STATE OF NEW YORK

STATE BOARD OF ELECTIONS

Evaluation Of Prior Work

For

NYSBOE Voting System Examination And Certification Testing

(Deliverable 4)

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SysTest labs®

Document Revision History

The following is a record of the changes that have occurred in this document since the time of its original submission.

Version	*Change Description*	*Author(s)*	*Date*
1.0	❑ Initial draft	Rex Reed Jennifer Garcia James “Jet” Henry Al Backlund	15-May-08
1.1	❑ Update for the addition of Blowing Dust and Rain Exposure Test Results for ES&S	James ‘Jet’ Henry	29-May-08

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1 PROJECT DESCRIPTION

1.1 Project Overview

Project Name	NYSBOE Voting System Examination And Certification
NYSBOE Administrative Project Manager	Tarry Breads
NYSBOE Compliance Project Manager	Robert Warren
SysTest Labs Program Manager	Rex Reed, PMP
SysTest Labs Functional Test Managers	Jennifer Garcia and James "Jet" Henry
SysTest Labs Hardware Test Manager	Al Backlund
SysTest Labs Project Director	Glenn Truglio
Project Dates	11-December-2007 through 10-December-2010

1.2 Project Background

The Help America Vote Act of 2002 was approved by Congress to address the issues of timely and accurate elections in the United States. Specifically, the act was established to:

> … "provide funds to States to replace punch card voting systems, to establish the Election Assistance Commission to assist in the administration of Federal elections and to otherwise provide assistance with the administration of certain Federal election laws and programs, to establish minimum election administration standards for States and units of local government with responsibility for the administration of Federal elections, and for other purposes."

Congress subsequently allocated $ 3.6 billion to support the Act. These funds are being allocated to states for a number of purposes – especially to update voting systems (ballot creation, vote recording, vote tallying, and voter reporting) and to establish a central, statewide list of all registered voters in each state.

New York State has passed its own HAVA legislation in July 2005 mirroring many requirements of the Federal legislation.

Before any voting system may be eligible for purchase in New York State (NYS), it must be certified by the New York State Board Of Elections (NYSBOE) that such system(s) meet the requirements of the New York State election law (Section 6209 of Subtitle V of Title 9 of the Official Compilation of Codes, Rules and Regulations of the State of New York) and the federal 2005 Voluntary Voting System Guidelines (2005 VVSG).

SysTest Labs has been contracted by the NYSBOE to act as the State's federally certified Independent Testing Authority (ITA) for the purpose of examination and testing for the State Board's certification, decertification, and re-certification of voting systems.

1.3 Project Purpose and Objectives

The purpose of the NYSBOE Voting System Examination and Certification Testing project is the examination and testing of voting systems that have been submitted to purchase for New York State. The objective of this project is to subject each voting system to complete and thorough testing to verify that each system satisfies the standards and requirements of the Election Assistance Commission (EAC) 2005 VVSG, plus all additional requirements specified by New York State Law and 6209 regulations.

2 PURPOSE OF DELIVERABLE 4 – EVALUATION OF PRIOR WORK

2.1 Deliverable 4 – Evaluation of Prior Work

This report has been produced to satisfy the requirements for Deliverable 4 – Evaluation of Prior Work.

As defined in the RFP: "The ITA will complete an evaluation of the prior Certification Testing documentation developed by Ciber, Inc. and Wyle laboratories. Existing test plans, results and other relevant documentation should be used wherever possible to avoid duplication of effort. Documents in scope for this review include but are not limited to Functional and Security Master Test Plans, Environmental test plans, detailed individual vendor specific test plans, test results, and anomaly reports. The ITA will develop and present an evaluation report that documents the results of the evaluation including any recommendations for re-use.".

The following sections define the scope of this evaluation and the criteria used for each analysis.

2.1.1 Review of Prior ITA Test Cases and Results

SysTest Labs evaluated the prior ITA testing that was prepared by the previous NYSBOE ITA. SysTest Labs conducted an analysis of the test artifacts from Ciber, Inc. and Wyle Laboratories that were supplied to SysTest Labs for the Lot 1 test effort. These artifacts include all prior ITA test plans, test reports, test results, as well as any detailed information regarding the configurations and versions of each component within the voting system.

The analysis consisted of the following activities:

- Documentation reviews and assessments
- Source code reviews and assessments
- Test plans and test cases
- Hardware testing results and reports
- Functional testing results and reports

The results of this evaluation were used to determine:

- If any of the prior ITA's test results may be leveraged for use with the current Vendor test effort.
- If any of the prior ITA's test plans or test cases may be leveraged for use with the current Vendor test effort.

2.1.2 Review of Other State Verification Testing or Other VSTL Certification Testing

SysTest Labs evaluated the prior ITA testing that was conducted by other States and/or VSTL organizations. SysTest Labs conducted an analysis of the test artifacts from the previous testing that were supplied to SysTest Labs by the Vendor for the Lot I test effort. These artifacts include all prior verification test plans, test reports, test results, as well as any detailed information regarding the configurations and versions of each component within the voting system.

The analysis consisted of the following activities:

- Documentation reviews and assessments
- Source code reviews and assessments
- Test plans and test cases
- Hardware testing results and reports
- Functional testing results and reports
- State security reports

The results of this evaluation were used to determine:

- If any of the prior State or VSTL test results may be leveraged for use with the current Vendor test effort.
- If any of the prior State or VSTL test plans or test cases may be leveraged for use with the current Vendor test effort.

2.1.3 Review of Prior and/or Current SysTest Labs VSTL Engagements

SysTest Labs maintains professional relationships with the NYSBOE Vendors and has conducted, or is currently performing, VSTL certification testing for each Vendor. SysTest Labs has evaluated the test efforts for each vendor and conducted an analysis of the test artifacts from prior and current test efforts. These artifacts include all prior and current verification test plans, test reports, test results, as well as any detailed information regarding the configurations and version of each component within the voting system.

The analysis consisted of the following activities:

- Documentation reviews and assessments
- Source code reviews and assessments
- Test plans and test cases
- Hardware testing results and reports
- Functional testing results and reports

The results of this evaluation were used to determine:

- If any of the prior or current SysTest Labs' test results may be leveraged for use with the current Vendor test effort.
- If any of the prior or current SysTest Labs' test plans or test cases may be leveraged for use with the current Vendor test effort.

3 EVALUATION OF PRIOR WORK - SEQUOIA VOTING SYSTEMS / DOMINION VOTING

The following sections define the prior and/or current work for Sequoia/Dominion that was evaluated by SysTest Labs for use with the NYSBOE Voting System Examination and Certification Testing project.

The current hardware and software that has been delivered to SysTest Labs for the Lot I testing is:

- Democracy Suite (EMS core system, application Server, Database Server, election event designer, results, Tally & Release, Results publishing module, Democracy Suite Hardware)
- ImageCast Precinct Optical Scan system with ADA module. Model Number: 2.0

Firmware and Software Release information:

- Democracy Suite Election Event Designer (EED) 2.0
- Democracy Suite Results, Tally & Release (RTR) 2.0

3.1 Review of Prior ITA Test Cases and Results

3.1.1 Document Reviews and Assessments

SysTest Lab did not receive artifacts from Ciber, Inc. and Wyle Laboratories containing Documentation Review for the Sequoia Optech Insight Precinct Count Optical Scan system, the Advantage Plus DRE system and the WinEDS Election Management System. However, These systems are not part of the current NYSBOE approved Lot 1 test effort. Therefore, there are no Documentation Reviews that may be leveraged.

3.1.2 Source Code Reviews and Assessments

SysTest Lab received artifacts from Ciber, Inc. and Wyle Laboratories containing Source Code Review for the Sequoia Optech Insight Precinct Count Optical Scan system, the Advantage Plus DRE system and the WinEDS Election Management System. These systems are not part of the current NYSBOE approved Lot 1 test effort. Therefore, the Source Code Reviews may not be leveraged.

3.1.3 Test Plans and Test Cases

SysTest Lab received artifacts from Ciber, Inc. and Wyle Laboratories containing Test Plans and Test Cases for the Sequoia Optech Insight Precinct Count Optical Scan system, the Advantage Plus DRE system and the WinEDS Election Management System. These systems are not part of the current NYSBOE approved Lot 1 test effort. Therefore, no Test Plans or Test Cases may be leveraged.

3.1.4 Hardware Test Results and Reports

SysTest Lab received artifacts from Ciber, Inc. and Wyle Laboratories containing hardware test results and reports for the Sequoia Optech Insight Precinct Count Optical Scan system, the Advantage Plus DRE system and the WinEDS Election Management System. These items are not part of the current NYSBOE approved Lot 1 test effort. Therefore, the hardware test results and reports will not be leveraged.

3.1.5 Functional Test Results and Reports

There were no Test Results and/or Reports provided by Ciber, Inc., Inc. and Wyle Laboratories for the approved Lot I voting systems. Therefore, no Test Results or Reports may be leveraged.

3.1.6 Evaluation

The Sequoia Optech Insight Precinct Count Optical Scan system, the Advantage Plus DRE system and the WinEDS Election Management System previously under test by the prior NYSBOE ITA, Ciber, Inc. or Wyle Laboratories, are not in-scope for the current Lot I test effort. Therefore, SysTest labs cannot leverage any of the previous NYSBOE ITA artifacts.

3.2 Review of Other State Verification Testing and/or VSTL Compliance Testing

3.2.1 Document Reviews and Assessments

SysTest Labs has received no documentation from Sequoia/Dominion that may be used to verify that any previous State or VSTL compliance testing has been completed and that could be leveraged for the NYSBOE Voting System Examination and Certification Testing project.

3.2.2 Source Code Reviews and Assessments

SysTest Labs has received no source code reviews and assessments from Sequoia/Dominion that may be used to verify any previous State or VSTL compliance testing that has been completed and could be leveraged for the NYSBOE Voting System Examination and Certification Testing project.

3.2.3 Test Plans and Test Cases

SysTest Labs has received no Test Plans and/or Test Cases from Sequoia/Dominion that may be used to verify any previous State or VSTL compliance testing that has been completed and could be leveraged for the NYSBOE Voting System Examination and Certification Testing project.

3.2.4 Hardware Test Results and Reports

SysTest Labs has received no Hardware Test Results or Reports from Sequoia/Dominion that may be used to verify any previous State or VSTL compliance testing that has been completed and could be leveraged for the NYSBOE Voting System Examination and Certification Testing project.

3.2.5 Functional Test Results and Reports

SysTest Labs has received no Functional Test Results or Reports from Sequoia/Dominion that may be used to verify any previous State or VSTL compliance testing that has been completed and could be leveraged for the NYSBOE Voting System Examination and Certification Testing project.

3.2.6 State Security Reports

SysTest Labs has completed a review of state security test reports developed by RABA, SAIC, the States of California and Ohio, as well as others. The purpose of this evaluation was to search for, and identify, known security risks and vulnerabilities that will be included in the Lot I test effort.

3.2.7 Evaluation

The Review of Other State Verification Testing and/or VSTL Compliance Testing has determined that there are no artifacts to review and therefore, there is nothing to leverage for the NYSBOE Voting System Examination and Certification Testing Project.

3.3 Review of Prior and/or Current SysTest Labs VSTL Engagements

3.3.1 Document Reviews and Assessments

Table 1 –Dominion Prior EAC Document Review VS Current NYSBOE Review, identifies the documents that were reviewed as part of the EAC review process and compares that to the documentation provided for the NYSBOE Lot I test effort. The level of effort that was required to complete the review is identified per document.

- Major – this is a complete document review. Very little, if anything, can be used from the prior review.
- Minor – the document was changed up to 40%. Much of the prior review can be used, but it will take additional time depending on the extent and nature of the changes.
- None – there are no changes between the documents. Review is required to check against the NYS specific Laws and Requirements.
- Missing – the NYSBOE TDP document has not been delivered at this time. SysTest cannot make a determination of the level of effort without the document.
- There are 19 documents from the SysTest Labs EAC test effort. Of these, 8 require major reviews, 6 require minor reviews and 5 have no changes.

Table 1 –Dominion Prior EAC Document Review VS Current NYSBOE Review

Dominion EAC Document TDP	*Dominion NYSBOE TDP Docs*	*Review Required:*
Democracy Suite System Configuration Overview (Ver. 2.0.6).pdf	Democracy Suite System Configuration Overview (Ver. 2.0.5).pdf	Major
Democracy Suite EMS Functional Description (Ver 2.0.1).pdf	Democracy Suite EMS Functional Description (Ver 2.0.0).pdf	Major
Democracy Suite EMS Software Design and Specification (Version 2.0.1).pdf	Democracy Suite EMS Software Design and Specification (Version 2.0.1).pdf	Major
Imagecast Precinct Operations Procedures (Ver 1.6).pdf	Imagecast Precinct Operations Procedures (Ver 1.8).pdf	Major
Imagecast Precinct Operations Procedures (Ver 1.8).pdf	Imagecast Precinct Operations Procedures (Ver 1.8).pdf	Major
Democracy Suite Configuration Management Process (Ver 1.3).pdf	Democracy Suite Configuration Management Process (Ver 1.3).pdf	Major
ImageCast Ballot Marker Operator Manual PLAN B January 15 2008.pdf	ImageCast Ballot Marker Operator Manual PLAN B (Ver 1.0).pdf	Major
Democracy Suite EMS EED Users Guide (Ver 2.0).pdf	Democracy Suite EMS EED Users Guide (Ver 2.0).pdf	Major
ImageCast System Hardware Specification (Ver 2.3).pdf	ImageCast System Hardware Specification (Ver 2.1).pdf	Minor
ImageCast System Hardware Characteristics (Ver 1.2).pdf	ImageCast System Hardware Characteristics 1.1.pdf	Minor
Democracy Suite Test and Verification Specification (Ver 1.5).pdf	Democracy Suite Test and Verification Specification (Ver 1.5).pdf	Minor
ImageCast System Maintenance Procedures (Ver 1.2).pdf	Imagecast Central Maintenance Procedures (Ver 1.2).pdf	Minor
Democracy Suite Personnel Deployment and Training Requirements (Ver 1.1).pdf	Democracy Suite Personnel Deployment and Training Requirements (Ver 1.1).pdf	Minor
Democracy Suite Quality Assurance Program (Version 1.4).pdf	Democracy Suite Quality Assurance Program (Version 1.4).pdf	Minor
Democracy Suite Imagecast Precinct Tabulator Functional Specification (Ver 2.3).pdf	Democracy Suite Imagecast Precinct Tabulator Functional Specification (Ver 2.3).pdf	None

Dominion EAC Document TDP	*Dominion NYSBOE TDP Docs*	*Review Required:*
ImageCast Precinct Software Design and Specification (Ver 1.1).pdf	ImageCast Precinct Software Design and Specification (Ver 1.1).pdf	None
Democracy Suite System Security Specification (Version 2.0.0).pdf	Democracy Suite System Security Specification (Version 2.0.0).pdf	None
Democracy Suite EMS System Operations Procedures (Version 2.0.0).pdf	Democracy Suite EMS System Operations Procedures (Version 2.0.0).pdf	None
ImageCast Ballot Marker Operator Manual PLAN A January 15 2008.pdf	ImageCast Ballot Marker Operator Manual PLAN A January 15 2008.pdf	None

3.3.2 Source Code Reviews and Assessments

SysTest Labs has migrated all of the source code, reviews, and assessments from the EAC test effort into the NYSBOE test effort. SysTest Labs recommends leveraging all of the source code review completed for the EAC test effort. The initial EAC Source Code review is 100% complete with discrepancies. Discrepancies were transferred to the NYSBOE project and source code review will continue on all newly delivered code. This leverages the complete source code review from the EAC effort.

3.3.3 Test Plans and Test Cases

2005 VVSG and New York State standards require an expanded level of detail than has previously been required for EAC testing. The SysTest Labs EAC Test Plans and Test Cases have been leveraged as templates and modified as necessary to satisfy the expanded level of detail required.

Approximately 20% of the test plans and test cases already developed have been integrated into the NYSBOE Voting System Specific Test Plans and Test Cases.

3.3.4 Hardware Test Results and Reports

The configuration of the Sequoia/Dominion hardware has changed. Based on the 2205 VVSG standards, these significant modifications negate any previous hardware testing results and reports. Thus, there is no previous hardware testing that may be leveraged for the Lot I test effort.

3.3.5 Functional Test Results and Reports

There are no Functional Test Results and Reports to leverage for the Lot 1 test effort.

3.3.6 Evaluation

Overall, the amount of work that can be leveraged as part of the NYSBOE Lot I test effort is as follows.

- There are 19 documents from the SysTest Labs EAC test effort. Of these 19 documents:
  - 8 will require complete documentation review
  - 6 will require minimal documentation review
  - 5 documents have not changed and SysTest Labs recommends leveraging the results of these reviews
  - All documentation will be reviewed to verify that it satisfies all New York State Laws and 6209 regulations
- SysTest Labs recommends that all the EAC Source Code Review be leveraged. In addition, all source code will be reviewed to verify that it satisfies all New York State Laws and 6209 regulations
- There are no prior Hardware Test Results or Reports that may be leveraged because of the hardware modifications made to the voting system.
- There are no SysTest Labs Functional Test Results or Reports that may be leveraged for the Lot I test effort.

4 EVALUATION OF PRIOR WORK - ELECTION SYSTEMS AND SOFTWARE (ES&S)

The following sections define the prior and/or current work for ES&S that was evaluated by SysTest Labs for use with the NYSBOE Voting System Examination and Certification Testing project.

The current hardware and software that is being delivered to SysTest Labs for the Lot I test effort is:

- Unity New York 2.0.0.0 with AutoMARK 1.4
- intellect DS200 Precinct Based Optical Mark Scanner
- AutoMARK Voter Assist Terminal A200.

Firmware and software release information:

- Intellect DS200 Precinct Based Optical Mark Scanner, Firmware version 2.0.0.0
- AutoMARK voter Assist Terminal, Hardware Revision A200, Firmware version 1.4.
- Election Data Manager 7.9.0.0,
- Digital Scan Image Manager 2.0.0.0,
- ElectionWare 1.0.0.0
- AIMS 1.4
- Election Reporting Manager 8.0.0.0

4.1 Review of Prior ITA Test Cases and Results

SysTest Labs has conducted an analysis of the test artifacts from Ciber, Inc. and Wyle Laboratories that were supplied to us at the beginning of the current project.

4.1.1 Document Reviews and Assessments

SysTest Lab did not receive artifacts from Ciber, Inc. and Wyle Laboratories containing Documentation Review for the ES&S Model 100 Optical Scan system. This system is not part of the current NYSBOE approved Lot 1 test effort. Therefore, there are no Documentation Reviews that may be leveraged.

SysTest Lab did not receive artifacts from Ciber, Inc. and Wyle Laboratories containing Documentation Review for the ES&S AutoMark VAT A200 Ballot Marking Device. This system is in-scope for the current NYSBOE Lot 1 test effort. However, there are no Documentation Reviews that may be leveraged.

4.1.2 Source Code Reviews and Assessments

SysTest Lab received artifacts from Ciber, Inc. and Wyle Laboratories containing Source Code Review for the Unity Election System, Model 100 Optical Scan system, only. The Model 100 systems is not part of the current NYSBOE approved Lot 1 test effort, thus; this Source Code Review may not be leveraged for the Lot I test effort.

4.1.3 Test Plans and Test Cases

SysTest Labs received and evaluated the draft test plan document received from Ciber, Inc. (2 Test Plan – NYS Voting Project Security Verification Test.pdf) for the Model 100 Optical Scan system. This Test Plan is labeled "DRAFT" throughout the document. A final version was not received

SysTest Lab received artifacts from Ciber, Inc. and Wyle Laboratories containing Test Plans and Test Cases for the Model 100 Optical Scan system. This system is not part of the current NYSBOE approved Lot 1 test effort.

Therefore, no Test Plans or Test Cases may be leveraged for the Lot I test effort.

4.1.4 Hardware Test Results and Reports

SysTest Labs received artifacts from Ciber, Inc. and Wyle Laboratories containing hardware test results and reports for the Unity Election System, Model 100 Optical Scan system. This system is not part of the current NYSBOE approved Lot 1 test effort. Therefore, the hardware test results and reports may not be leveraged.

SysTest Labs received and evaluated the draft hardware test report from Ciber, Inc. and Wyle Laboratories (Ciber, Inc. 53965F-03.pdf) for the AutoMark VAT A200. This Test Plan is labeled "DRAFT" throughout the document, thus; SysTest Labs recommends that these hardware test results and report not be leveraged for the Lot I test effort.

4.1.5 Functional Test Results and Reports

There were no Functional Test Results and/or Reports provided by Ciber, Inc., Inc. and Wyle Laboratories for the approved Lot I voting systems. Therefore, no Test Results or Reports may be leveraged.

4.1.6 Evaluation

The ES&S M100 Precinct Count Optical Scan system, previously under test by the prior NYSBOE ITA, Ciber, Inc. or Wyle Laboratories, is not in-scope for the current Lot I test effort. Therefore, SysTest labs may not leverage any of the previous NYSBOE ITA artifacts.

The AutoMark VAT A200 Ballot Marking Device, previously under test by the prior NYSBOE ITA, Ciber, Inc. or Wyle Laboratories, is in-scope for the current Lot I test effort. However, no results from the previous NYSBOE ITA were found that may be leveraged.

4.2 Review of Other State Verification Testing and/or VSTL Compliance Testing

SysTest Labs has received hardware test results documentation from ES&S that may be used to verify the rain and dust testing. Otherwise, SysTest Labs has not received any other previous State or VSTL compliance testing that has been completed and could be leveraged for the NYSBOE Voting System Examination and Certification Testing project.

4.2.1 Document Reviews and Assessments

SysTest Labs has received no documentation from ES&S that may be used to verify that any previous State or VSTL compliance testing has been completed and that could be leveraged for the NYSBOE Voting System Examination and Certification Testing project.

4.2.2 Source Code Reviews and Assessments

SysTest Labs has received no Source Code Reviews and Assessments from ES&S that may be used to verify any previous State or VSTL compliance testing that has been completed and could be leveraged for the NYSBOE Voting System Examination and Certification Testing project.

4.2.3 Test Plans and Test Cases

SysTest Labs has received no Test Plans and Test Cases from ES&S that may be used to verify any previous State or VSTL compliance testing that has been completed and could be leveraged for the NYSBOE Voting System Examination and Certification Testing project.

4.2.4 Hardware Test Results and Reports

SysTest Labs has received Hardware Test Results and Reports from ES&S concerning blowing dust and rain exposure testing performed by Wyle Laboratories.

SysTest Labs recommends the acceptance of the previous hardware environmental testing for the Automark Technical Voter Assist Terminal (VAT) Testing (Automark 52343-01.pdf, July 1, 2005) which includes Blowing Dust, Transit Drop, and Rain Exposure Testing.

SysTest Labs recommends the acceptance of the previous hardware environmental testing for the Intelect DS200 Precinct Ballot Scanner, Storage Case, and Ballot Box Testing (ES S T55350.pdf, February 11, 2008) which includes Blowing Dust and Rain Exposure Testing.

SysTest Labs recommends the acceptance of the previous hardware environmental testing for the Intelect DS200 Precinct Ballot Scanner Testing (ESSFlorida - 54522-01.pdf, May 15, 2007) which includes Blowing Dust and Rain Exposure Testing.

SysTest Labs recommends the above reports be leveraged for the NYSBOE Voting System Examination and Certification Testing project.

4.2.5 Functional Test Results and Reports

SysTest Labs has received no Functional Test Results and Reports from ES&S that may be used to verify any previous State or VSTL compliance testing that has been completed and could be leveraged for the NYSBOE Voting System Examination and Certification Testing project.

4.2.6 State Security Reports

SysTest Labs has completed a review of state security test reports developed by RABA, SAIC, the States of California and Ohio, as well as others. The purpose of this evaluation was to search for, and identify, known security risks and vulnerabilities that will be included in the Lot I test effort.

4.2.7 Evaluation

The AutoMark VAT A200 Ballot Marking Device Hardware Environmental Tests for Blowing Dust, Transit Drop, and Rain Exposure are in-scope for the current Lot I test effort and SysTest Labs recommends the acceptance of this previous hardware testing.

The Intelect DS200 Precinct Ballot Scanner, Storage Case, and Ballot Box Hardware Environmental Tests for Blowing Dust and Rain Exposure are in-scope for the current Lot I test effort and SysTest Labs recommends the acceptance of this previous hardware testing.

4.3 Review of Prior and/or Current SysTest Labs VSTL Engagements

4.3.1 Document Reviews and Assessments

The level of effort that is required to complete the PCA document review is identified per document.

- Major – this is a complete document review. Very little, if anything, can be used from the prior review.
- Minor – the document was changed up to 60%. Much of the prior review can be used, but it will take additional time depending on the extent and nature of the changes.
- None – there are no changes between the documents. Review is required to check against the NYS specific Laws and Requirements.
- Missing – the NYSBOE TDP document has not been delivered at this time. SysTest cannot make a determination of the level of effort without the document.

4.3.1.1 ES&S - Unity

Table 2 - Unity Prior EAC Document Review VS Current NYSBOE Review identifies the ES&S Unity documents that were reviewed as part of the EAC review process and have comparable documentation provided for the NYSBOE Lot I test effort.

There are 37 documents that were identified as part of the Unity TDP. 26 have comparable documents from the EAC test efforts (see Table 2 - Unity Prior EAC Document Review VS Current NYSBOE Review). Of these, 10 require major reviews, 14 require minor reviews, 5 have no changes, and 1 is missing.

Table 2 - Unity Prior EAC Document Review VS Current NYSBOE Review

Dominion EAC Document TDP	*Dominion NYSBOE TDP Docs*	*Review Required:*
ESSIM SFD v.7.7.0.0_11.15.2007	ELECTIONWARE SFD v. 1.0.0.0_01.15.2008	Major
ERM SFD v.7.4.0.0_11.16.2007	ERM SFD v. 8.0.0.0_03.31.2008	Major
ESSIM SDS v.7.7.0.0_11.16.2007	ELECTIONWARE SDS v. 1.0.0.0_02.18.2008	Major
ERM SDS v.7.4.0.0_11.16.2007	ERM SDS v. 8.0.0.0_03.31.2008	Major
DS200 SDS v.1.1.0.0_11.16.2007	DS200 SDS v. 2.0.0.0_02.08.2008	Major
ESSIM SOP v.7.7.0.0_10.15.2007	ELECTIONWARE SOP v. 1.0.0.0_01.15.2008	Major
DS200 SOP v.1.2.0.0_11.8.2007	DS200 SOP v. 2.0.0.0_02.15.2008	Major

Dominion EAC Document TDP	*Dominion NYSBOE TDP Docs*	*Review Required:*
PDTR ESSIM v.7.7.0.0_6.2007	PDTR ELECTIONWARE v. 1.0.0.0_01.15.2008	Major
Configuration Management Plan v.1.1.0.0_6.15.2007	Configuration Management Plan v. 2.0.0.0_01.15.2008	Major
Quality Assurance Program – Software and Firmware v. 1.2.0.0_8.21.2007	QAPII - SWandFW v. 2.0.0.0_1.15.2008	Major
System Overview – Unity 4.0.0.0_11.15.2007	System Overview v. 2.0.0.0_03.27.2008	Minor
EDM SFD v.7.8.0.0_11.16.2007	EDM SFD v.7.9.0.0_12.14.2007	Minor
DS200 SFD v.1.1.0.0_11.16.2007	DS200 SFD v. 2.0.0.0_01.15.2008	Minor
DS200 SHS v. 1.1.0.0_11.16.2007	DS200 SHS v. 2.0.0.0_01.15.2008	Minor
EDM SDS v.7.8.0.0_11.16.2007	EDM SDS v.7.9.0.0_01.15.2008	Minor
ERM SOP v.7.4.0.0_11.16.2007	ERM SOP v. 8.0.0.0_01.15.2008	Minor
DS200 SMM v.1.2.0.0_11.02.2007	DS200 SMM v. 2.0.0.0_01.15.2008	Minor
PDTR v.1.0.0.1_8.20.2007	PDTR v. 2.0.0.0_01.15.2008	Minor
PDTR EDM v.7.8.0.0_6.2007	PDTR EDM v. 2.0.0.0_01.15.2008	Minor
AM SFD v.7.5.0.0_11.15.2007	AM SFD v.7.5.0.0_12.14.2007	Minor
AM SDS v.7.5.0.0_11.16.2007	AM SDS v.7.5.0.0_12.14.2007	Minor
SSS v. 4.0.0.0_11.6.2007	SSSv2.0.0.0_03.31.2008	Minor
JSP Template v. 1.0.0.0_11.16.2007	JSP Template v. 1.0.0.0_1.15.2008	Minor
AM SOP v.7.5.0.0_11.16.2007	AM SOP v.7.6.0.0_01.15.2008	Minor
Quality Assurance Program - Manufacturing v.1.1.0.0_8.21.2007	QAPI - Manufacturing v. 1.1.0.0_03.07.2008	None
EDM SOP v.7.8.0.0_11.16.2007	EDM SOP v.7.9.0.0_01.15.2008	Missing

4.3.1.2 ATS – AutoMARK VATS

Table 3 - VATS Prior EAC Document Review VS Current NYSBOE Review identifies the ES&S Unity documents that were reviewed as part of the EAC review process and have comparable documentation provided for the NYSBOE Lot I test effort. The level of effort that is required to complete the review is identified per document.

There are 54 documents that were identified as part of the ATS – AutoMark VATS TDP. 54 have comparable documents from the EAC test efforts (see Table 3 - VATS Prior EAC Document Review VS Current NYSBOE Review). Of these, 1 requires major review, 1 requires minor review, and 52 have no changes.

Table 3 - VATS Prior EAC Document Review VS Current NYSBOE Review

ES&S EAC Document TDP	*ES&S NYSBOE Document TDP*	*Review Required*
AutoMARK VAT Software and Firmware Compilation Instructions	AutoMARK VAT Software and Firmware Compilation Instructions	Major
ATS Software Release Process	ATS Software Release Process	Minor
AutoMARK System Introduction	AutoMARK System Introduction	None
AutoMARK System Overview	AutoMARK System Overview	None
AutoMARK System Functionality	AutoMARK System Functionality	None
AutoMARK System Hardware Specifications	AutoMARK System Hardware Specifications	None
AutoMARK Operating Software Design Specifications	AutoMARK Operating Software Design Specifications	None
AutoMARK Software Design Specifications	AutoMARK Software Design Specifications	None
AutoMARK Software Development Environment	AutoMARK Software Development Environment	None
AutoMARK Graphical User Interface Specifications (includes:)	AutoMARK Graphical User Interface Specifications (includes:)	None
AutoMARK Software Diagnostics Specifications	AutoMARK Software Diagnostics Specifications	None
AutoMARK Embedded Database Interface Specifications	AutoMARK Embedded Database Interface Specifications	None
AutoMARK Ballot Image Processing Specifications	AutoMARK Ballot Image Processing Specifications	None
AutoMARK Ballot Scanning and Printing Specifications	AutoMARK Ballot Scanning and Printing Specifications	None

ES&S EAC Document TDP	*ES&S NYSBOE Document TDP*	*Review Required*
AutoMARK Driver API Specifications	AutoMARK Driver API Specifications	None
AutoMARK Software Standards Specifications	AutoMARK Software Standards Specifications	None
AutoMARK Rapid Application Development (RAD) Methodology	AutoMARK Rapid Application Development (RAD) Methodology	None
AutoMARK Programming Specifications Details	AutoMARK Programming Specifications Details	None
AutoMARK System Security Specifications	AutoMARK System Security Specifications	None
AutoMARK System Security Test Procedures	AutoMARK System Security Test Procedures	None
AutoMARK System Security Test Case	AutoMARK System Security Test Case	None
AutoMARK Environmental Test Plan	AutoMARK Environmental Test Plan	None
AutoMARK Environmental Test Procedures	AutoMARK Environmental Test Procedures	None
AutoMARK Environmental Test Cases	AutoMARK Environmental Test Cases	None
AutoMARK System Level Test Plan	AutoMARK System Level Test Plan	None
AutoMARK System Level Test Procedures	AutoMARK System Level Test Procedures	None
AutoMARK System Level Test Cases	AutoMARK System Level Test Cases	None
AutoMARK Software Quality Assurance Test Plan	AutoMARK Software Quality Assurance Test Plan	None
AutoMARK Software Quality Assurance Test Procedures	AutoMARK Software Quality Assurance Test Procedures	None
AutoMARK Software Quality Assurance Test Cases	AutoMARK Software Quality Assurance Test Cases	None
AutoMARK Operations and Diagnostic Log Specifications	AutoMARK Operations and Diagnostic Log Specifications	None

ES&S EAC Document TDP	*ES&S NYSBOE Document TDP*	*Review Required*
AutoMARK Operations and Diagnostic Log Test Procedures	AutoMARK Operations and Diagnostic Log Test Procedures	None
AutoMARK Operations and Diagnostic Log Test Cases	AutoMARK Operations and Diagnostic Log Test Cases	None
AutoMARK Jurisdiction Guide	AutoMARK Jurisdiction Guide	None
AutoMARK Voter's Guide	AutoMARK Voter's Guide	None
AutoMARK Poll Worker's Guide	AutoMARK Poll Worker's Guide	None
AutoMARK System Installation and Maintenance	AutoMARK System Installation and Maintenance	None
ATS Personnel Deployment and Training Requirements	ATS Personnel Deployment and Training Requirements	None
ATS Employee Training Procedure	ATS Employee Training Procedure	None
AutoMARK Configuration Management Plan	AutoMARK Configuration Management Plan	None
ATS Configuration Management Policy	ATS Configuration Management Policy	None
AutoMARK Initial Software Installation Procedure	AutoMARK Initial Software Installation Procedure	None
ATS Quality Assurance Policy	ATS Quality Assurance Policy	None
ATS Component Storage and Handling Procedure	ATS Component Storage and Handling Procedure	None
ATS Document Control Policy	ATS Document Control Policy	None
ATS Document Change & Issue Procedure	ATS Document Change & Issue Procedure	None
ATS Purchasing Procedure	ATS Purchasing Procedure	None
ATS Quality System Audit Process	ATS Quality System Audit Process	None
ATS System Report (Bug Reporting)Procedure	ATS System Report (Bug Reporting)Procedure	None
ATS Design Review Policy	ATS Design Review Policy	None

ES&S EAC Document TDP	*ES&S NYSBOE Document TDP*	*Review Required*
ATS Engineering Development Policy	ATS Engineering Development Policy	None
ATS Receiving Procedure	ATS Receiving Procedure	None
ATS Engineering Change Request/Change Order Process	ATS Engineering Change Request/Change Order Process	None
AutoMARK System Change Notes	AutoMARK System Change Notes	None

4.3.1.3 ATS - AIMS

Table 4 - AIMS Prior EAC Document Review vs Current NYSBOE Review identifies the ES&S Unity documents that were reviewed as part of the EAC review process and have comparable documentation provided for the NYSBOE Lot I test effort. The level of effort that is required to complete the review is identified per document.

There are 16 documents that were identified as part of the ATS – AIMS TDP. 16 have comparable documents from the EAC test efforts (see Table 4 - AIMS Prior EAC Document Review vs Current NYSBOE Review). Of these, 1 requires major review, 1 requires minor review, and 14 have no changes.

Table 4 - AIMS Prior EAC Document Review vs Current NYSBOE Review

ES&S EAC Document TDP	*ES&S NYSBOE Document TDP*	*Review Required*
AIMS Release Notes	AIMS Release Notes	Major
AIMS System Change Notes	AIMS System Change Notes	Minor
AIMS Requirements Trace Matrix	AIMS Requirements Trace Matrix	None
AIMS Sect01 System Overview	AIMS Sect01 System Overview	None
AIMS Sect02 System Functionality	AIMS Sect02 System Functionality	None
AIMS Sect03 System Hardware Specifications	AIMS Sect03 System Hardware Specifications	None
AutoMARK Compact Flash Memory Card Specifications	AutoMARK Compact Flash Memory Card Specifications	None
AIMS Sect04 Software Design Specifications	AIMS Sect04 Software Design Specifications	None
AIMS Sect04 Programming Specifications Details	AIMS Sect04 Programming Specifications Details	None
AIMS Sect06 System Security Specifications	AIMS Sect06 System Security Specifications	None

ES&S EAC Document TDP	*ES&S NYSBOE Document TDP*	*Review Required*
AIMS Sect07 Quality Assurance Policy & Procedures	AIMS Sect07 Quality Assurance Policy & Procedures	None
AIMS Sect07 Quality Assurance Test Cases	AIMS Sect07 Quality Assurance Test Cases	None
AIMS Sect07 Quality Assurance Test Procedures	AIMS Sect07 Quality Assurance Test Procedures	None
AIMS Sect05 Election Officials Guide	AIMS Sect05 Election Officials Guide	None
AIMS Sect05 System Operations Procedures	AIMS Sect05 System Operations Procedures	None
AIMS Sect08 Configuration Management Plan	AIMS Sect08 Configuration Management Plan	None

Overall, there are a total of 107 documents from the SysTest Labs EAC test effort. Of these, 12 are major reviews, 16 are minor reviews, and 79 documents have no differences. The effort is still required to review all 107 documents to verify all New York State Laws and 6209 Regulations.

4.3.2 Source Code Reviews and Assessments

SysTest Labs has compared the source code from the EAC test effort to the code submitted for the NYSBOE Lot 1 test effort. SysTest Labs recommends leveraging all of the source code review that has been completed for the SysTest Labs EAC test effort. Discrepancies have been transferred to the NYSBOE project and source code review will continue.

4.3.3 Test Plans and Test Cases

2005 VVSG and New York State standards require an expanded level of detail than has previously been required for EAC testing. The SysTest Labs EAC Test Plans and Test Cases have been leveraged as templates and modified as necessary to satisfy the expanded level of detail required.

Approximately 20% of the test plans and test cases already developed have been integrated into the NYSBOE Voting System Specific Test Plans and Test Cases.

4.3.4 Hardware Test Results and Reports

SysTest Labs' 2005 EAC test effort of the Unity 4.0 DS200 testing is currently in progress.

SysTest Labs recommends the acceptance of the previous hardware testing from the EAC test efforts for the DS200.

SysTest Labs' 2002 EAC test effort of the ES&S Unity 3010/3011 with ATS 1.3VAT A200 hardware testing is complete.

SysTest Labs recommends the acceptance of the previous hardware testing from the EAC test efforts for the VAT A200, except for the Electrical Fast Transient (EFT) testing. The EFT testing has different test procedures between the 2002 VSS and the 2005 VVSG requirements.

4.3.5 Functional Test Results and Reports

There are no Functional Test Results and Reports to leverage for the Lot 1 test effort.

4.3.6 Evaluation

Overall, the amount of work that can be leveraged as part of this effort is as follows::

- There are a total of 107 documents from the SysTest Labs EAC test effort. Of these 107 documents;
    - 12 will require complete documentation review,
    - 16 will require minimal documentation review
    - 79 documents have not changed and SysTest Labs recommends leveraging the results of these reviews

  - All documentation will be reviewed to verify that it satisfies all New York State Laws and 6209 regulations

- SysTest Labs recommends that all the EAC Source Code Review be leveraged. In addition, all source code will be reviewed to verify that it satisfies all New York State Laws and 6209 regulations
- SysTest Labs recommends the acceptance of the previous hardware testing from the EAC test efforts for the DS200.
- SysTest Labs recommends the acceptance of the previous hardware testing from the EAC test efforts for the VAT A200, except for the Electrical Fast Transient (EFT) testing. The EFT testing has different test procedures between the 2002 VSS and the 2005 VVSG requirements.
- There are no SysTest Labs Functional Test Results or Reports that may be leveraged for the Lot I test effort.