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# TEST REPORT

## NATIONAL CERTIFICATION TEST REPORT FOR CERTIFICATION TESTING OF THE UNISYN VOTING SOLUTIONS, INC OPENELECT VOTING SYSTEM VERSION 1.1

for

Unisyn Voting Solutions, Inc.  
 2310 Cousteau Court  
 Vista, CA 92018

STATE OF ALABAMA }  
 COUNTY OF MADISON }

Robert D. Hardy, Department Manager, being duly sworn, deposes and says:  
 The information contained in this report is the result of complete and carefully conducted testing and is to the best of his knowledge true and correct in all respects.

*Robert Hardy*

SUBSCRIBED and sworn to before me this 29 day of Feb 20 12

*Sandra A. Daniel*

Notary Public in and for the State of Alabama at Large

My Commission expires June 2, 2015

Wyle shall have no liability for damages of any kind to person or property, including special or consequential damages, resulting from Wyle's providing the services covered by this report.


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**TABLE OF CONTENTS**

|   | <u>Page No.</u> |
|---|-----------------|
| <b>1.0 INTRODUCTION.....</b>                        | <b>1</b>        |
| 1.1 Testing Scope.....                              | 1               |
| 1.2 Test Report Overview .....                      | 1               |
| 1.3 Customer .....                                  | 1               |
| 1.4 References.....                                 | 2               |
| 1.5 Terms and Abbreviations .....                   | 3               |
| <b>2.0 EQUIPMENT UNDER TEST IDENTIFICATION.....</b> | <b>5</b>        |
| 2.1 Software .....                                  | 5               |
| 2.2 Hardware.....                                   | 6               |
| 2.3 Test Tools/Materials .....                      | 7               |
| <b>3.0 CERTIFICATION TEST BACKGROUND.....</b>       | <b>8</b>        |
| 3.1 Certification Test Process .....                | 8               |
| 3.1.1 Requirements .....                            | 8               |
| 3.1.2 Hardware Configuration and Design .....       | 8               |
| 3.1.3 Software System Functions.....                | 9               |
| 3.2 Scope of Testing.....                           | 9               |
| 3.2.1 Enhancement.....                              | 10              |
| 3.2.2 Hardware.....                                 | 13              |
| <b>4.0 TEST FINDINGS AND RECOMMENDATIONS.....</b>   | <b>15</b>       |
| 4.1 Summary Findings .....                          | 15              |
| 4.1.1 Hardware Testing.....                         | 15              |
| 4.1.1.1 Electromagnetic Radiation Analysis.....     | 15              |
| 4.1.1.2 Electromagnetic Radiation Emissions .....   | 16              |
| 4.1.1.3 Electrostatic Disruption Test.....          | 18              |
| 4.1.1.4 Electromagnetic Susceptibility Test.....    | 19              |
| 4.1.1.5 Conducted RF Immunity Test.....             | 20              |
| 4.1.1.6 Vibration Test .....                        | 21              |
| 4.1.2 System Level Testing.....                     | 21              |
| 4.1.2.1 Volume/Stress Test .....                    | 21              |
| 4.1.2.2 Accuracy Test .....                         | 22              |
| 4.1.2.3 Functional Configuration Audit .....        | 22              |
| 4.1.2.4 Physical Configuration Audit.....           | 23              |
| 4.1.2.5 System Integration Test .....               | 23              |
| 4.1.3 Source Code Review .....                      | 23              |
| 4.1.4 Technical Data Package (TDP) Review.....      | 24              |
| 4.1.5 Security .....                                | 25              |
| 4.1.6 Usability and Accessibility .....             | 25              |
| 4.2 Anomalies and Resolutions.....                  | 25              |
| 4.3 Recommendation for Certification.....           | 27              |

APPENDICES

APPENDIX A – NOTICES OF ANOMALY ..... A-1  
APPENDIX B – PHOTOGRAPHS ..... B-1  
APPENDIX C – HARDWARE TEST RESULTS..... C-1  
APPENDIX D – AS-RUN TEST PLAN ..... D-1  
APPENDIX E - ELECTROMAGNETIC RADIATION ANALYSIS SCANS..... E-1

## 1.0 INTRODUCTION

### 1.1 Testing Scope

This report presents the procedures followed and the results obtained during certification testing of the Unisyn Voting Solutions, Inc., OpenElect Voting System (OVS), Version 1.1. Previous versions of this system, Unisyn OVS, Versions 1.0 and 1.0.1 have been fully tested to the EAC 2005 VVSG. As a result of this testing, Unisyn OVS Versions 1.0 and 1.0.1 were granted certification under EAC Certification Nos. UNS10121966-OE and UNS10121966-OE-WI. Since that time, Unisyn Voting Solutions has incorporated modifications to the certified 1.0 system, resulting in the release of the Unisyn OVS, Version 1.1. These modifications include enhancements to the Ballot Layout Manager, Tabulator, Election Manager, and OpenElect Voting Central Scan applications, as well as enhancements to the OVI and OVO Firmware, security enhancements, and the addition of the Adjudicator application to the OpenElect Central Suite. Unisyn has also introduced a 15" LCD touchscreen as an option for OpenElect Voting Interface (OVI) units. As a result of these modifications, regression testing was required and is documented in this report.

The full system details for the previous test campaigns, including system, performance, security, telecommunication, usability, system verification, and TDP deliverables can be reviewed in the EAC test reports "Unisyn Voting Solutions, Inc., OpenElect Voting System Version 1.0 VSTL Certification Test Report Revision B" and "Unisyn Voting Solutions, Inc., OpenElect Voting System Version 1.0.1 VSTL Certification Test Report Revision A," both of which are listed on the EAC website (listed on [www.eac.gov](http://www.eac.gov)).

### 1.2 Test Report Overview

This test report consists of five main sections (including appendices):

- **1.0 Introduction:** Provides the architecture of the National Certification Test Report (hereafter referred to as Test Report); a brief overview of the testing scope of the Test Report; a list of documentation, customer information, and references applicable to the voting system hardware, software, and this test report.
- **2.0 System Identification and Overview:** Provides information about the system tested that includes the system under test, test support hardware, and specific documentation provided by the vendor used to support testing.
- **3.0 Certification Test Background:** Contains information about the certification test process and the system tested.
- **4.0 Test Findings and Recommendation:** Provides a summary of the results of the testing process.
- **5.0 Appendices:** Information and data supporting testing of the voting system and hardware analysis are included as appendices to this report. This includes: Notices of Anomaly, Test Setup Photographs, Hardware Test Results, and the "As Run" Test Plan.

### 1.3 Customer

Unisyn Voting Solutions, Inc.  
2310 Cousteau Court  
Vista, CA 92018

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## 1.0 INTRODUCTION (Continued)

### 1.4 References

The documents listed below were utilized to perform certification testing.

- Unisyn Voting Solutions, Inc. Purchase Order No. 003251
- Wyle Laboratories' Quotation No. 545/053368/DB
- Wyle Laboratories Certification Test Plan No. T58650-01 Rev A, dated November 17, 2011
- Election Assistance Commission 2005 Voluntary Voting System Guidelines, Volume I, Version 1.0, "Voting System Performance Guidelines", and Volume II, Version 1.0, "National Certification Testing Guidelines," dated December 2005
- Election Assistance Commission Testing and Certification Program Manual, Version 1.0, effective date January 1, 2007
- Election Assistance Commission Voting System Test Laboratory Program Manual, Version 1.0, effective date July 2008
- National Voluntary Laboratory Accreditation Program NIST Handbook 150, 2006 Edition, "NVLAP Procedures and General Requirements (NIST Handbook 150)," dated February 2006
- National Voluntary Laboratory Accreditation Program NIST Handbook 150-22, 2008 Edition, "Voting System Testing (NIST Handbook 150-22)," dated May 2008
- United States 107<sup>th</sup> Congress Help America Vote Act (HAVA) of 2002 (Public Law 107-252), dated October 2002
- Wyle Laboratories' Test Guidelines Documents: EMI-001A, "Wyle Laboratories' Test Guidelines for Performing Electromagnetic Interference (EMI) Testing," and EMI-002A, "Test Procedure for Testing and Documentation of Radiated and Conducted Emissions Performed on Commercial Products"
- Wyle Laboratories' Quality Assurance Program Manual, Latest Revision
- ANSI/NCSL Z540-1, "Calibration Laboratories and Measuring and Test Equipment, General Requirements"
- ISO 10012-1, "Quality Assurance Requirements for Measuring Equipment"
- EAC Requests for Interpretation (listed on [www.eac.gov](http://www.eac.gov))
- EAC Notices of Clarification (listed on [www.eac.gov](http://www.eac.gov))
- EAC Quality Monitoring Program residing on:  
[http://www.eac.gov/testing\\_and\\_certification/quality\\_monitoring\\_program.aspx](http://www.eac.gov/testing_and_certification/quality_monitoring_program.aspx)
- Unisyn Voting Solutions, Inc., OpenElect Voting System Version 1.0 VSTL Certification Test Report Revision B (listed on [www.eac.gov](http://www.eac.gov))
- Unisyn Voting Solutions, Inc., OpenElect Voting System Version 1.0.1 VSTL Certification Test Report Revision A (listed on [www.eac.gov](http://www.eac.gov))
- Unisyn Voting Solutions, Inc., Open Elect Voting System Version 1.1 Technical Data Package

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**1.0 INTRODUCTION (Continued)**

**1.5 Terms and Abbreviations**

Table 1-1 defines all terms and abbreviations applicable to this Test Report.

**Table 1-1 Terms and Abbreviations**

| Term   | Abbreviation | Definition   |
|--|--------------|--|
| Adjudicator                                    | ADJ          | Allows a jurisdiction to evaluate ballots with questionable markings and change them if need, in accordance with the perceived intent of the voter.  |
| Americans with Disabilities Act of 1990        | ADA          | ADA is a wide-ranging civil rights law that prohibits, under certain circumstances, discrimination based on disability.  |
| Ballot Layout Manager                          | BLM          | Unisyn OVS application used to layout ballot information.  |
| Configuration Management                       | CM           | ---  |
| Commercial Off the Shelf                       | COTS         | Commercial, readily available hardware or software.  |
| Direct Record Electronic                       | DRE          | ---  |
| United States Election Assistance Commission   | EAC          | Commission created per the Help America Vote Act of 2002, assigned the responsibility for setting voting system standards and providing for the voluntary testing and certification of voting systems.   |
| Election Manager                               | EM           | Utilizes the election definition file from the Ballot Layout Manager, adds jurisdiction voting device specific options and produces the CD used to load the election onto the voting devices and OVCS.   |
| Election Management System                     | EMS          | Within the OpenElect system, the EMS equivalent is OCS.  |
| Election Server                                | ES           | A component of the OCS, the ES updates the system clock and downloads new Election data to the voting devices prior to each election, typically at the warehouse.  |
| Equipment Under Test                           | EUT          | ---  |
| Functional Configuration Audit                 | FCA          | Exhaustive verification of every system function and combination of functions cited in the manufacturer's documentation.   |
| Help America Vote Act                          | HAVA         | Act created by United States Congress in 2002.   |
| National Institute of Standards and Technology | NIST         | Government organization created to promote U.S. innovation and industrial competitiveness by advancing measurement science, standards, and technology in ways that enhances economic security and improves our quality of life.  |
| OpenElect Central Suite                        | OCS          | Set of applications supplied by Unisyn to run at the Election Headquarters to support elections on the OVO, OVI, and OVCS systems. Includes: Ballot Layout Manager, Election Manager, Election Server, Tabulator Client, Tabulator Server and Tabulator Reports. In addition, the OCS includes the Software Server (SS) system for updating and validating OVO and OVI (voting device) software. The Adjudicator application allows a Jurisdiction to review and change ballots based on perceived voter intent. |

**1.0 INTRODUCTION (Continued))**

**1.5 Terms and Abbreviations (Continued)**

**Table 1-1 Terms and Abbreviations (Continued)**

| Term                               | Abbreviation     | Definition   |
|------------------------------------|------------------|--|
| OpenElect Voting Central Scan      | OVCS             | A bulk scanner solution at the Central Site, used for casting provisional and mail-in ballots; can also be used to perform recounts.   |
| OpenElect Voting Interface         | OVI              | Used as an ADA solution and early voting device.   |
| OpenElect Voting Optical Scan      | OVO              | Scanning and tabulating voting device located at the precinct and used during early voting.  |
| OpenElect Voting System            | OVS              | The Unisyn voting system submitted for certification testing.  |
| Personal Computer                  | PC               | Computer component of the OpenElect Voting System  |
| Physical Configuration Audit       | PCA              | Review by accredited test laboratory to compare voting system components submitted for certification testing to the manufacturer's technical documentation, and confirmation the documentation meets national certification requirements. A witnessed build of the executable system is performed to ensure the certified release is built from tested components. |
| Quality Assurance                  | QA               | ---  |
| Software Server                    | SS               | Updates and validates voting device client software.   |
| Specimen Under Test                | SUT              | ---  |
| Tabulator                          | TAB              | The Tabulator receives and consolidates election results from the counted OVO and OVCS ballots that have been uploaded by the Tabulator Client (in the case of OVO results) and directly by the OVCS. The Tabulator stores the vote data in the database, provides a status for uploaded vote data and handles Rank Choice Voting functionality.                   |
| Tabulator Client                   | TC               | Retrieves vote files from Transport Media devices and provides that data to the tabulator.   |
| Technical Data Package             | TDP              | Manufacturer documentation related to the voting system required to be submitted as a precondition of certification testing.   |
| Tabulator Reports                  | TR               | Accesses data from the Tabulator database to generate the necessary unofficial and official reports.   |
| Uninterruptible Power Supply       | UPS              | ---  |
| Voluntary Voting System Guidelines | EAC 2005<br>VVSG | Published by the EAC, the third iteration of national level voting system standards.   |
| Wyle Operating Procedure           | WoP              | Wyle Test Method or Test Procedure   |

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