Commonwealth of Pennsylvania
Department of State

Test Plan
PUV-307-ETP-01

Prepared for:

Vendor Name	*Unisyn Voting Solutions Inc.*
Vendor System	*OpenElect Voting System (OVS) 1.3.0.2A*

Prepared by:

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Date Finalized: December 1, 2017

Revision History

Release	Author	Date	Revision Summary
v1.0	M. Santos	Dec. 1, 2017	Initial Release
V1.1	M. Santos	Dec. 1, 2017	Updates for PA comments

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- The tests referenced in this document will be performed in a controlled environment using specific systems and data sets and results are related to the specific items tested. Actual results in other environments may vary.

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1   INTRODUCTION

This Test Plan outlines the test approach SLI Compliance (SLI) will follow when performing Certification Testing on the **Unisyn OVS 1.3.0.2.A** voting system against the the requirements of Article XI-A of the Pennsylvania Election Code, sections 1101-A to 1122-A, 25 P.S. §§ 3031.1 – 3031.22.   The purpose of this document is to provide a clear understanding of the work SLI will conduct and a detailed plan outlining the test effort.

When the examination is complete, SLI will submit a Test Report that details test results and findings from the Certification Test effort, as well as a recommendation to the State.

An examination will be performed to confirm that the **Unisyn OVS 1.3.0.2.A** voting system meets the requirements of Article XI-A of the Pennsylvania Election Code, sections 1101-A to 1122-A, 25 P.S. §§ 3031.1 – 3031.22. This examination will be performed, per the direction of the Secretary of the Commonwealth, acting through the Pennsylvania Department of State, Bureau of Commissions, Elections and Legislation. This test plan documents the procedures to be followed.

This examination is a follow-on to the **Unisyn OVS 1.3.0.2** examination conducted on August 14th, 2017, in Room 114A, Keystone Building, 400 North Street, Harrisburg, Pennsylvania. This current examination is in response to an issue found in OVS 1.3.0.2, related to the Pennsylvania Straight Party Method implementation. When a contest had a party with less than the maximum number of selectable candidates (i.e. 2 Republican candidates in a "Vote for no more than THREE" contest), if that party was selected in the straight party contest, then the voter selected a third choice in that contest, the two Republican choices remained selected, instead of being automatically de-selected.

Unisyn incorporated a fix for this issue, and re-submitted the system to both the State of Pennsylvania for State approval, as well as the Election Assistance Commission for federal approval.

The Unisyn OVS 1.3.0.2.A examination will commence on December 14th, 2017, in Lab 5, 4720 Independence Street, Wheat Ridge Colorado, and is scheduled to be observed in Room 114A, Keystone Building, 400 North Street, Harrisburg, Pennsylvania

1.1   References

The following references for this test plan include:

- Article XI-A of the Pennsylvania Election Code, sections 1101-A to 1122-A, 25 P.S. §§ 3031.1 - 3031.22

- Test Report of EAC 2005 VVSG Certification Testing Performed on Unisyn Voting Solutions OVS 1.3

- Test Report for EAC 2005 VVSG Certification Testing Unisyn Voting Solutions OpenElect 1.3.0.2.A Voting System

2 SYSTEM OVERVIEW

Scope of the Unisyn OVS 1.3.0.2.A Voting System

The **Unisyn OVS 1.3.0.2.A** voting system is a paper based voting system comprised of both precinct and central count tabulators and a Ballot Marking Device as an ADA component.

For each device being evaluated, a trusted build of the software/firmware will be obtained from the Voting System Test Lab (VSTL) and installed by the Examiner prior to the evaluation, using the appropriate media for installation.

2.1 OpenElect Central Suite(OCS)

The OCS System supports elections on the OVO, OVI-VC and OVCS systems. It includes Ballot Layout Manager, Election Manager, Election Server, Tabulator Client, Tabulator Server, Adjudicator, and Tabulator Reports. In addition, the OCS includes the Software Server (SS) system for updating and validating the OVO and the OVI-VC software.

2.2 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 OVO consists of the following components:

- **Personal Computer (PC)** – The 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 vote files from the precinct on Election Night to Election Headquarters where the central count system resides.

Picture of OpenElect Voting Optical (OVO)

2.3 OpenElect Voting Interface (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 consists of the following components:

- Personal Computer (PC) – The 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) – A USB device with 1 GB or larger storage that provides the means of transporting audit files to the OCS system.
- Printer – 82.5 mm thermal receipt printer that is connected to the PC to print OVI Ballots and reports at the OVI.
- UPS - Uninterruptible power supply, provided as part of the system.

Picture of OpenElect Voting Interface (OVI-VC)

2.4 OpenElect Voting Central Scan (OVCS)

The OVCS units that reside at election headquarters are designed to read absentee, provisional or recount ballots. 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

- o 16:9 LCD
- o Keyboard and Mouse
- Canon DR-X10C Scanner: a COTS scanner used to provide ballot scanning and image transfers to the local OVCS Workstation.

Picture of OpenElect Voting Central Scan (OVCS)

2.5 Software and Firmware

Below is a listing of the software and firmware components that comprise the entire **Unisyn OVS 1.3.0.2.A** system categorized by system functionality:

Unisyn OpenElect 1302 Components

Commonwealth of Pennsylvania State Certification of Unisyn OVS 1.3.0.2.A EAC Certified: 3/28/2017 Standard: 2005 VVSG 1.0		
	Firmware/Software	**Version**
Election Management System (EMS)	Ballot Layout Manager (BLM)	1.3.0
	Election Manager (EM)	1.3.0.2
	Software Server (SS)	1.3.0
	Election Server (ES)	1.3.0
	Tabulator Client (TC)	1.3.0
	Tabulator (Tab)	1.3.0
	Tabulator Reports (TR)	1.3.0
	Adjudicator	1.3.0
	Scriptor	1.3.0.2

	Validator	1.3.0.2
	Common (Library)	1.3.0
	OCS Installer	1.3.0
	Regkey Builder	1.3.0
	Logger (Library)	1.3.0
Unisyn Tabulators	OpenElect Voting Optical (OVO), Rev A&E	1.3.0
	OpenElect Voting Central Scan (OVCS)	1.3.0
Voter Assist Terminal	OpenElect Voting Interface (OVI-VC), Rev. A&B firmware	1.3.0.2.A

Additional COTS Software and Firmware include:

OCS and OVCS COTS Software Components

Software	Version	Filename
Java SE Development Kit	Development Kit 6 Update 2 for Linux j	jdk-6u2-linux-i586.bin
Java SE Runtime Environment	Runtime Environment 6 Update 2	jre-6u2-linux-i586.bin
Java Cryptography Extension	Jurisdiction Policy Files 6	jce_policy-6.zip
Apache Tomcat	6.0.13	apache-tomcat- 6.0.13.tar.gz
PDI Scanner Driver and Libraries for OVCS	2.1.4	PS3_Canon_libraries_2014Jan06A.zip

COTS Operating System Software Components

Software	Version	Filename
Linux CentOS Distribution for OVS 1.3 (used for the OVO/OVI with old motherboard)	5.0	CentOS-5.0-i386-bin-1of6.iso CentOS-5.0-i386-bin-2of6.iso CentOS-5.0-i386-bin-3of6.iso CentOS-5.0-i386-bin-4of6.iso CentOS-5.0-i386-bin-5of6.iso CentOS-5.0-i386-bin-6of6.iso
Linux CentOS Distribution (used for the OCS and OVCS)	5.7	CentOS-5.2-i386-bin-DVD.iso
Linux CentOS Distribution (used for the OVO/OVI with new motherboard)	6.3	CentOS-6.3-i386-bin-DVD1.iso
Linux CentOS Distribution used for OCS and OVCS	6.5	CentOS-6.5- i386-binDVD1.iso

OVO Third-Party Software (COTS) Components

Software	Version	Filename
Common Files		
Java SE Runtime Environment	Runtime Environment 6 Update 2	jre-6u2-linux-i586.bin
Java Cryptography Extension	Jurisdiction Policy Files 6	jce_policy-6.zip
Apache Tomcat	6.0.13	apache-tomcat-6.0.13.tar.gz
PDI Scanner Driver and Libraries for OVO	6.3.32	PS3_Canon_libraries_2014Aug12A.zip
Citizen Printer for OVO	1.11.2.7	CSA_JPOS11127_setupEN.bin
OpenCSV	2.3	opencsv-2.3-src-withlibs.tar.gz
Jetway J7F2		
openChrome Video Driver	0.2.900-7.el5	xf86-video-openchrome-0.2.900.tar.gz
eGalax Touchscreen Driver	3.00.3719	eGalaxTouch-3.00.3719-32b-k26.tar.gz
FVWM Desktop Window Manager	2.4.19	fvwm-2.4.19.tar.gz
Jetway 2550		
Xenarc Touchscreen Driver	2.5.2107	eGTouch_v2.5.2107.Lx.tar.gz
Linux Kernel	3.4.13	linux-3.4.13.tar.bz2
Bash	4.1.2-15.el6	bash-4.1.2-15.el6_5.2.i686.rpm
Java SE Runtime Environment	Runtime Environment 6 Update 2	jre-6u2-linux-i586.bin
Java Cryptography Extension	Jurisdiction Policy Files 6	jce_policy-6.zip
Apache Tomcat	6.0.13	apache-tomcat-6.0.13.tar.gz
PDI Scanner Driver and Libraries for OVO	6.3.32	PS3_Canon_libraries_2014Jan06A.zip
Citizen Printer for OVO	1.11.2.7	CSA_JPOS11127_setupEN.bin
OpenCSV	2.3	opencsv-2.3-src-withlibs.tar.gz
Jetway J7F2		
openChrome Video Driver	0.2.900-7.el5	xf86-video-openchrome-0.2.900.tar.gz

Software	Version	Filename
eGalax Touchscreen Driver	3.00.3719	eGalaxTouch-3.00.3719-32b-k26.tar.gz
FVWM Desktop Window Manager	2.4.19	fvwm-2.4.19.tar.gz
Jetway 2550		
Xenarc Touchscreen Driver	2.5.2107	eGTouch_v2.5.2107.Lx.tar.gz
Linux Kernel	3.4.13	linux-3.4.13.tar.bz2
Bash	4.1.2-15.el6	bash-4.1.2-15.el6_5.2.i686.rpm

OVI-VC Third-Party Software (COTS) Components

Software	Version	Filename
Common Files		
Java SE Development Kit	Development Kit 6 Update 2 for Linux	jdk-6u2-linux-i586.bin
Java SE Runtime Environment	Runtime Environment 6 Update 2	jre-6u2-linux-i586.bin
Java Cryptography Extension	Jurisdiction Policy Files 6	jce_policy-6.zip
RXTX - Library and Jar	2.1-7r2	rxtx-2.1-7-bins-r2.zip
Jetway J7F2		
openChrome Video Driver	0.2.900-7.el5	xf86-video-openchrome-0.2.900.tar.gz
eGalax Touchscreen Driver	3.00.3719	eGalaxTouch-3.00.3719-32b-k26.tar.gz
FVWM Desktop Window Manager	2.4.19	fvwm-2.4.19.tar.gz
Jetway 2550		
Xenarc Touchscreen Driver	2.5.2107	eGTouch_v2.5.2107.Lx.tar.gz
Linux Kernel	3.4.13	linux-3.4.13.tar.bz2

Peripherals used during the examination included:

| COTS Equipment	Make	Model
3 x Transport Media	STEC	Thumb Drive (UFD) 1GB Capacity
2x Thumb Drives	PNY	USB 16 GB
Network Switch	Linksys	SR2024 Business Series 24-Port 10/100/1000 Gigabit Switch

ADA Voting Booth	American Made Election Equipment (AMEE)	Model 2000

Test support materials utilized during the examination will include:

- 82.5mm thermal receipt paper for printing ballots on the OVI, to be processed by the OVO and OVCS.
- Ballot stock, for printing of ballots to be processed by the OVO and OVCS
- USB thumb drives, used as Transport Media for transport of election data within the system

2.6 System Topology Diagram

Below is the System Overview Diagram that provides a visual system overview:
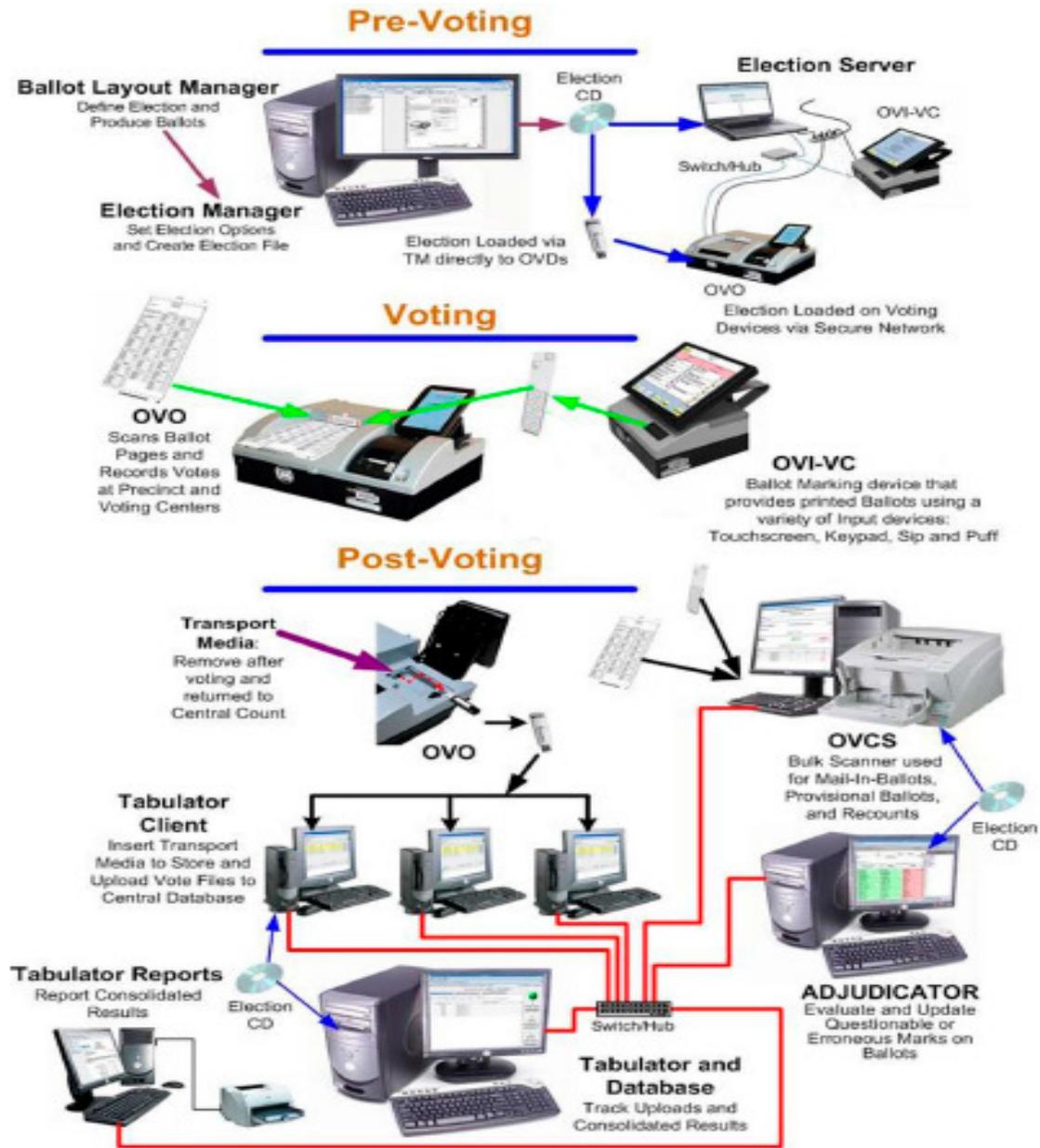
3   TEST PROCESS

3.1   General Information

The examination of the **Unisyn OVS 1.3.0.2.A** voting system will be performed by SLI Compliance (the "Examiner").

All voting system hardware necessary to perform the examination will be supplied by Unisyn Voting Solutions (Unisyn). Software and firmware for the **Unisyn OVS 1.3.0.2.A** voting system will be obtained from the VSTL that performed the EAC certification test campaign.

The firmware will be installed by the Examiner prior to the examination, using the appropriate media and processes for installation.

3.2   Test Approach

The test approach for this examination will consist of Source Code Review, and System Level Testing, to verify the updates made from the previously examined 1.3.0.2 voting system. Documentation review, Security/Penetration Analysis, Privacy and Usability results will be leveraged from the OVS 1.3.0.2 examination, as none of these aspects were affected by the isolated modification to OVI-VC.

Source Code Review will be performed prior to the public examination to determine if there are any vulnerabilities found within the source code that would warrant additional Security examination.

For the witnessed portion of the examination, System Level analysis will examine the Unisyn OVS 1.3.0.2.A voting system by conducting a General election and a Closed Primary election. Each test will start with creating an election definition and then creating the election media needed to populate the voting devices (the OVO, OVI and OVCS). Ballots will be marked, manually as well as via the OVI ballot marking device. All marked ballots will be tabulated through the OVO and OVCS devices. The OVI-VC ballot marking device, the OVO precinct scanner and OVCS central location high speed scanner, will all be exercised to verify that they meet all pertinent requirements of the Pennsylvania Election Code.

The following describes each test and how it will be conducted, as well as the criteria being examined.

3.2.1 Source Code Review

Source code review for the **Unisyn OVS 1.3.0.2.A** voting system will be performed, with the examination having a focus on determining whether any vulnerabilities are found. The examination will look for malicious software, cryptographic software, process control or password management vulnerabilities being found.

3.2.2 System Level Testing

The system level testing is divided into two separate tests, one a primary election test and the other a general election test. Each test is described below.

3.2.2.1 Primary Election

A closed primary election will be run utilizing:

- OVS OpenElect Voting Optical (OVO)
- OVS OpenElect Voting Interface (OVI-VC)
- OVS OpenElect Voting Central System (OVCS)
- OVS OpenElect Central Suite (OCS)

The election consists of:

- Two parties: Republican and Democratic
- Two precincts: Precinct 1, and a split precinct, 2a and 2b
- 15 contests: 13 partisan contests and 2 referendums, 8 "Vote for One", 1 "Vote for no more than Two", 1 "Vote for no more than Three", 1 "Vote for no more than Six" and 1 "Vote for no more than Twelve"

The election definition will be created within the Unisyn OCS, then Transport Media will be created to populate the devices under examination with the election.

Ballots will be both hand marked as well as marked and printed utilizing the polling place OVI-VC ballot marking device, then all marked (hand marked and OVI-VC printed) ballots will be processed through the polling place OVO optical scanner, as well as the OVCS central system.

Tabulation results for both hand marked and OVI-VC produced ballots, from the OVO and OVCS, will then be processed into the OCS, and reports will be generated with results for the election.

The results reports will be confirmed to match the expected results of the voted ballots.

3.2.2.1.1   Requirements for Test

The requirements examined during this test will include:

25 P.S. § 3031.1

The system shall provide for a permanent physical record of each vote cast.

25 P.S. § 3031.7(2)

Provides facilities for voting for such candidates as may be nominated and upon such questions as may be submitted.

25 P.S. § 3031.7(5)

Permits each voter to vote for any person and any office for whom and for which he is lawfully entitled to vote, whether or not the name of such person appears upon the ballot as a candidate for nomination or election.

25 P.S. § 3031.7(6)

Permits each voter to vote for as many persons for any office as he is entitled to vote for and to vote for or against any question upon which he is entitled to vote.

ii) precludes each voter from voting or from having his vote tabulated for any candidate, or upon any question, for whom or upon which he is not entitled to vote.

25 P.S. § 3031.7(7)

If it is of a type that registers the vote electronically, the voting system shall preclude each voter from voting for more persons for any office than he is entitled to vote for or upon any question more than once.

25 P.S. § 3031.7(8)

i) Precludes each voter from voting or from having his vote tabulated more than once for any candidate for the same office or

ii) upon any question,

iii) except in districts and for offices where cumulative voting is authorized by law

25 P.S. § 3031.7(9)

i) Permits each voter at a primary election to vote only for the candidates seeking nomination by a political party in which such voter is registered and enrolled, and

ii) for any candidate for nonpartisan nomination, and

iii) for any question upon which he is entitled to vote.

25 P.S. § 3031.7(10)

If it is of a type that registers the vote electronically,

i) the voting system shall permit each voter to change his vote for any candidate or

ii) upon any question appearing on the official ballot up to the time that he takes the final step to register his vote and to have his vote computed

If it is of a type that uses paper ballots or ballot cards to register the vote and automatic tabulating equipment to compute such votes,

i) the system shall provide that a voter who spoils his ballot may obtain another ballot; any ballot thus returned shall be immediately cancelled and at the close of the polls shall be enclosed in an envelope marked "Spoiled" which shall be sealed and returned to the county board.

25 P.S. § 3031.7(11)

i) Is suitably designed for the purpose used,

ii) is constructed in a neat and workmanlike manner of durable material of good quality,

iii) is safely and efficiently useable in the conduct of elections and, with respect to the counting of ballots cast at each district,

iv) is suitably designed and equipped to be capable of absolute accuracy, which accuracy shall be demonstrated to the Secretary of the Commonwealth.

25 P.S. § 3031.7(13)

When properly operated, records correctly and computes and tabulates accurately every valid vote registered.

25 P.S. § 3031.7(16)

If the voting system is of a type which provides for the computation and tabulation of votes at the district level, the district component of the automatic tabulating equipment shall include the following mechanisms or capabilities:

(iv) If the number of choices recorded for any office or on any question exceeds the number for which the voter is entitled to vote, it shall reject all choices recorded on the ballot for that office or question, provided, that if used during the period of voting it may also have the capacity to indicate to a voter that he has improperly voted for more candidates for any office than he is entitled to vote for, and in such case it shall have the capacity to permit the voter to mark a new ballot or to forego his opportunity to make such correction.

(v) It shall be equipped

    i)   with an element which generates a printed record at the beginning of its operation which verifies that the tabulating elements for each candidate position and each question and the public counter are all set to zero and

    ii)   with an element which generates a printed record at the finish of its operation of the total number of voters whose ballots have been tabulated, the total number of votes cast for each candidate whose name appears on the ballot, and the total number of votes cast for, or against, any question appearing on the ballot.

25 P.S. § 3031.7(17)

If the voting system is of a type which provides for the computation and tabulation of all votes at a central counting center or if it provides for the tabulation of district totals at such a central counting center, the central automatic tabulating equipment shall include the following mechanisms or capabilities:

(ii) If the number of choices for any office or on any question exceeds the number for which the voter is entitled to vote, it shall reject all choices recorded on the ballot for that office or question.

(iii) It shall have a means by which to verify that the counters for each candidate position and for each question are all set to zero and shall be able to generate a printed record of each election district showing the total number of voters whose ballots have been tabulated, the total number of votes cast for each candidate whose name appears on the ballot, and the

total number of votes cast for, or against, any question appearing on the ballot.

3.2.2.1.2   Test Steps

The following test steps will be completed for running the closed primary election with results as noted:

OCS, Pre-election

Utilizing the OVS OCS, a Primary election definition will be created with pre-election activities, which includeS adding contests, parties, choices, precincts, districts, and ballot styles, as well as creating media for system devices.

The capability to add candidates and referendum questions to the election definition in this system will be confirmed.

Media will be created in order to load the election onto each of the voting devices (OVI-VC, OVO and OVCS).

This portion of the test will verify:

25 P.S. § 3031.7(2)

Provides facilities for voting for such candidates as may be nominated and upon such questions as may be submitted.

Polling Place

Utilizing the OVI and OVO, a polling place will be created and opened.

1. Polls will be opened.

Zero reports for all devices will be printed and verified.

This portion of the test will verify:

25 P.S. § 3031.7(16)

v) It shall be equipped

i) with an element which generates a printed record at the beginning of its operation which verifies that the tabulating elements for each candidate position and each question and the public counter are all set to zero

OVI-VC

The OVI-VC polling place ballot marking device will be utilized to create voted ballots in English, Spanish, and Chinese. It will be verified that a voter of a particular party can only cast votes for candidates of that party. Write-in candidates will be voted in contests as well. Contests displayed to the voter will be only those contests in which the voter is entitled to vote. Overvotes will be attempted and verified to not be allowed. Undervoted contests will be verified to be allowed, though the OVI can warn the voter of the undervoted contests. Votes for candidates will be changed within the contest, as well as after leaving the contest and then returning from other contests, and from the summary screen.

Once printed, the ballot will be taken to the OVO device for scanning.

During scanning operations, it will be verified that zero reports are no longer able to be printed.

This portion of the test will verify:

25 P.S. § 3031.7(2)

Provides facilities for voting for such candidates as may be nominated and upon such questions as may be submitted.

25 P.S. § 3031.7(5)

Permits each voter to vote for any person and any office for whom and for which he is lawfully entitled to vote, whether or not the name of such person appears upon the ballot as a candidate for nomination or election.

25 P.S. § 3031.7(6)

i) Permits each voter to vote for as many persons for any office as he is entitled to vote for and to vote for or against any question upon which he is entitled to vote.

ii) Precludes each voter from voting or from having his vote tabulated for any candidate, or upon any question, for whom or upon which he is not entitled to vote.

25 P.S. § 3031.7(7)

If it is of a type that registers the vote electronically, the voting system shall preclude each voter from voting for more persons for any office than he is entitled to vote for or upon any question more than once.

25 P.S. § 3031.7(8)

i) Precludes each voter from voting or from having his vote tabulated more than once for any candidate for the same office or

ii) upon any question,

ii) except in districts and for offices where cumulative voting is authorized by law Note that OVS 1.3.0.2.A does not support cumulative voting.

25 P.S. § 3031.7(9)

i) Permits each voter at a primary election to vote only for the candidates seeking nomination by a political party in which such voter is registered and enrolled, and

ii) for any candidate for nonpartisan nomination, and

iii) for any question upon which he is entitled to vote.

25 P.S. § 3031.7(10)

If it is of a type that registers the vote electronically,

i) the voting system shall permit each voter to change his vote for any candidate or

ii) upon any question appearing on the official ballot up to the time that he takes the final step to register his vote and to have his vote computed

25 P.S. § 3031.7(13)

When properly operated, records correctly and computes and tabulates accurately every valid vote registered.

Note that this represents a partial verification of this requirement, as each component of the system is examined to determine if the system as a whole meets this requirement.

OVO

Hand marked ballots will be scanned through the OVO. Ballots will be voted in English. Write-in candidates will be voted in contests.

Contests displayed to the voter on the ballot will be only those contests in which the voter is entitled to vote.

Overvotes will be attempted to be scanned and will be verified to issue a warning to the voter. The system will be verified to allow the poll worker, or the voter to choose to "Ignore Validation" and cast their ballot with overvotes, if the voter so chooses.

Undervoted contests will be verified to be allowed.

All OVI produced ballots will be scanned through the OVO.

With polls open and ballots scanned, a zero report will be attempted to be printed and will be verified to not be allowed once ballots have been cast.

This portion of the test will verify:

25 P.S. § 3031.1

The system shall provide for a permanent physical record of each vote cast.

25 P.S. § 3031.7(2)

Provides facilities for voting for such candidates as may be nominated and upon such questions as may be submitted.

25 P.S. § 3031.7(5)

Permits each voter to vote for any person and any office for whom and for which he is lawfully entitled to vote, whether or not the name of such person appears upon the ballot as a candidate for nomination or election.

25 P.S. § 3031.7(6)

i) Permits each voter to vote for as many persons for any office as he is entitled to vote for and to vote for or against any question upon which he is entitled to vote.

ii) Precludes each voter from voting or from having his vote tabulated for any candidate, or upon any question, for whom or upon which he is not entitled to vote.

25 P.S. § 3031.7(7)

If it is of a type that registers the vote electronically, the voting system shall preclude each voter from voting for more persons for any office than he is entitled to vote for or upon any question more than once.

Note that on the OVO, the voter and/or pollworker is able to turn off validation of the ballot. So, if a voter wants to cast a ballot with one or more overvoted contests, they can cast the ballot, turning validation off, to that the ballot will not be rejected.

25 P.S. § 3031.7(8)

i) Precludes each voter from voting or from having his vote tabulated more than once for any candidate for the same office or

ii) upon any question,

    ii)   except in districts and for offices where cumulative voting is authorized by law Note that **OVS 1.3.0.2.A** does not support cumulative voting.

    iii)

25 P.S. § 3031.7(9)

i) Permits each voter at a primary election to vote only for the candidates seeking nomination by a political party in which such voter is registered and enrolled, and

ii) for any candidate for nonpartisan nomination, and

    iv)   for any question upon which he is entitled to vote.

25 P.S. § 3031.7(10)

If it is of a type that uses paper ballots or ballot cards to register the vote and automatic tabulating equipment to compute such votes,

iv) the system shall provide that a voter who spoils his ballot may obtain another ballot; any ballot thus returned shall be immediately cancelled and at the close of the polls shall be enclosed in an envelope marked "Spoiled" which shall be sealed and returned to the county board.

25 P.S. § 3031.7(11)

i) Is suitably designed for the purpose used,

ii) is constructed in a neat and workmanlike manner of durable material of good quality,

iii) is safely and efficiently useable in the conduct of elections and, with respect to the counting of ballots cast at each district,

iv) is suitably designed and equipped to be capable of absolute accuracy, which accuracy shall be demonstrated to the Secretary of the Commonwealth.

25 P.S. § 3031.7(13)

When properly operated, records correctly and computes and tabulates accurately every valid vote registered.

Note that this represents a partial verification of this requirement, as each component of the system is examined to determine if the system as a whole meets this requirement.

25 P.S. § 3031.7(16)

If the voting system is of a type which provides for the computation and tabulation of votes at the district level, the district component of the automatic tabulating equipment shall include the following mechanisms or capabilities:

(iv) If the number of choices recorded for any office or on any question exceeds the number for which the voter is entitled to vote, it shall reject all choices recorded on the ballot for that office or question, provided, that if used during the period of voting it may also have the capacity to indicate to a voter that he has improperly voted for more candidates for any office than he is entitled to vote for, and in such case it shall have the capacity to permit the voter to mark a new ballot or to forego his opportunity to make such correction.

Polls will be then closed, and reports will be generated to verify the total number of voters whose ballots have been tabulated, the total number of votes cast for each candidate whose name appears on the ballot, and the total number of votes cast for, or against, any question appearing on the ballot.

This portion of the test verified:

25 P.S. § 3031.7(16)

If the voting system is of a type which provides for the computation and tabulation of votes at the district level, the district component of the automatic tabulating equipment shall include the following mechanisms or capabilities:

(v) It shall be equipped

ii) with an element which generates a printed record at the finish of its operation of the total number of voters whose ballots have been tabulated, the total number of votes cast for each candidate whose name appears on the ballot, and the total number of votes cast for, or against, any question appearing on the ballot.

Central Location – OVCS

The OVCS will be set up as prescribed in **Unisyn OVS 1.3.0.2.A** documentation, powered up, poll opening will be performed, producing a zero report to verify all memory registers are empty and no votes are yet cast.

This portion of the test will verify:

25 P.S. § 3031.7(16)

v) It shall be equipped

i) with an element which generates a printed record at the beginning of its operation which verifies that the tabulating elements for each candidate position and each question and the public counter are all set to zero

The same hand marked ballots scanned through the OVO will be scanned through the OVCS. Ballots will be voted in English and Spanish. Write-in candidates will be voted in contests.

Contests displayed to the voter on the ballot will be only those contests in which the voter is entitled to vote. Overvotes will be scanned and verified to not be counted as valid selections. Undervoted contests will be verified to be allowed.

All OVI produced ballots will be scanned through the OVCS.

Scanning will be then be closed, and reports generated to verify the total number of voters whose ballots have been tabulated, the total number of votes cast for each candidate whose name appears on the ballot, and the total number of votes cast for, or against, any question appearing on the ballot.

This portion of the test will verify:

25 P.S. § 3031.1

The system shall provide for a permanent physical record of each vote cast.

25 P.S. § 3031.7(2)

Provides facilities for voting for such candidates as may be nominated and upon such questions as may be submitted.

25 P.S. § 3031.7(5)

Permits each voter to vote for any person and any office for whom and for which he is lawfully entitled to vote, whether or not the name of such person appears upon the ballot as a candidate for nomination or election.

25 P.S. § 3031.7(6)

i) Permits each voter to vote for as many persons for any office as he is entitled to vote for and to vote for or against any question upon which he is entitled to vote.

ii) Precludes each voter from voting or from having his vote tabulated for any candidate, or upon any question, for whom or upon which he is not entitled to vote.

25 P.S. § 3031.7(8)

i) Precludes each voter from voting or from having his vote tabulated more than once for any candidate for the same office or

ii) upon any question,

ii) except in districts and for offices where cumulative voting is authorized by law

 Note that OVS 1.3.0.2.A does not support cumulative voting.

25 P.S. § 3031.7(9)

i) Permits each voter at a primary election to vote only for the candidates seeking nomination by a political party in which such voter is registered and enrolled, and

ii) for any candidate for nonpartisan nomination, and

v) for any question upon which he is entitled to vote.

25 P.S. § 3031.7(10)

If it is of a type that uses paper ballots or ballot cards to register the vote and automatic tabulating equipment to compute such votes,

vi) the system shall provide that a voter who spoils his ballot may obtain another ballot; any ballot thus returned shall be immediately cancelled and at the close of the polls shall be enclosed in an envelope marked "Spoiled" which shall be sealed and returned to the county board.

25 P.S. § 3031.7(11)

i) Is suitably designed for the purpose used,

ii) is constructed in a neat and workmanlike manner of durable material of good quality,

iii) is safely and efficiently useable in the conduct of elections and, with respect to the counting of ballots cast at each district,

iv) Is suitably designed and equipped to be capable of absolute accuracy, which accuracy shall be demonstrated to the Secretary of the Commonwealth.

25 P.S. § 3031.7(13)

When properly operated, records correctly and computes and tabulates accurately every valid vote registered.

Note that this represents a partial verification of this requirement, as each component of the system is examined to determine if the system as a whole meets this requirement.

25 P.S. § 3031.7(17)

If the voting system is of a type which provides for the computation and tabulation of all votes at a central counting center or if it provides for the tabulation of district totals at such a central counting center, the central automatic tabulating equipment shall include the following mechanisms or capabilities:

(ii) If the number of choices for any office or on any question exceeds the number for which the voter is entitled to vote, it shall reject all choices recorded on the ballot for that office or question.

(iii) It shall have a means by which to verify that the counters for each candidate position and for each question are all set to zero.

Tallying and Reporting

Election data will be taken from the OVO and OVCS and read into the OCS. The data will be tallied and reports will be generated. Results will be then be verified against the expected results.

This portion of the test will verify:

25 P.S. § 3031.7(13)

When properly operated, records correctly and computes and tabulates accurately every valid vote registered.

Note that this represents a partial verification of this requirement, as each component of the system is examined to determine if the system as a whole meets this requirement.

25 P.S. § 3031.7(17)

If the voting system is of a type which provides for the computation and tabulation of all votes at a central counting center or if it provides for the tabulation of district totals at such a central counting center, the central automatic tabulating equipment shall include the following mechanisms or capabilities:

(ii) If the number of choices for any office or on any question exceeds the number for which the voter is entitled to vote, it shall reject all choices recorded on the ballot for that office or question.

(iii) It shall have a means by which to verify that the counters for each candidate position and for each question are all set to zero and shall be able to generate a printed record of each election district showing the total number of voters whose ballots have been tabulated, the total number of votes cast for each candidate whose name appears on the ballot, and the total number of votes cast for, or against, any question appearing on the ballot. It may also be capable of generating cumulative election reports.

3.2.2.2   General Election

A general election will be run utilizing:

- OVS OpenElect Voting Optical (OVO)
- OVS OpenElect Voting Interface (OVI-VC)
- OVS OpenElect Voting Central System (OVCS)
- OVS OpenElect Central Suite (OCS)

The election will consist of:

- Two parties: Republican and Democratic
- Two precincts: Precinct 1, and a split precinct 2, consisting of splits 2a and 2b

- 12 contests: 6 partisan contests, 1 non-partisan, 4 retention and 1 referendum, 3 "Vote for One", 3 "Vote for no more than Three", and 4 "Vote for no more than Two"

- "Pennsylvania Straight Party Method" voting will be enabled

The election definition will be created within the Unisyn OCS, then Transport Media will be created to populate the devices under examination with the election.

Ballots will be both hand marked as well as marked and printed utilizing the polling place OVI-VC ballot marking device, then all marked (hand marked and OVI-VC printed) ballots will be processed through the polling place OVO optical scanner, as well as the OVCS central system.

Tabulation results for both hand marked and OVI-VC produced ballots, from the OVO and OVCS, will then be processed into the OCS, and reports will be generated with results for the election.

The results reports will be confirmed to match the expected results of the voted ballots.

Note that ballots will be marked (hand marked and OVI-VC printed) to examine the voting system's ability to properly enact "Pennsylvania Straight Party Method" voting.

3.2.2.2.1 Requirements for Testing

The requirements examined during this test include:

25 P.S. § 3031.7(2)

Provides facilities for voting for such candidates as may be nominated and upon such questions as may be submitted.

25 P.S. § 3031.7(3)

i) Permits each voter, at other than primary elections, to vote a straight political party ticket by one mark or act and,

ii) by one mark or act, to vote for all the candidates of one political party for presidential electors and,

iii) by one mark or act, to vote for all the candidates of one political party for every office to be voted for, and

iv) every such mark or act shall be equivalent to and shall be counted as a vote for every candidate of the political party so marked including its candidates for presidential electors,

v) except with respect to those offices as to which the voter has registered a vote for individual candidates of the same or another political party or political body, in which case the automatic tabulating equipment shall credit the vote for that office only for the candidate individually so selected, notwithstanding the fact that the voter may not have individually voted for the full number of candidates for that office for which he was entitled to vote.

Note that 25 P.S. § 3031.7(3) is often referred to as "the Pennsylvania method". To change a vote for a straight political party ticket in an election where more than one candidate is elected, the Election Code, at 25 P.S. § 3031.7(3), requires the voter to make one mark for a candidate in the other party for whom the voter would like to vote. In doing so, this action requires that the votes previously make by the voter for all candidates for that office be erased. Then the voter must be able to select candidates of either party for

that office up to the number allowed or write in an individual's name, as provided at 25 P.S. § 3031.7(5) and 25 P.S. § 3031.7(6).

25 P.S. § 3031.7(4)

Permits each voter, at other than primary elections, to vote a ticket selected from the nominees of any and all political parties, from the nominees of any and all political bodies, and from any persons whose names are not in nomination and do not appear upon the official ballot.

25 P.S. § 3031.7(5)

Permits each voter to vote for any person and any office for whom and for which he is lawfully entitled to vote, whether or not the name of such person appears upon the ballot as a candidate for nomination or election.

25 P.S. § 3031.7(6)

Permits each voter to vote for as many persons for any office as he is entitled to vote for and to vote for or against any question upon which he is entitled to vote.

ii) precludes each voter from voting or from having his vote tabulated for any candidate, or upon any question, for whom or upon which he is not entitled to vote.

25 P.S. § 3031.7(7)

If it is of a type that registers the vote electronically, the voting system shall preclude each voter from voting for more persons for any office than he is entitled to vote for or upon any question more than once.

25 P.S. § 3031.7(8)

v) Precludes each voter from voting or from having his vote tabulated more than once for any candidate for the same office or

vi) upon any question,

vii) except in districts and for offices where cumulative voting is authorized by law

25 P.S. § 3031.7(10)

If it is of a type that registers the vote electronically,

i) the voting system shall permit each voter to change his vote for any candidate or

ii) upon any question appearing on the official ballot up to the time that he takes the final step to register his vote and to have his vote computed.

If it is of a type that uses paper ballots or ballot cards to register the vote and automatic tabulating equipment to compute such votes,

ii) the system shall provide that a voter who spoils his ballot may obtain another ballot; any ballot thus returned shall be immediately cancelled and at the close of the polls shall be enclosed in an envelope marked "Spoiled" which shall be sealed and returned to the county board.

25 P.S. § 3031.7(11)

i) Is suitably designed for the purpose used,

ii) is constructed in a neat and workmanlike manner of durable material of good quality,

iii) is safely and efficiently useable in the conduct of elections and, with respect to the counting of ballots cast at each district,

iv) is suitably designed and equipped to be capable of absolute accuracy, which accuracy shall be demonstrated to the Secretary of the Commonwealth.

25 P.S. § 3031.7(13)

When properly operated, records correctly and computes and tabulates accurately every valid vote registered.

Note that this represents a partial verification of this requirement, as each component of the system is examined to determine if the system as a whole meets this requirement.

25 P.S. § 3031.7(16)

If the voting system is of a type which provides for the computation and tabulation of votes at the district level, the district component of the automatic tabulating equipment shall include the following mechanisms or capabilities:

(iv) If the number of choices recorded for any office or on any question exceeds the number for which the voter is entitled to vote, it shall reject all choices recorded on the ballot for that office or question, provided, that if used during the period of voting it may also have the capacity to indicate to a voter that he has improperly voted for more candidates for any office than he is entitled to vote for, and in such case it shall have the capacity to permit the voter to mark a new ballot or to forego his opportunity to make such correction.

(v) It shall be equipped

i) with an element which generates a printed record at the beginning of its operation which verifies that the tabulating elements for each candidate position and each question and the public counter are all set to zero; and

ii) with an element which generates a printed record at the finish of its operation of the total number of voters whose ballots have been tabulated;

the total number of votes cast for each candidate whose name appears on the ballot, and the total number of votes cast for, or against, any question appearing on the ballot.

25 P.S. § 3031.7(17)

If the voting system is of a type which provides for the computation and tabulation of all votes at a central counting center or if it provides for the tabulation of district totals at such a central counting center, the central automatic tabulating equipment shall include the following mechanisms or capabilities:

(ii) If the number of choices for any office or on any question exceeds the number for which the voter is entitled to vote, it shall reject all choices recorded on the ballot for that office or question.

(iii) It shall have a means by which to verify that the counters for each candidate position and for each question are all set to zero and shall be able to generate a printed record of each election district showing the total number of voters whose ballots have been tabulated, the total number of votes cast for each candidate whose name appears on the ballot, and the total number of votes cast for, or against, any question appearing on the ballot

3.2.2.2.2 Test Steps

The following steps will be completed with results as noted:

OCS, Pre-election

Utilizing the OVS OCS, a General election definition will be created with pre-election activities, which include adding contests, including straight party, parties, choices, precincts, districts, ballot styles, as well as creating media for system devices.

Candidates and referendum questions will be verified to be able to be added to the election definition.

This portion of the test will verify:

25 P.S. § 3031.7(2)

Provides facilities for voting for such candidates as may be nominated and upon such questions as may be submitted.

Polling Place

Utilizing the OVI and OVO, a polling place will be created and opened.

1. Polls will be opened.

Zero reports for all devices will be printed and will be verified.

This portion of the test will verify:

25 P.S. § 3031.7(16)

v) It shall be equipped

> i) with an element which generates a printed record at the beginning of its operation which verifies that the tabulating elements for each candidate position and each question and the public counter are all set to zero

OVI

The OVI polling place ballot marking device will be utilized to create voted ballots in English and Spanish. It will be verified that a voter of a particular party is able to cast votes for candidates of other parties. When voters select a Straight Party option, the marking methods will be verified to follow the Pennsylvania Method when the number of candidates in the selected straight party equals the number of choices allowed for the contest, as well as when there are fewer candidates than choices allowed in the contest. Please see the note below for additional detail on the Pennsylvania Method testing. Write-in candidates will be voted in all different contests as well. Contests displayed to the voter will be only those contests in which the voter is entitled to vote. Overvotes will be attempted and will be verified to not be allowed. Undervoted contests will be verified to be allowed, though the OVI can warn the voter of the undervoted contests. Votes for candidates will be changed within the contest, as well as after leaving the contest and then returning from

other contests, and from the summary screen. Write-in's will be added to contests, as well as removed from contests, upon revisiting the contest.

Once printed, the ballot will be put into a privacy sleeve and will be taken to the OVO device for scanning.

Note that previously in OVS 1.3.0.2, when a straight party contest has less than the "Vote for #" number of choices for that particular party, the OVI did not clear the straight party choices that had been pre-selected by the "straight party" option. It allowed the voter to add to the existing selections. This was a violation of the Pennsylvania Straight Party method, and is the reason for this examination of OVS 1.3.0.2.A

This portion of the test will verify:

25 P.S. § 3031.7(2)

Provides facilities for voting for such candidates as may be nominated and upon such questions as may be submitted.

25 P.S. § 3031.7(3)

i) Permits each voter, at other than primary elections, to vote a straight political party ticket by one mark or act and,

ii) by one mark or act, to vote for all the candidates of one political party for presidential electors and,

iii) by one mark or act, to vote for all the candidates of one political party for every office to be voted for, and

iv) every such mark or act shall be equivalent to and shall be counted as a vote for every candidate of the political party so marked including its candidates for presidential electors,

v) except with respect to those offices as to which the voter has registered a vote for individual candidates of the same or another political party or political body, in which case the automatic tabulating equipment shall credit the vote for that office only for the candidate individually so selected, notwithstanding the fact that the voter may not have individually voted for the full number of candidates for that office for which he was entitled to vote.

25 P.S. § 3031.7(4)

Permits each voter, at other than primary elections, to vote a ticket selected from the nominees of any and all political parties, from the nominees of any and all political bodies, and from any persons whose names are not in nomination and do not appear upon the official ballot.

25 P.S. § 3031.7(5)

Permits each voter to vote for any person and any office for whom and for which he is lawfully entitled to vote, whether or not the name of such person appears upon the ballot as a candidate for nomination or election.

25 P.S. § 3031.7(6)

i) Permits each voter to vote for as many persons for any office as he is entitled to vote for and to vote for or against any question upon which he is entitled to vote.

ii) Precludes each voter from voting or from having his vote tabulated for any candidate, or upon any question, for whom or upon which he is not entitled to vote.

25 P.S. § 3031.7(7)

If it is of a type that registers the vote electronically, the voting system shall preclude each voter from voting for more persons for any office than he is entitled to vote for or upon any question more than once.

25 P.S. § 3031.7(8)

i) Precludes each voter from voting or from having his vote tabulated more than once for any candidate for the same office or

ii) upon any question,

ii) except in districts and for offices where cumulative voting is authorized by law Note that OVS 1.3.0.2.A does not support cumulative voting.

25 P.S. § 3031.7(10)

If it is of a type that registers the vote electronically,

i) the voting system shall permit each voter to change his vote for any candidate or

ii) upon any question appearing on the official ballot up to the time that he takes the final step to register his vote and to have his vote computed

25 P.S. § 3031.7(13)

When properly operated, records correctly and computes and tabulates accurately every valid vote registered.

Note that this represents a partial verification of this requirement, as each component of the system is examined to determine if the system as a whole meets this requirement.

OVO

Ballots will be hand marked and scanned through the OVO. Ballots will be voted in English and Spanish. It will be verified that a voter of a particular party is able to cast votes for candidates of other parties. When voters select a Straight Party option, the marking methods follow the Pennsylvania Method. Write-in candidates will be voted in all different contests as well. Contests displayed to the voter on the ballot will be only those contests in which the voter is entitled to vote. Overvotes will be attempted to be scanned and verified to issue a warning to the voter. Undervoted contests will be verified to be allowed. The OVO can be configured to warn the voter of undervoted ballots, if desired.

All OVI produced ballots will be scanned through the OVO.

This portion of the test will verify:

25 P.S. § 3031.1

The system shall provide for a permanent physical record of each vote cast.

25 P.S. § 3031.7(2)

Provides facilities for voting for such candidates as may be nominated and upon such questions as may be submitted.

25 P.S. § 3031.7(3)

i)Permits each voter, at other than primary elections, to vote a straight political party ticket by one mark or act and,

ii) by one mark or act, to vote for all the candidates of one political party for presidential electors and,

iii) by one mark or act, to vote for all the candidates of one political party for every office to be voted for, and

iv) every such mark or act shall be equivalent to and shall be counted as a vote for every candidate of the political party so marked including its candidates for presidential electors,

v) except with respect to those offices as to which the voter has registered a vote for individual candidates of the same or another political party or political body, in which case the automatic tabulating equipment shall credit the vote for that office only for the candidate individually so selected, notwithstanding the fact that the voter may not have individually voted for the full number of candidates for that office for which he was entitled to vote.

25 P.S. § 3031.7(4)

Permits each voter, at other than primary elections, to vote a ticket selected from the nominees of any and all political parties, from the nominees of any and all political bodies, and from any persons whose names are not in nomination and do not appear upon the official ballot.

25 P.S. § 3031.7(5)

Permits each voter to vote for any person and any office for whom and for which he is lawfully entitled to vote, whether or not the name of such person appears upon the ballot as a candidate for nomination or election.

25 P.S. § 3031.7(6)

i) Permits each voter to vote for as many persons for any office as he is entitled to vote for and to vote for or against any question upon which he is entitled to vote.

ii) Precludes each voter from voting or from having his vote tabulated for any candidate, or upon any question, for whom or upon which he is not entitled to vote.

25 P.S. § 3031.7(8)

i) Precludes each voter from voting or from having his vote tabulated more than once for any candidate for the same office or;

ii) upon any question,

ii) except in districts and for offices where cumulative voting is authorized by law

Note that OVS 1.3.0.2.A does not support cumulative voting.

25 P.S. § 3031.7(10)

If it is of a type that uses paper ballots or ballot cards to register the vote and automatic tabulating equipment to compute such votes,

i) the system shall provide that a voter who spoils his ballot may obtain another ballot; any ballot thus returned shall be immediately cancelled and at the close of the polls shall be enclosed in an envelope marked "Spoiled" which shall be sealed and returned to the county board.

25 P.S. § 3031.7(11)

i) Is suitably designed for the purpose used,

ii) is constructed in a neat and workmanlike manner of durable material of good quality,

iii) is safely and efficiently useable in the conduct of elections and, with respect to the counting of ballots cast at each district,

  v)   is suitably designed and equipped to be capable of absolute accuracy, which accuracy shall be demonstrated to the Secretary of the Commonwealth.

25 P.S. § 3031.7(13)

When properly operated, records correctly and computes and tabulates accurately every valid vote registered.

Note that this represents a partial verification of this requirement, as each component of the system is examined to determine if the system as a whole meets this requirement.

25 P.S. § 3031.7(16)

If the voting system is of a type which provides for the computation and tabulation of votes at the district level, the district component of the automatic tabulating equipment shall include the following mechanisms or capabilities:

(iv) If the number of choices recorded for any office or on any question exceeds the number for which the voter is entitled to vote, it shall reject all choices recorded on the ballot for that office or question, provided, that if used during the period of voting it may also have the capacity to indicate to a voter that he has improperly voted for more candidates for any office than he is entitled to vote for, and in such case it shall have the capacity to permit the voter to mark a new ballot or to forego his opportunity to make such correction.

Polls will then be closed, and reports will be generated to verify the total number of voters whose ballots have been tabulated, the total number of votes cast for each candidate whose name appears on the ballot, and the total number of votes cast for, or against, any question appearing on the ballot.

This portion of the test will verify:

25 P.S. § 3031.7(16)

If the voting system is of a type which provides for the computation and tabulation of votes at the district level, the district component of the automatic tabulating equipment shall include the following mechanisms or capabilities:

(v) It shall be equipped

ii) with an element which generates a printed record at the finish of its operation of the total number of voters whose ballots have been tabulated, the total number of votes cast for each candidate whose name appears on the ballot, and the total number of votes cast for, or against, any question appearing on the ballot.

Central Location

The OVCS will be powered up and polls will be opened, producing a zero report to verify all memory registers are empty and no votes are yet cast.

This portion of the test will verify:

25 P.S. § 3031.7(16)

v) It shall be equipped

i) with an element which generates a printed record at the beginning of its operation which verifies that the tabulating elements for each candidate position and each question and the public counter are all set to zero

The same ballots that are hand marked, as well as the OVI produced ballots will be scanned through the OVCS. Ballots will be voted in English and Spanish. It will be verified that a voter of a particular party is able to cast votes for candidates of other parties. When voters select a Straight Party option, the marking methods will be verified to follow the Pennsylvania Straight Party Method. Write-in candidates will be voted as well. Contests displayed to the voter on the ballot are only those contests in which the voter is entitled to vote. Overvotes will be scanned and will be verified to not be counted as valid selections. Undervoted contests will be verified to be allowed.

This portion of the test will verify:

25 P.S. § 3031.1

The system shall provide for a permanent physical record of each vote cast.

25 P.S. § 3031.7(2)

Provides facilities for voting for such candidates as may be nominated and upon such questions as may be submitted.

25 P.S. § 3031.7(3)

i) Permits each voter, at other than primary elections, to vote a straight political party ticket by one mark or act and,

ii) by one mark or act, to vote for all the candidates of one political party for presidential electors and,

iii) by one mark or act, to vote for all the candidates of one political party for every office to be voted for, and

iv) every such mark or act shall be equivalent to and shall be counted as a vote for every candidate of the political party so marked including its candidates for presidential electors,

v) except with respect to those offices as to which the voter has registered a vote for individual candidates of the same or another political party or political body, in which case the automatic tabulating equipment shall credit the vote for that office only for the candidate individually so selected, notwithstanding the fact that the voter may not have individually voted for the full number of candidates for that office for which he was entitled to vote.

25 P.S. § 3031.7(4)

Permits each voter, at other than primary elections, to vote a ticket selected from the nominees of any and all political parties, from the nominees of any and all political bodies, and from any persons whose names are not in nomination and do not appear upon the official ballot.

25 P.S. § 3031.7(5)

Permits each voter to vote for any person and any office for whom and for which he is lawfully entitled to vote, whether or not the name of such person appears upon the ballot as a candidate for nomination or election.

25 P.S. § 3031.7(6)

i)Permits each voter to vote for as many persons for any office as he is entitled to vote for and to vote for or against any question upon which he is entitled to vote.

ii)precludes each voter from voting or from having his vote tabulated for any candidate, or upon any question, for whom or upon which he is not entitled to vote.

25 P.S. § 3031.7(8)

i)Precludes each voter from voting or from having his vote tabulated more than once for any candidate for the same office or;

ii) upon any question,

ii) except in districts and for offices where cumulative voting is authorized by law

Note that **OVS 1.3.0.2.A** does not support cumulative voting.

25 P.S. § 3031.7(10)

If it is of a type that uses paper ballots or ballot cards to register the vote and automatic tabulating equipment to compute such votes,

ii) the system shall provide that a voter who spoils his ballot may obtain another ballot; any ballot thus returned shall be immediately cancelled and at the close of the polls shall be enclosed in an envelope marked "Spoiled" which shall be sealed and returned to the county board.

25 P.S. § 3031.7(11)

i) Is suitably designed for the purpose used,

ii) is constructed in a neat and workmanlike manner of durable material of good quality,

iii) is safely and efficiently useable in the conduct of elections and, with respect to the counting of ballots cast at each district,

iv) is suitably designed and equipped to be capable of absolute accuracy, which accuracy shall be demonstrated to the Secretary of the Commonwealth.

25 P.S. § 3031.7(13)

When properly operated, records correctly and computes and tabulates accurately every valid vote registered.

Note that this represents a partial verification of this requirement, as each component of the system is examined to determine if the system as a whole meets this requirement.

25 P.S. § 3031.7(17)

If the voting system is of a type which provides for the computation and tabulation of all votes at a central counting center or if it provides for the tabulation of district totals at such a central counting center, the central automatic tabulating equipment shall include the following mechanisms or capabilities:

(ii) If the number of choices for any office or on any question exceeds the number for which the voter is entitled to vote, it shall reject all choices recorded on the ballot for that office or question.

(iii) It shall have a means by which to verify that the counters for each candidate position and for each question are all set to zero.

Tallying and Reporting

Election data will be taken from the OVO and OVCS and read into the OCS. The data will then be tallied and reports will be generated. Results will then be verified.

This portion of the test will verify:

25 P.S. § 3031.7(13)

When properly operated, records correctly and computes and tabulates accurately every valid vote registered.

Note that this represents a partial verification of this requirement, as each component of the system is examined to determine if the system as a whole meets this requirement.

25 P.S. § 3031.7(17)

If the voting system is of a type which provides for the computation and tabulation of all votes at a central counting center or if it provides for the tabulation of district totals at such a central counting center, the central automatic tabulating equipment shall include the following mechanisms or capabilities:

(ii) If the number of choices for any office or on any question exceeds the number for which the voter is entitled to vote, it shall reject all choices recorded on the ballot for that office or question.

(iii) It shall have a means by which to verify that the counters for each candidate position and for each question are all set to zero and shall be able to generate a printed record of each election district showing the total number of voters whose ballots have been tabulated, the total number of votes cast for each candidate whose name appears on the ballot, and the total number of votes cast for, or against, any question appearing on the ballot. It may also be capable of generating cumulative election reports.

4   Considerations of the Examination

The following requirements within Article XI-A of the Pennsylvania Election Code, sections 1101-A to 1122-A, 25 P.S. §§ 3031.1 – 3031.22. are not applicable to the current examination, as each deals with non-functional testing aspects of acquisition, use and maintenance aspects of a voting, that a jurisdiction would be tasked with following:

> 25 P.S. § 3031.2, 25 P.S. § 3031.3, 25 P.S. § 3031.4, 25 P.S. § 3031.6,
> 25 P.S. § 3031.8, 25 P.S. § 3031.9, 25 P.S. § 3031.10, 25 P.S. § 3031.11,
> 25 P.S. § 3031.12, 25 P.S. § 3031.13, 25 P.S. § 3031.14, 25 P.S. § 3031.15,
> 25 P.S. § 3031.16, 25 P.S. § 3031.18, 25 P.S. § 3031.19, 25 P.S. § 3031.20,
> 25 P.S. § 3031.21, 25 P.S. § 3031.22

Items of note include:

For election code 25 P.S. § 3031.17, which addresses the ability of the jurisdiction to conduct a statistical recount if needed, during testing it will be verified that the ballots utilized by the voting system allow for recounts to occur.

The Unisyn OVS 1.3.0.2.A voting system does not support Cumulative voting.

End of Test Plan