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NYSBOE ES&S Secondary PCA Document Review Report

1.0 Introduction

In previous certification efforts for NYSBOE, SLI reviewed all documents provided to the state for compliance to the requirements defined in the following standards:

- VVSG 2005 (Volume I and Volume II)
- 2011NYElectionLaw.pdf
- 6210Regulations09052008.pdf
- BMD Requirements.pdf
- NYS_voting_systems_standards-4-20(6209).pdf
- havalaw.pdf

Since the initial certification effort, Election Systems and Software (ES&S) has made changes to their system which have been reviewed for conformance against the VVSG 2005 requirements by Wyle Labs. As contracted by NYSBOE, SLI has conducted a review of the documentation submitted in the 2012 0716 D ESS TDP for conformance against the NYS 6209 Regulations that were not included in the initial review. This review was completed in July 2012.

ES&S subsequently submitted new TDP's (20120802 and 20120822) containing updates to some of the submitted documentation. As contracted by NYSBOE, SLI has conducted a secondary PCA documentation review of the updated documents for conformance against the NYS 6209 Regulations that were not included in the initial review.



2.0 PCA Documents Reviewed

The following is a list of the documents in the supplied 2012 0802 D ESS TDP and 2012 0822 D ESS TDP that were reviewed by SLI against the NYS 6209 Regulations.

| Document Name | File Name |
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| SYSTEM HARDWARE SPECIFICATION | SYSTEM HARDWARE SPECIFICATION |
| AutoMARK System Hardware Overview, Revision 3, 6/21/2012 | AutoMARK_ESS_System_Hardware_Overview_AQS-18-5002-000-S.pdf |
| AutoMARK System Hardware Specification, Revision 3, 6/21/2012 | AutoMARK ESS System Hardware Specification AQS-18-5000-001-F.pdf |
| ES&S System Hardware Specification DS200 ES&S Voting System v. 5.0 Print Date June 21, 2012 | EVS5001_SHS00_DS200.pdf |
| ES&S System Hardware Specification DS850 ES&S Voting System v. 5.0.0.1 Print Date June 21, 2012 | EVS5001_SHS00_DS850.pdf |
| SOFTWARE DESIGN AND SPECIFICATION | SOFTWARE DESIGN AND SPECIFICATION |
| AutoMARK™ BALLOT IMAGE PROCESSING SPECIFICATIONS Revision 4 – 6/20/2012 | AutoMARK ESS Ballot Image Processing Specification AQS-18-5002-003-S.pdf |
| AutoMARK™ Ballot Scanning and Printing Specification - Revision 4 – 6/21/2012 | AutoMARK ESS Ballot Scanning and Printing Specification AQS – 18-5002-007-S.pdf |
| AutoMARK™ DRIVER APPLICATION PROGRAMING INTERFACE (API) SPECIFICATIONS - Revision 4 – 6/20/2012 | AutoMARK ESS Driver API Specification AQS – 18-5000-002-F.pdf |
| AUTOMARK™ EMBEDDED DATABASE INTERFACE SPECIFICATION - Revision 4 – 6/21/2012 | AutoMARK ESS Embedded Database Interface Specification AQS-18-5002-005-S.pdf |
| AutoMARK Graphical User Interface Design Specifications - Revision 4 – 6/21/2012 | AutoMARK ESS GUI Design Specifications AQS-18-5001-005-R.pdf |
| AutoMARK Operating Software (AMOS) Design Specifications - Revision 4 – 6/21/2012 | AutoMARK ESS Operating Software Design Specifications AQS-18-5001-002R.pdf |
| AutoMARK Operations and Diagnostic Log Specifications - | AutoMARK ESS Operations and Diagnostic Log Specs AQS-18-5002-004-S.pdf |



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| Revision 4 – 6/21/2012 | |
| AutoMARK Programming Specifications Details - Revision 4 – 6/21/2012 | AutoMARK ESS Programming Specifications Details AQS-18-5001-011-R.pdf |
| AutoMARK Software Design Specifications - Revision 4 – 6/21/2012 | AutoMARK ESS Software Design Spec AQS-18-5001-004-S.pdf |
| AutoMARK Software Development Environment Specifications - Revision 4 – 6/21/2012 | AutoMARK ESS Software Development Environment AQS-18-5001-006-R.pdf |
| AutoMARK Software Diagnostics Specification - Revision 4 – 6/21/2012 | AutoMARK ESS Software Diagnostics Specifications AQS-18-5000-004-F.pdf |
| AutoMARK™ Software Standards Specification - Revision 4 – 6/21/2012 | AutoMARK ESS Software Standards Specification AQS-18-4000-000-S.pdf |
| AutoMARK™ VAT Software Design and Specifications – Overview Version Number 1.8 June 20, 2012 | EVS5001_SDS00_AutoMARK SDS Overview.pdf |
| ES&S Software Design Specifications DS200 ES&S Voting System 5.0.0.1 Initial Draft June 21, 2012 | EVS5001_SDS00_DS200.pdf |
| ES&S Software Design Specifications DS850 ES&S Voting System 5.0.0.0 June 21, 2012 | EVS5001_SDS00_DS850.pdf |
| DS200 Software Design and Specifications – Appendix 1 DS200 Flowcharts Digital Scan 200 EVS5001_SDS00_DS200 Initial Draft 6/12/2012 | EVS5001_SDS00_DS20001_Flowcharts.pdf |
| Appendix 2 DS200 Report Examples Digital Scan 200 EVS5001_SDS00_DS200 Initial Draft 6/12/2012 | EVS5001_SDS00_DS20002_Reports.pdf |
| ES&S Voting System 5001_SDS00_DS20005_System Messages.XLS Appendix 5 | EVS5001_SDS00_DS20005_System Messages.pdf |
| Appendix 6 DS200 Results | EVS5001_SDS00_DS20006_Results Media XMLs.pdf |



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| Media XMLs Digital Scan 200 EVS5001_SDS_DS200 Initial Draft 6/13/2012 | |
| Appendix 1 ElectionWare Framework Programming Details and Interface Description ES&S Voting System v. 5.0.0.1 Initial release 4/27/2012 | EVS5001_SDS00_ElectionWare01_EW Specification and Interfaces.pdf |
| Appendix 2 Paper Ballot Module Programming Details and Interface Description ES&S Voting System v. 5.0.0.1 Initial release 4/27/2012 | EVS5001_SDS00_ElectionWare02_PB Specification and Interfaces.pdf |
| ES&S Election Voting System 5001 | EVS5001_SDS00_ElectionWare05_System Process Flowchart.pdf |
| ES&S Software Design Specifications ElectionWare Appendix 7: ElectionWare PostgreSQL Table and Field Descriptions ES&S Voting System v. 5.0.0.1 August 8, 2012 | ElectionWare07_Readme.docx |
| Appendix 8 ElectionWare Reports ES&S Voting System v. 5.0.0.1 Initial TDP Submission 4/27/2012 | EVS5001_SDS00_ElectionWare08_Reports.pdf |
| ES&S Software Design Specifications ElectionWare ES&S Voting System v. 5.0.0.1 June 26, 2012 | EVS5001_SDS00_ElectionWare.pdf |
| ES&S Software Design Specifications ERM Appendices ES&S Voting System 5.0.0.1 June 21, 2012 | EVS5001_SDS00_ERM01_Appendices.pdf |
| ES&S Software Design Specifications ERM ES&S Voting System 5.0.0.1 June 21, 2012 | EVS5001_SDS00_ERM.pdf |
| ES&S Software Design Specifications Event Log Service ES&S Voting System 5.0.0.1 | EVS5001_SDS00_UELS.pdf |



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| June 21, 2012 | |
| SYSTEM TEST AND VERIFICATION | SYSTEM TEST AND VERIFICATION |
| Voting System Test Plan ES&S Voting System 5.0.0.1 Initial Draft June 21, 2012 | EVS5001_STP00.pdf |
| ES&S AutoMARK Voter Assist Terminal System Test and Verification Procedures Version 1.8.1.0 February 14, 2012 | EVS5001_TC00_AutoMARK.pdf |
| DS200 Test Cases Version Number 2.7.0.0 February 14, 2012 | EVS5001_TC00_DS200.pdf |
| DS850 Test Case Specifications Product Version 2.4.0.0 February 15, 2012 | EVS5001_TC00_DS850.pdf |
| ElectionWare Design System Test and Verification Procedures ES&S Voting System version 5.0.0.1 June 16, 2012 | EVS5001_TC00_Electionware02_Design.pdf |
| ElectionWare [Deliver] System Test and Verification Procedures Version 4.1.0.0 February 21, 2012 | EVS5001_TC00_Electionware03_Deliver.pdf |
| ElectionWare Results / Acquire / Produce System Test and Verification Procedures Version 4.1.0.0 February 3, 2012 | EVS5001_TC00_Electionware04_Resolve.pdf |
| ElectionWare DEFINE [Home] [Capture] [Element Library] System Test and Verification Procedures Version 4.1.0.1 April 30, 2012 | EVS5001_TC00_Electionware_Define.pdf |



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| <p>ElectionWare MANAGE [Setup] System Test and Verification Procedures Version 4.1.0.0 February 13, 2012</p> | <p>EVS5001_TC00_Electionware_Manage.pdf</p> |
| <p>Election Reporting Manager / ERM Product Test Cases ES&S Voting System 5.0.0.1 Version 8.6.0.0e February 6, 2012</p> | <p>EVS5001_TC00_ERM.pdf</p> |
| <p>SYSTEM SECURITY SPECIFICATION</p> | <p>SYSTEM SECURITY SPECIFICATION</p> |
| <p>AutoMARKTM SYSTEM SECURITY SPECIFICATIONS Revision 4 December 13, 2011</p> | <p>AutoMARK ESS System Security Specification AQS-18-5002-001-S.pdf</p> |
| <p>Voting System Security Specification ES&S Voting System 5.0.0.1 Initial Draft June 26, 2012</p> | <p>EVS5001_SSS00.pdf</p> |
| <p>Jurisdiction Security Procedures Election Systems and Software Version 1.0.0.1 May 2, 2011</p> | <p>EVS5001_SSS01_JSP Template.pdf</p> |
| <p>Election Systems & Software Hardening Procedures For the Election Management System PC ES&S Voting System 5.0.0.1 Initial Draft June 26, 2012</p> | <p>EVS5001_SSS02_Hardening Procedures.pdf</p> |
| <p>Election Systems & Software Voting System Security Best Practices for Physically Securing ES&S Equipment ES&S Voting System 5.0.0.1 Initial Draft June 26, 2012</p> | <p>EVS5001_SSS07_PhysEquipmentSecurityBestPract.pdf</p> |
| <p>Election Systems & Software Quick Hash Procedure For the DS200 December 13, 2011</p> | <p>EVS5001_SSS02.06_DS200Quick Hash Procedure.pdf</p> |
| <p>Security Script Description for</p> | <p>EVS5001_SSS02.01_EMS_PC_SecScriptDesc.pdf</p> |



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| <p style="text-align: center;"> the Election Management System PC ES&S Voting System 5.0.0.1 Initial Draft June 21, 2012 </p> | |
| <p style="text-align: center;"> Election Systems & Software Quick Hash Procedure For the DS850 Initial Draft 6/26/2012 </p> | <p>EVS5001_SSS02.07_DS850Quick Hash Procedure.pdf</p> |
| <p style="text-align: center;"> Election Systems & Software Quick Hash Procedure For the EMS Workstation Initial Draft June 26, 2012 </p> | <p>EVS5001_SSS02.7_EMSWorkstation Quick Hash Procedure.pdf</p> |
| <p style="text-align: center;"> Election Systems & Software Voting System Validation – File Listing DS200 ES&S Voting System 5.0.0.1 Initial Draft June 26, 2012 </p> | <p>EVS5001_SSS03_Voting System Validation Guide01_File Listing_DS200.pdf</p> |
| <p style="text-align: center;"> Election Systems & Software Voting System Validation – AutoMARK File Listing ES&S Voting System 5.0.0.1 Initial Draft June 26, 2012 </p> | <p>EVS5001_SSS03_Voting System Validation Guide02_File Listing_AutoMARK.pdf</p> |
| <p style="text-align: center;"> Election Systems & Software Unity Workstation Validation – ElectionWare File Listing ES&S Voting System 5.0.0.1 Initial Draft June 26, 2012 </p> | <p>EVS5001_SSS03_Voting System Validation Guide04_File Listing_ElectionWare.pdf</p> |
| <p style="text-align: center;"> Election Systems & Software Voting System Validation – Removable Media Service File Listing ES&S Voting System 5.0.0.1 Initial Draft June 26, 2012 </p> | <p>EVS5001_SSS03_Voting System Validation Guide05_File Listing_RMS.pdf</p> |
| <p style="text-align: center;"> Election Systems & Software Voting System Validation– VAT Preview File Listing ES&S Voting System 5.0.0.1 Initial Draft June 26, 2012 </p> | <p>EVS5001_SSS03_Voting System Validation Guide07_File Listing_VATPreview.pdf</p> |



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| Election Systems & Software Voting System Validation – ERM File Listing ES&S Voting System 5.0.0.1 Initial Draft June 26, 2012 | EVS5001_SSS03_Voting System Valildation Guide08_File Listing_ERM.pdf |
| Election Systems & Software Voting System Validation – File Listing DS850 ES&S Voting System 5.0.0.1 Initial Draft June 21, 2012 | EVS5001_SSS03_Voting System Validation Guide09_File Listing_DS850.pdf |
| Election Systems & Software Voting System Validation – ES&S Event Log Service File Listing ES&S Voting System 5.0.0.0 Initial Draft June 21, 2012 | EVS5001_SSS03_Voting_System_Validation_Guide06_File Listing_ELS.pdf |
| Windows Baseline Settings for EVS version 5.0.0.1 | EVS5001_SSS09_WinOS_SECBaseSettings.pdf |
| Election Systems & Software Development Change Notes ES&S Voting System 5.0.0.1 Initial Draft June 26, 2012 | EVS5001_SSS20_HardeningProcessCngSummary.pdf |

3.0 Purpose of Review

The purpose or objective of the Secondary PCA document review was to determine if the updated documentation complies to the 6209 regulations set forth by the state of New York.

3.1 Summary List of Methodology

The following methodology was used by SLI in determining the compliance of the updated documentation to the 6209 NYS Regulations and a sample of the VVSG Vol II Requirements:

- Selected a sample of PCA Document Review categories
- Identified all documents to be reviewed for each category by reviewing the supplied 2012 0802 D ESS TDP
- Performed the PCA Document Review for all 61 documents according to the regulation/requirement/s assigned to each document.



- Logged all discrepancies in the NY-ESS Upgrade Project in Jira.

3.2 Items Not Under Review

The following criteria were removed from the PCA Document Review conducted by SLI since Wyle's review focused on the compliance of the documentation to the VVSG 2005 Requirements

1. VVSG Volume I Requirements
2. VVSG Volume II Requirements

3.3 List of additional Regulations used by SLI in the Enhanced Review

The following 6209 NYS Regulations were determined to have not been included in the initial review:

1. 6209.6.D.2bii
2. 6209.6.D.2biii
3. 6209.6.D.3bii
4. 6209.6.D.3biii
5. 6209.6.D.3biv
6. 6209.6.E.4
7. 6209.6.E.5a
8. 6209.6.E.5b
9. 6209.6.F.3
10. 6209.6.F.3hi
11. 6209.6.F.3hii
12. 6209.6.F.3hiii
13. 6209.6.F.3hiv
14. 6209.6.F.3n2
15. 6209.6.F.3n3
16. 6209.6.F.3n4
17. 6209.6.F.3si



- 18. 6209.6.F.3sii
- 19. 6209.6.F.3siii
- 20. 6209.6.F.4ii
- 21. 6209.6.F.8

4.0 Overview of Findings Report

4 categories were identified for the regulations under review:

- 1 System Hardware Specification
- 2 Software Design and Specification
- 3 System Test and Verification
- 4 System Security Specification

A total of 61 documents were reviewed for 21 NYS Regulations. 7 discrepancies were found in the following 4 categories:

- 1 System Hardware Specifications - 2
- 2 Software Design & Specifications - 2
- 3 System Test & Verification - 2
- 4 System Security Specifications – 1

The discrepancies found were cited for the following NYS Regulations:

- 6209.6.D.3bii
- 6209.6.D.3biii
- 6209.6.F.3n2
- 6209.6.F.3siii
- 6209.6.F.3
- 6209.6.D.2bii
- 6209.6.D.2biii



5.0 Conclusion

SLI has completed the Secondary PCA Document Review for the ES&S voting system. The 7 discrepancies found during the PCA Document Review were detailed in the open items spread sheet. The open items in the Discrepancy Report have been addressed by ES&S in their latest TDP submission (2012 0822 D ESS). There are no remaining open items.