear Headphones	KPH5
<i>15 in LCD Touchscreen Display</i>		
15 in LCD Touchscreen Display	GVision	P15BX 2450-30120
<i>82.5 mm Thermal Printer</i>		
82.5 mm Thermal Printer	Star	TSP743IID-24, serial interface
Printer Adapter	Star	PS60A-24B 1
<i>Computer</i>		
Power Adapter Kit	DC-DC Converter	4000-00169
Motherboard	Jetway	JNF9D-2550
Memory	SuperTalent - Onboard RAM	3120-21282
Hard Drive	Western Digital	WD5000AZLX
Adapter	EDAC	EA 10951c-120
<i>1 Gb USB TM</i>		
Innodisk	1 Gb USB	---
Delkin	1 Gb USB	SLC-MLC
<i>AC Power In Module</i>		
---	Delta	Emi 10BEEG3G
OVCS		
<i>Large Volume Scanner</i>		
Large Volume Scanner	Cannon	DR-X10C
<i>Desktop Scanner</i>		
Desktop Scanner	Cannon	DR-M160II
FVT		
<i>13.3 in Touchscreen Tablet</i>		
13.3 in Touchscreen Tablet	Android Tablet	GVision - T13
Tablets Battery Charger	Sager Power System	GC30B-4P1J
<i>82.5 mm Thermal Printer</i>		
82.5 mm Thermal Printer	Star	TSP743IIU-24
Printer Adapter	Lind 60W 24VDC	ST2425-626
<i>Barcode Reader 1D,2D series</i>		
Barcode Reader 1D,2D series	Newland	FM420

Table 1-3. Voting System COTS Hardware (continued)

Hardware	Make	Model
<i>USB Hub</i>		
USB Hub	Tripp Lite	USB Hub
Hub Adapter	Meanwell	PSD-15A-05
<i>1 Gb USB TM</i>		
Innodisk	1 Gb USB	---
Delkin	1 Gb USB	SLC-MLC
<i>Micro SD</i>		
Micro SD	Innodisk Industrial	Micro SD 2.0
<i>Battery</i>		
Battery Pack 12 V 6.0 AH	Powers Sonic	PSH-1255-FR
Adapter	Mean Well	GC30B-4PIL
<i>AC Power In Module</i>		
AC Power In Module	Delta	Emi 10BEEG3G
<i>Sip and Puff (Optional)</i>		
Sip and Puff	Origin Instruments	AirVoter
<i>Headphone (Optional)</i>		
Headphone	Koss On-Ear Headphones	KPH5
Headphone	Sony	MDR-210LP
<i>USB to Ethernet RJ45 Adapter (Optional)</i>		
USB to Ethernet RJ45 Adapter	D-Link	---
UPS		
Minuteman Power Technologies	Para Systems, Inc.	Entrust

Table 1-4. OVCS System COTS Software Components

OVS Hardware	Version
Desktop for non-redundant solutions	Dell OptiPlex
Desktop for redundant solutions	Dell Precision
Canon Scanner (OVCS)	Canon DR-X10C or DR-M160II
Laptop	Dell Latitude

1.1.2 Description of Modification

The OVS 2.0.A Voting System is a modified voting system configuration that introduces OpenVPN to the certified OVS 2.0 system configuration. OpenVPN was included to provide FIPS 140-2 compliant cryptographic protection to OCS telecommunications. OVS 2.0.A also includes additional modifications/enhancements. The list below includes changes between this system and the baseline of the OVS 2.0 Voting System:

Ballot Layout Manager (BLM)

- Add Sequential Page Numbers to All Multipage Reports
- Support for MP3 sound files on FVT

- Tennessee: uniquely identifiable stub on FVT print. (On cancel or timeout, print cancel stub)
- Add export/import function for Translations text

Election Manager (EM)

- Add Sequential Page Numbers to All Multipage Reports
- PA rule toggle only valid for "override" straight ticket rule
- Support for MP3 sound files on FVT

Tabulator

- Add Sequential Page Numbers to All Multipage Reports

Tabulator Reports (TR)

- Add Sequential Page Numbers to All Multipage Reports

Validator

- Allow OVO and OVI-VC application software to be loaded from the USB
- Add System Verifier function from Validator (output validation signatures to file if signed profile exists on USB)

OpenElect Central Suite (OCS)

- Add OpenVPN (FIPS Cert) to secure all OCS network traffic

Freedom Vote Tablet (FVT)

- Support for MP3 sound files on FVT
- Stub: A uniquely identifiable stub can be printed for each voting session. (On cancel or timeout, print cancel stub)
- Add log export, machine info report to the Customer Acceptance menu
- Show on Barcode Reader Test scanned data in easy to read format
- Allow reprint of the Open Report
- Add FVT application version to Diagnostics > Auto Test printout
- Display low battery warning message
- Add voter confirm screen after the last ballot page

Linux

- VPN files are installed as part of the OCSInstaller
- Remove ES and SS files from the system and icons from the desktop as part of the VPN install using the OCSInstaller
- Add new Dell 5590 laptop (requires EOS installer update)

1.1.3 Initial Assessment

Testing from the previous test campaign was used to establish the baseline. The focus of this test campaign would be on the introduction of OpenVPN as the validated cryptographic module to secure OCS telecommunications FIPS 140-2 validated modules and the modifications/enhancements implemented since the previous test campaign. It was determined the following tasks would be required to verify compliance of the modifications:

- Source Code Review, Compliance Build, Trusted Build, and Build Document Review
- System Integration Testing
- Limited Technical Documentation Package (TDP) Review
- Limited Functional Configuration Audit (FCA)
- Regression Testing
- Usability and Maintainability Testing
- Security Testing

1.1.4 Regression Test

Regression testing for this test campaign will consist of the execution of the System Integration Testing.

1.2 References

- Election Assistance Commission 2005 Voluntary Voting System Guidelines (VVSG) Version 1.0, Volume I, “Voting System Performance Guidelines”, and Volume II, “National Certification Testing Guidelines”
- Election Assistance Commission Testing and Certification Program Manual, Version 2.0
- Election Assistance Commission Voting System Test Laboratory Program Manual, Version 2.0
- National Voluntary Laboratory Accreditation Program NIST Handbook 150, 2016 Edition, “NVLAP Procedures and General Requirements (NIST HB 150-2016)”, dated July 2016
- 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
- Pro V&V, Inc. Quality Assurance Manual, Revision 7.0

- Election Assistance Commission “Approval of Voting System Testing Application Package” letter dated January 25, 2017
- EAC Requests for Interpretation (RFI) (listed on www.eac.gov)
- EAC Notices of Clarification (NOC) (listed on www.eac.gov)
- Pro V&V Test Report No. TR-01-01-UNI-002-01.01 Rev. B, “Test Report for EAC 2005 VVSG Certification Testing Unisyn Voting Solutions OpenElect 2.0 Voting System”
- Unisyn Voting Solutions Technical Data Package (*A listing of the OpenElect 2.0.A documents submitted for this test campaign is listed in Section 4.6 of this Test Plan*)

1.3 Terms and Abbreviations

This subsection lists terms and abbreviations relevant to the hardware, the software, or this Test Plan.

“ADA” – Americans with Disabilities Act 1990

“BLM” – Ballot Layout Manager

“BMD” – Ballot Marking Device

“CM” – Configuration Management

“COTS” – Commercial Off-The-Shelf

“DRE” – Direct Record Electronic

“EAC” – United States Election Assistance Commission

“EM” – Election Manager

“EMS” – Election Management System

“ES” – Election Server

“FCA” – Functional Configuration Audit

“FVT” – Freedom Vote Tablet

“LAT” – Logic and Accuracy Test

“NOC” – Notice of Clarification

“OCS” – OpenElect Central Suite

“OVCS” – OpenElect Voting Central Scan

“OVI-VC” – OpenElect Voting Interface – Vote Center

“OVO” – OpenElect Voting Optical
“OVS” – OpenElect Voting System
“PC” – Personal Computer
“PCA” – Physical Configuration Audit
“QA” – Quality Assurance
“RFI” – Request for Interpretation
“TC” – Tabulator Client
“TDP” – Technical Data Package
“TM” – Transport Media (USB Thumb Drive)
“TR” – Tabulator Reports
“UPS” – Uninterruptible Power Supply
“VSTL” – Voting System Test Laboratory
“VVSG” – Voluntary Voting System Guidelines

1.4 Project Schedule

The Project Schedule for the test campaign is located in Appendix A. The dates on the schedule are not firm dates but planned estimates based on the anticipated project work flow.

1.5 Scope of Testing

The scope of testing is limited to the introduction of OpenVPN as the validated cryptographic module to secure OCS telecommunications FIPS 140-2 validated modules and the modifications/enhancements implemented since the certification of the baseline system.

1.5.1 Block Diagram

Pre-Voting - Election Center/Central Count

TDP1001

OCS

Ballot Layout Manager (BLM)

- Defines Election
- Produces Ballots

Election USB TM

Loads the Election directly on Voting Devices

Election Manager (EM)

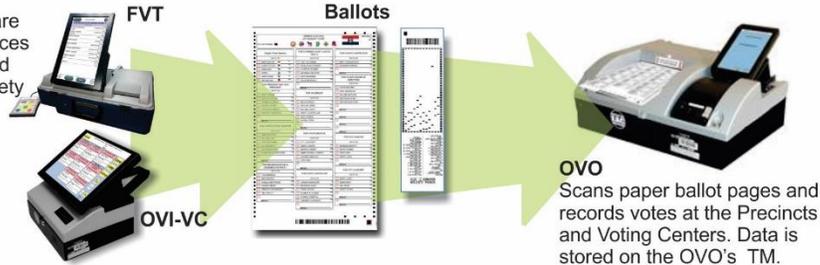
- Sets Election Options
- Creates Election Files



Voting - Poll Locations

OVI-VC and FVT are ballot marking devices that produce printed ballots using a variety of Input Devices:

- Touchscreen
- Keypad
- Sip and Puff



Post-Voting - Election Center/Central Count

OVO

Transport Media (TM) is removed from the OVO after voting has stopped and returned to Central Count.

OVCS

- Bulk scanner used for:
- Mail In-Ballots
 - Provisional Ballots
 - Recounts.

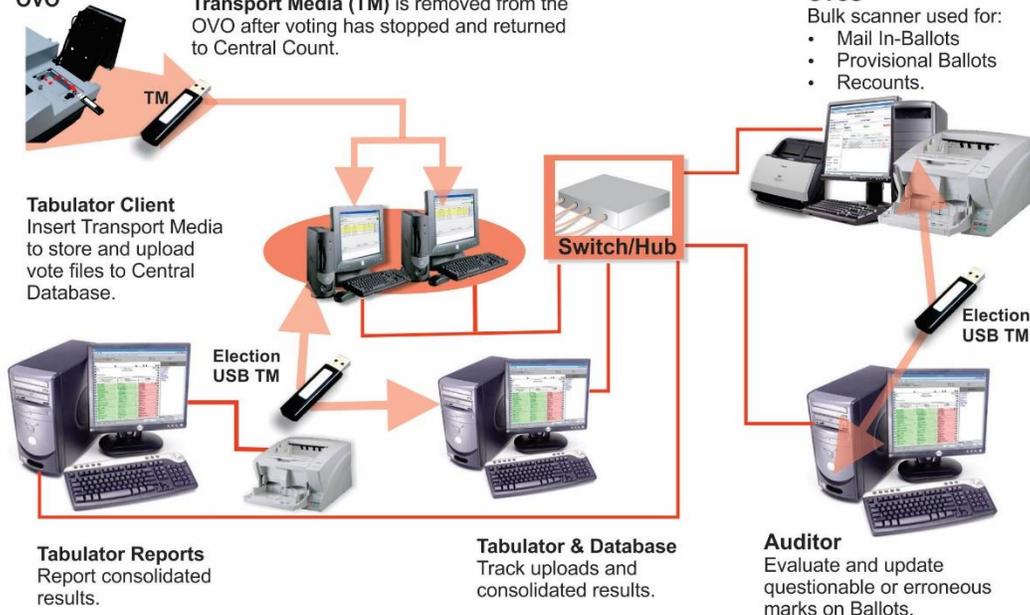


Figure 1-5. OVS 2.0.A System Components Overview

1.5.2 System Limits

Unisyn has defined the following system performance characteristic limits for the OVS 2.0.A:

- The OCS and OVCS Software are intended for use by a single jurisdiction with one set of districts, voting centers, and precincts at any given time.
- The OCS and OVCS designed for handling up to 20 consecutive elections.
- Ten elections may be stored in the OCS database simultaneously.
- The system allows 400 ballot styles for an election.
- One OVO can be initialized for use with ballots from 1-50 precincts, or all precincts.
- An OVI-VC and FVT can present all precincts to the voter.
- The system allows voting by precinct and split precinct.
- The OVO provides several voting sessions to accommodate different ballot counting purposes. Only one session can be used at a time:
 - **Election Day** voting at the polls and voting centers
 - **Training Election** voting for training or sales purposes
 - **Logic Test** voting to test data and tabulation
 - **Absentee** session
 - **Recount** session
 - **Provisional** session
 - **Regional Early Voting** session
- The OVO provides the following System Performance:
 - Expected speed (per ballot page) 5 seconds to ballot page confirm
 - Throughput capacity (per ballot page) 6 ballot pages per minute
 - Maximum Volume 5,000 ballot pages
 - Ballot Pages
 - 11” ballot page:
 - Maximum number of voting positions per ballot page (11 inch ballot pages, without Rank Choice Voting): 228
 - Maximum number of voting positions per ballot page (11 inch ballot pages, with Rank Choice Voting): 456
 - 14” ballot page:
 - Maximum number of voting positions per ballot page (14 inch ballot pages, without Rank Choice Voting): 300

- Maximum number of voting positions per ballot page (14 inch ballot pages, with Rank Choice Voting): 600
 - 17” ballot page:
 - Maximum number of voting positions per ballot page (17 inch ballot pages, without Rank Choice Voting): 372
 - Maximum number of voting positions per ballot page (17 inch ballot pages, with Rank Choice Voting): 744
 - 19” ballot page:
 - Maximum number of voting positions per ballot page (19 inch ballot pages, without Rank Choice Voting): 420
 - Maximum number of voting positions per ballot page (19 inch ballot pages, with Rank Choice Voting): 840
- Maximum number of ballot styles: 50 ballot styles per OVO session if individually entered with a maximum of 400 ballot style choices. For All Precinct sessions, all ballot styles are accepted by the OVO.
- The OVCS provides several voting sessions to accommodate different ballot counting purposes. Only one session can be used at a time:
 - Normal - Election Day Tabulation
 - Election Day Tabulation
 - Recount
 - Training
 - LAT - Logic and Accuracy Test (LAT) voting to test data and tabulation
 - Absentee session
 - Provisional session
 - Write-In only session
- The OVCS provides the following System Performance:
 - Max Ballot pages per batch 500
 - Max Ballot pages per session 5,000
 - Expected speed (ballot pages per hour) 500 ballot pages per hour
 - Maximum number of ballot styles: 400 ballot style choices

In the end-to-end OVS, a single election is limited to:

- Up to 12 political parties (including non-partisan) voting their own ballot in a Primary Election. Up to 12 political parties (including non-partisan) voting in a General Straight Ticket Election. Twenty-four parties may appear on the ballot for candidates.
- Up to 2,000 precincts.

- Up to 120 candidates per contest, with a limit of 3,000 combined count of candidates and contests.
- Up to 8 language translations (applies to ballot pages).
- Up to 3 ballot pages per ballot.
- Up to 5,000 ballot pages processed (cast votes) at an OVO during a single voting session.

1.5.3 Supported Languages

The submitted voting system supports:

- Hindi
- Chinese
- English
- Japanese
- Korean
- Navajo
- Spanish
- Thai

Support for all stated languages will be verified; however, only English and Spanish language ballots will be cast during the performance of functional testing. Additionally, one character based language (Chinese) will be tested during System Integration Testing.

1.5.4 Supported Functionality

The OVS 2.0.A is designed to support the following voting variations:

- General Election
- Closed Primary
- Open Primary
- Early Voting
- Partisan/Non-Partisan Offices
- Write-In Voting
- Primary Presidential Delegation Nominations
- Straight Ticket Voting (*including Pennsylvania and Indiana Rules*)
- Presidential-only Voting
- Split Precincts

- Multiple Selection Contests: Vote for N of M
- Ballot Rotation
- Cross Party Endorsement
- Multi-Page Ballots
- Multi-Party Candidate Endorsements
- Provisional or Challenged Ballots
- Absentee Ballots
- Recount Tabulation
- Ranked Choice Voting (RCV)

1.5.5 VVSG

The OVS 2.0.A shall be evaluated against the relevant requirements contained in the EAC 2005 VVSG, Volumes I and II.

1.5.6 RFIs

There are no RFIs released by the EAC as of the date of this Test Plan that pertain to this test campaign that were not in effect at the time of the baseline system certification.

1.5.7 NOCs

There are no NOCs released by the EAC as of the date of this Test Plan that pertain to this test campaign that were not in effect at the time of the baseline system certification.

2.0 PRE-CERTIFICATION TESTING AND ISSUES

This section describes previous testing performed prior to submitting the voting system to the EAC.

2.1 Evaluation of Prior VSTL Testing

Pro V&V evaluated to the published Final Test Report for the OVS 2.0.A System in order to baseline the current system under test.

2.2 Evaluation of Prior Non-VSTL Testing

No prior non-VSTL testing of the OVS 2.0.A modifications were considered for this test campaign.

2.3 Known Field Issues

There are no known field issues with the baseline system OVS 2.0. OVS 2.0.A is a modification to the previously certified OVS 2.0 system and has not been fielded.

3.0 MATERIALS REQUIRED FOR TESTING

The following sections list all materials needed to enable the test engagement to occur.

The materials required for testing of the OVS 2.0.A System include all materials to enable the test campaign to occur. This includes the applicable hardware and software as well as the TDP, test support materials, and deliverable materials, as described in the following subsections.

3.1 Software

This subsection lists the proprietary and COTS software to be provided by the manufacturer as part of the test campaign.

All software required for testing is identified in Section 1.1 of this test plan.

To verify that no source code was changed to implement the updated FIPS modules/libraries, which are called upon in the build process and included in the compile, Pro V&V will perform a comparison on the submitted source code.

3.2 Equipment

This subsection lists the proprietary and COTS equipment to be provided by the manufacturer as part of the test campaign.

For COTS equipment, every effort will be made to verify that the COTS equipment has not been modified for use. This will be accomplished by performing research using the COTS equipment manufacturer's websites based on the serial numbers and service tag numbers for each piece of equipment. Assigned test personnel will evaluate COTS hardware, system software and communications components for proven performance in commercial applications other than voting. For PCs, laptops, and servers, the service tag information will be compared to the system information found on each machine. Physical external and internal examination will also be performed when the equipment is easily accessible without the possibility of damage. Hard drives, RAM memory, and other components will be examined to verify that the components match the information found on the COTS equipment manufacturer's websites.

All hardware required for testing is identified in Section 1.1 of this test plan.

3.3 Test Materials

This subsection lists the test materials required to execute the required tests throughout the test campaign.

The materials required for certification testing of the OVS 2.0.A include all previously identified software, hardware and test materials, as well as the deliverable materials listed below.

3.4 Deliverable Materials

This subsection lists the materials identified by the manufacturer as materials deliverable to the end user for the system being tested.

Table 3-5. Voting System Deliverables

Material	Version	Description
OCS	2.0.A	EMS Software Suite
OVO	2.0.A	Precinct Ballot Scanner
OVI	2.0.A	Accessible Voting Station
OVCS	2.0.A	Central Count Scanner
FVT	2.0.A	Ballot Marking Device
Ballot Box	---	OVO Ballot Receptacle
Transport Media	1 GB	USB Flash Drive
Minuteman UPS	Entrust	UPS
Headphones (optional)	Koss, Sony	Stereo headphones
Sip and Puff (optional)	Origin AirVoter	Binary Input Device
OVS 2.0.A TDP*	2.0.A	OVS Technical Data Package

* Listed in Section 4.6

3.5 Proprietary Data

All data and documentation considered by the manufacturer to be proprietary will be identified and documented in an independent submission along with a Notice of Protected Information.

4.0 TEST SPECIFICATIONS

Certification testing of the OVS 2.0.A System submitted for evaluation will be performed to ensure the applicable requirements of the EAC 2005 VVSG and the EAC Testing and Certification Program Manual, Version 2.0, are met. Additionally, all EAC Request for Interpretations (RFI) and Notices of Clarification (NOC) relevant to the system under test will be incorporated in the test campaign. A complete listing of the EAC RFIs and NOCs is available on the EAC website.

4.1 Requirements (Strategy of Evaluation)

To evaluate the OVS 2.0.A test requirements, the submitted modifications were evaluated against each section of the EAC 2005 VVSG to determine the applicable tests to be performed. Based on this assessment, it was determined the following evaluations would be required to verify compliance of the modifications:

Limited Technical Documentation Package (TDP) Review

A limited TDP Review will be performed to ensure that all submitted modifications are accurately documented and that the documents meet the requirements of the EAC 2005 VVSG.

Source Code Review, Compliance Build, Trusted Build, and Build Document Review

The source code review will be based on the source code changes made since the previous system was certified. In addition, the source code submitted will be reviewed for implementations of the FIPS certified cryptographic module.

Physical Configuration Audit (PCA)

A PCA will be performed to compare the voting system submitted for certification testing to the manufacturer's technical documentation. The purpose of the PCA will be to verify that the submitted hardware is unmodified from the previously certified voting system

Limited Functional Configuration Audit (FCA)

The FCA for this test campaign will include an assessment of the submitted modifications and will include inputs of both normal and abnormal data during test performance. This evaluation will utilize baseline test cases as well as specifically designed test cases and will include predefined election definitions for the input data. As part of the FCA, one primary and one general election will be executed to verify that each of the submitted modifications have been successfully implemented.

System Integration Test

The system integration tests will be performed to ensure the OVS 2.0.A functions as a complete system. The system integration testing addresses the integration of the hardware and software. This testing focuses on the compatibility of the voting system software components and subsystems with one another and with other components of the voting system. During test performance, the system is configured as would be for normal field use.

Usability and Accessibility Test

The OVS 2.0.A will be subjected to Usability and Accessibility tests to ensure that all requirements are satisfied.

Accuracy Test

An Accuracy Test will be performed to ensure the OVS 2.0.A correctly captures, stores, consolidates, and reports the specific ballot selections, and absence of selections, for each ballot position.

4.1.1 Rationale for 'Not Applicable' Requirements

The OVS 2.0.A is a paper-based system that supports a closed network. Therefore, all EAC 2005 VVSG requirements, with the exceptions listed below, will be evaluated as part of this test campaign.

- Volume I, Section 7.7 (Wireless Communications)
- Volume I, Section 7.9 (Voter Verifiable Paper Audit Trail Requirements)

The rationale for not evaluating the OVS 2.0.A to the indicated sections is described in following table.

Table 4-1. Not Applicable Requirements

EAC 2005 VVSG Version 1 Volume I, Section	Rationale for ‘Not Applicable’
7.7	No wireless technology is present in the Unisyn OVS 2.0.A.
7.9	The Unisyn OVS 2.0.A is a paper-based system

4.2 Hardware Configuration and Design

The Unisyn OVS 2.0.A is a paper-based optical scan voting system. The OVS 2.0.A consists of the following major components: the OCS, OVO precinct scanner, OVI-VC precinct voting interface, OVCS central count scanner, and FVT precinct voting tablet. All components of the OVO, excluding the case, are COTS. All components of the OVI-VC, excluding the case and keypad, are COTS. All components of the FVT, excluding the case, tablet enclosure, and keypad, are COTS. All components of the OVCS are COTS. All OCS functions are handled by proprietary software running on COTS PS/laptop/servers.

4.3 Software System Functions

The OCS/OVO/OVI-VC/OVCS software is a set of Java applications that utilize open source libraries and run on a customized Linux operating system to take advantage of that platform’s security and performance. The OVO and OVCS use the Java Native Interface (JNI) classes, which are C++ classes, to communicate with the native drivers (also C++) provided by the hardware manufacturer. This is required by the Optical Scanner in the OVO and the OVCS. The OpenElect system is designed for use in two distinct locales: Central Processing and In-Precinct Systems.

The FreedomVote Tablet (FVT) product is also written in Java, but compiled for use on the Google Android operating system, using different core libraries.

4.4 Test Case Design

Test cases are designed based on the manufacturer’s design specifications and the relevant technical requirements set forth by the VVSG. Test cases shall be based on the following aspects of the voting system:

- Hardware qualitative examination design
- Hardware environmental test case design
- Software module test case design and data
- Software functional test case design
- System level test case design

Test cases shall provide information regarding the sequence of actions to be performed for the execution of a test, the requirements being met, the test objective, test configuration, equipment needed, special requirements, assumptions, and pass/fail criteria. Once the test cases are finalized, they will be validated and published for use in the test campaign. The validation of the test case will be accomplished by technical review and approval. This validation will include the following: confirmation of adequate test coverage of all requirements; confirmation that test case results are not ambiguous and gave objective pass/fail criteria; and confirmation that any automated test suites will produce valid results.

4.4.1 Hardware Qualitative Design

Previous hardware examinations were performed on the certified baseline system (OVS 2.0). The updates to the modified system (OVS 2.0.A) require no additional hardware testing to be performed.

4.4.2 Hardware Environmental Test Case Design

Previous hardware examinations were performed on the certified baseline system (OVS 2.0). The updates to the modified system (OVS 2.0.A) require no additional hardware testing to be performed.

4.4.3 Software Module Test Case Design

Pro V&V shall review the manufacturer's program analysis, documentation, and module test case design and shall evaluate the test cases for each module with respect to flow control parameters and entry/exit data. As needed, Pro V&V shall design additional test cases to satisfy the coverage criteria specified in Volume II, Section 7.2.1.

Component Level Testing will be implemented during the FCA for each component and subcomponent. During the source code review, compliance builds, and security testing, Pro V&V will utilize limited structural-based techniques (white-box testing).

Additionally, specification-based techniques (black-box testing) will be utilized for the individual software components.

Pro V&V shall define the expected result for each test and the ACCEPT/REJECT criteria for certification. If the system performs as expected, the results will be accepted. If the system does not perform as expected, an analysis will be performed to determine the cause. The test will be repeated in an attempt to reproduce the results. If the failure can be reproduced and the expected results are not met, the system will have failed the test. If the results cannot be reproduced, the test will continue. All errors encountered will be documented and tracked through resolution.

4.4.4 Software Functional Test Case Design

Pro V&V shall review the manufacturer-submitted test plans and data to verify that the individual performance requirements specified in the EAC 2005 VVSG and the TDP are reflected in the software. As part of this process, Pro V&V shall review the manufacturer's test case design and prepare a detailed matrix of system functions and the test cases that exercise them. Pro V&V shall

also prepare a test procedure describing all test ballots, operator procedures, and the data content of output reports. Pro V&V shall define abnormal input data and operator actions and then design test cases to verify that the system is able to handle and recover from these abnormal conditions. During this review, emphasis shall be placed on those functions where the manufacturer data on module development, such as the system release notes and comments within the source code, reflects significant debugging problems, and on functional tests that resulted in high error rates.

Pro V&V shall define the expected result for each test and the ACCEPT/REJECT criteria for certification. If the system performs as expected, the results will be accepted. If the system does not perform as expected, an analysis will be performed to determine the cause. The test will be repeated in an attempt to reproduce the results. If the failure can be reproduced and the expected results are not met, the system will have failed the test. If the results cannot be reproduced, the test will continue. All errors encountered will be documented and tracked through resolution.

4.4.5 System-Level Test Case Design

System Level testing will be implemented to evaluate the complete system. This testing will include all proprietary components and COTS components (software, hardware, and peripherals) in a configuration of the system's intended use. For software system tests, the tests shall be designed according to the stated design objective without consideration of its functional specification. The system level hardware and software test cases shall be prepared independently to assess the response of the hardware and software to a range of conditions.

4.5 Security Functions

The system security functions for the modification remain unchanged from the previously certified system with the exception of the inclusion of OpenVPN to secure OCS telecommunications. Review will be performed on the implementation of OpenVPN to verify its compliance to EAC RFI 2012-05 and in order to:

- Confirm the module implemented is present on the NIST CMVP validated products list.
- Confirm the module is configured and used per the published security policy.

No other security testing will be performed.

4.6 TDP Evaluation

In order to determine compliance of the modified TDP documents with the EAC 2005 VVSG, a limited TDP review shall be conducted. This review will focus on TDP documents that have been modified since the certification of the baseline system. The review will consist of a compliance review to determine if each regulatory, state, or manufacturer-stated requirement has been met based on the context of each requirement. Results of the review of each document will be entered on the TDP Review Checklist and reported to the manufacturer for disposition of any anomalies. This process will be ongoing until all anomalies are resolved. Any revised documents during the TDP review process will be compared with the previous document revision to determine changes

made, and the document will be re-reviewed to determine whether subject requirements have been met.

A listing of all documents contained in OVS 2.0.A TDP is provided in Table 4-2.

Table 4-2. TDP Documents

Document Number	Description	Version	Release
04-00512	Technical Data Package-Document List and Version Control	1.0	2.0.A
04-00446	OVS System Overview	1.0	2.0.A
04-00444	System Functionality Description	1.0	2.0.A
04-00458	System Hardware Specification	1.0	2.0.A
04-00464	Software Design and Specification	1.0	2.0.A
04-00447	System Security Specification	1.0	2.0.A
04-00453	System Test and Verification Plan	1.0	2.0.A
04-00460	Systems Operations Procedure: Warehouse Technician's Guide	1.0	2.0.A
04-00459	System Maintenance Procedures	1.0	2.0.A
04-00445	Personnel Training and Deployment Requirements	1.0	2.0.A
04-00448	Configuration Management Plan	1.0	2.0.A
04-00454	Quality Assurance Plan	1.0	2.0.A
04-00427	Election Manager User Guide	1.0	2.0.A
04-00428	Ballot Layout Manager User Guide	1.0	2.0.A
04-00431	Tabulator Client User Guide	1.0	2.0.A
04-00432	Tabulator User Guide	1.0	2.0.A
04-00433	Tabulator Reports User Guide	1.0	2.0.A
04-00495	OVCS User Guide	1.0	2.0.A
04-00530	Auditor Users Guide	1.0	2.0.A
04-00549	EOS Linux and OCS Installation Guide	1.0	2.0.A
04-00449	System Coding Standards	1.0	2.0.A
04-00462	Election Day Troubleshooter's Guide	1.0	2.0.A
04-00463	Election Day Poll Worker's Guide	1.0	2.0.A
04-00494	OVS Acronyms	1.0	2.0.A
04-00503	OVS Paper Specification	1.0	2.0.A

4.7 Source Code Review

Pro V&V will review the submitted source code to the EAC 2005 VVSG and the manufacturer-submitted coding standards. Prior to initiating the software review, Pro V&V shall verify that the submitted documentation is sufficient to enable: (1) a review of the source code and (2) Pro V&V to design and conduct tests at every level of the software structure to verify that design specifications and performance guidelines are met.

4.8 QA and CM System Review

The Unisyn Quality and Configuration Management Manuals shall be reviewed for their fulfillment of Volume I, Sections 8 and 9, and the requirements specified in Volume II, Section 2. The requirements for these sections establish the quality assurance and configuration standards for voting systems to which manufacturers must conform and require voting system manufacturers to implement a quality assurance and configuration management program that is conformant with recognized ISO standards. As part of the review process, the Unisyn TDP documents will be reviewed to determine if the stated policies are being followed.

4.9 PCA

The physical configuration audit compares the voting system components submitted for qualification to the manufacturer's technical documentation, and shall include the following activities:

- Establish a configuration baseline of software and hardware to be tested; confirm whether manufacturer's documentation is sufficient for the user to install, validate, operate, and maintain the voting system
- Verify software conforms to the manufacturer's specifications; inspect all records of manufacturer's release control system; if changes have been made to the baseline version, verify manufacturer's engineering and test data are for the software version submitted for certification
- If the hardware is non-COTS, Pro V&V shall review drawings, specifications, technical data, and test data associated with system hardware to establish system hardware baseline associated with software baseline
- Review manufacturer's documents of user acceptance test procedures and data against system's functional specifications; resolve any discrepancy or inadequacy in manufacturer's plan or data prior to beginning system integration functional and performance tests
- Subsequent changes to baseline software configuration made during testing, as well as system hardware changes that may produce a change in software operation are subject to re-examination

4.10 FCA

The functional configuration audit encompasses an examination of manufacturer's tests, and the conduct of additional tests, to verify that the system hardware and software perform all the functions described in the manufacturer's documentation submitted in the TDP.

In addition to functioning according to the manufacturer's documentation tests will be conducted to insure all applicable EAC 2005 VVSG requirements are met.

4.11 Accuracy

The accuracy test ensures that each component of the voting system can each process 1,549,703 consecutive ballot positions correctly within the allowable target error rate. The Accuracy test is

designed to test the ability of the system to “capture, record, store, consolidate and report” specific selections and absences of a selection. The required accuracy is defined as an error rate. This rate is the maximum number of errors allowed while processing a specified volume of data. For paper-based voting systems the ballot positions on a paper ballot must be scanned to detect selections for individual candidates and contests and the conversion of those selections detected on the paper ballot converted into digital data.

In an effort to achieve this and to verify the proper functionality of the units under test, the following methods will be used to test components of the voting system:

The OVO and OVCS shall be tested by utilizing a combination of hand marked (70%) and pre-marked (30%) ballots to achieve accuracy rate greater than 1,549,703 correct ballot positions. The OVI-VC and FVT shall be utilized to create ballots that will be implemented as part of the pre-marked test deck.

4.12 System Integration

System Level test for the integrated operation of both hardware and software. Compatibility of the voting system software components or subsystems with one another, and with other components of the voting system environment, shall be determined through functional tests integrating the voting system software with the remainder of the system.

Additionally, the system shall be configured exactly as it would for normal field use. This includes connecting all supporting equipment and peripherals including ballot boxes, voting booths (regular and accessible), and any physical security equipment such as locks and ties.

Pro V&V personnel shall properly configure and test the system by following the procedures detailed in the OVS 2.0.A voting system technical documentation.

5.0 TEST DATA

The following subsections provide information concerning test data recording, criteria, and reduction.

5.1 Test Data Recording

All equipment utilized for test data recording shall be identified in the test data package. The output test data shall be recorded in an appropriate manner as to allow for data analysis. For source code and TDP reviews, results shall be compiled in reports and submitted to Unisyn for resolution.

5.2 Test Data Criteria

The OVS 2.0.A shall be evaluated against all applicable requirements contained in the EAC 2005 VVSG. The acceptable range for system performance and the expected results for each test case shall be derived from the manufacturer-submitted technical documentation and the EAC 2005 VVSG.

5.3 Test Data Reduction

Test data shall be processed and recorded in the test log book and the relevant Test Cases.

6.0 TEST PROCEDURE AND CONDITIONS

The following subsections detail the facility requirements, test setup conditions, and sequence of testing.

6.1 Facility Requirements

Unless otherwise annotated, all testing shall be conducted at the Pro V&V test facility located in Huntsville, AL, by personnel verified by Pro V&V to be qualified to perform the test.

Unless otherwise specified herein, testing shall be performed at the following standard ambient conditions and tolerances:

- Temperature: 68-75° F ($\pm 3.6^\circ\text{F}$)
- Relative Humidity: Local Site Humidity
- Atmospheric Pressure: Local Site Pressure
- Time Allowable Tolerance: $\pm 5\%$

Testing performed at third-party laboratories will be subject to the test parameters and tolerances defined by VVSG. If not specified in VVSG, the test facilities' standard parameters and tolerances will be used. These shall be reported in the final Test Report.

6.2 Test Set-up

All voting system equipment shall be received and documented using Pro V&V proper QA procedures. Upon receipt of all hardware, an inspection will be performed to verify that the equipment received is free from obvious signs of damage and/or degradation that may have occurred during transit. If present, this damage shall be recorded, photographed, and reported to the Unisyn Representative. Additionally, a comparison shall be made between the recorded serial numbers/part numbers and those listed on shipper's manifest and any discrepancies shall be reported to the Unisyn Representative. TDP items and all source code received shall be inventoried and maintained by Pro V&V during the test campaign.

During test performance, the system shall be configured as it would be for normal field use. This includes connecting all supporting equipment and peripherals.

6.3 Test Sequence

The OVS 2.0.A will be evaluated against all applicable requirements in the EAC 2005 VVSG. There is no required sequence for test performance.

6.4 Test Operations Procedure

Pro V&V will identify PASS/FAIL criteria for each executed test case. The PASS/FAIL criteria will be based on the specific expected results of the system. In the case of an unexpected result that deviates from what is considered standard, normal, or expected, a root cause analysis will be performed.

Pro V&V will evaluate every EAC 2005 VVSG requirement applicable to the OVS 2.0 voting system. Any deficiencies noted will be reported to the EAC and the manufacturer. If it is determined that there is insufficient data to determine compliance, this test plan will be altered and additional testing will be performed.

APPENDIX A
PROJECT SCHEDULE

Task Name	Start Date	End Date	% Complete	Duration	Predecessors	Status
TDP	01/26/18	03/07/18	0%	29d		In Progress
Initial Review	01/26/18	01/29/18	0%	2d		In Progress
Compliance Review	01/30/18	03/05/18	0%	25d	3	Not Started
Final review	03/06/18	03/07/18	0%	2d	4	Not Started
Test Plan	01/29/18	03/29/18	0%	44d		In Progress
Test Plan Creation	01/29/18	02/07/18	0%	8d		In Progress
Vendor Review & Comments	02/08/18	02/08/18	0%	1d	7	In Progress
EAC Submission and Review	02/09/18	03/08/18	0%	20d	8	Not Started
VSTL Comment Review & Update	03/09/18	03/13/18	0%	3d	9	Not Started
EAC Submission & Review of Revision	03/14/18	03/27/18	0%	10d	10	Not Started
EAC Approved Test Plan	03/28/18	03/29/18	0%	2d	11	Not Started
Source Code	01/26/18	02/01/18	0%	5d		Not Started
Automated Review	01/26/18	01/29/18	0%	2d		Not Started
Source Code Review	01/30/18	01/30/18	0%	1d	14	Not Started
Source Code Re-Review	01/31/18	01/31/18	0%	1d	15	Not Started
Document Review	01/26/18	01/26/18	0%	1d		Not Started
Compliance Build	02/01/18	02/01/18	0%	1d	16	Not Started
System Delivery & Setup	02/12/18	02/15/18	0%	4d		Not Started
PCA	02/12/18	02/12/18	0%	0		Not Started
System Setup	02/12/18	02/13/18	0%	2d	20	Not Started
System Loads & Hardening	02/14/18	02/15/18	0%	2d	21	Not Started
Hardware Testing	02/16/18	02/19/18	0%	2d		Not Started
Maintainability	02/16/18	02/16/18	0%	1d	22	Not Started
Acoustic Testing	02/19/18	02/19/18	0%	1d	24	Not Started

Task Name	Start Date	End Date	% Complete	Duration	Predecessors	Status
System Level Testing	02/20/18	03/22/18	0%	23d		Not Started
FCA	02/20/18	02/26/18	0%	5d	25	Not Started
Security	02/27/18	03/05/18	0%	5d	27	Not Started
Usability	03/06/18	03/06/18	0%	1d	28	Not Started
Accessibility	03/07/18	03/07/18	0%	1d	29	Not Started
Accuracy	03/08/18	03/12/18	0%	3d	30	Not Started
Regression Testing	03/13/18	03/13/18	0%	1d	31	Not Started
Trusted Build	03/14/18	03/15/18	0%	2d	32	Not Started
System Loads & Hardening	03/16/18	03/19/18	0%	2d	33	Not Started
System Integration	03/20/18	03/22/18	0%	3d	34	Not Started
Test Report	03/14/18	05/16/18	0%	46d		Not Started
Test Report Creation	03/14/18	03/27/18	0%	10d	32	Not Started
Vendor Review & Comments	03/28/18	03/28/18	0%	1d	37	Not Started
EAC Submission & Review	03/30/18	04/26/18	0%	20d	12	Not Started
VSTL Comment Review & Update	04/27/18	05/01/18	0%	3d	39	Not Started
EAC Submission & Review of Revision	05/02/18	05/15/18	0%	10d	40	Not Started
EAC Approved Test Report	05/16/18	05/16/18	0%	1d	41	Not Started