CERTIFICATION TEST PLAN

Prepared for:

Manufacturer Name	ES&S
Manufacturer System	EVS 5.0.0.0
EAC Application No.	**ESS1105**
Manufacturer Address	11208 John Galt Boulevard Omaha, NE 68137

	REPORT NO.	Test Plan No. T59087.01 Rev E
wyle laboratories	**DATE**	3/20/2013

REV	DATE	PAGE OR PARAGRAPH AFFECTED	DESCRIPTION OF CHANGES
---	3-22-12	Entire Document	Original Release.
A	5-9-12	Entire Document	Complete document edited based on EAC comments.
B	7-6-12	Page 22 Section 1.5.5	Added reference.
B	7-6-12	Page 22 Table 1-4	New table with explanations.
B	7-6-12	Page 25 Section 2.2	Revised the know field issues.
B	7-6-12	Page 29 Table 3-2	Added firmware numbers for firewall and modem.
B	7-6-12	Page 39 Section 4.4.1	Revised the last sentence of the second paragraph.
B	7-6-12	Page 62 Section 6.3.2	Revised Security Source Code Review section.
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C	9-25-12	Entire Document	Removed all references to ExpressVote and public telecommunications
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E	3-1-13	Entire Document	Updated to "As Run" Test Plan for Final Report.

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APPENDICES

1.0   INTRODUCTION

The purpose of this National Certification Test Plan is to document the procedures that Wyle Laboratories, Inc. will follow to perform certification testing of the Election Systems and Software (ES&S) EVS 5.0.0.0 Voting System to the requirements set forth for voting systems in the U.S. Election Assistance Commission (EAC) 2005 Voluntary Voting System Guidelines (2005 VVSG). Prior to submitting the system for certification testing, ES&S submitted an application to the EAC for certification of the EVS 5.0.0.0 Voting System to the requirements of the EAC 2005 VVSG.

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

1.1   Scope

The EVS 5.0.0.0 Voting System is a paper-based voting system that includes:

- ElectionWare
- Election Reporting Manager (ERM)
- ES&S Event Log Service
- Removable Media Service
- VAT Previewer
- Polling Place Scanner – DS200
- Polling Place American Disability Act (ADA) Devices – AutoMARK™ A100, AutoMARK™ A200, and AutoMARK™ A300
- Central Count Digital Scanner – DS850

The DS200, AutoMARK™ A100/A200, and DS850 have been submitted for testing in previous EAC campaigns. Wyle personnel will analyze each unit to determine prior testing acceptance (annotated later in the test plan) based on modifications to the unit, which includes software, hardware and functional modifications. Based on this data, each unit shall be subjected to the tests required to ensure that all applicable VVSG requirements are met.

The software utilized in the system will also be compared to versions that have been submitted for testing in previous EAC campaigns at Wyle to determine the extent of the source code review required (annotated later in the test plan). Based on this data, Wyle personnel will execute software code review to ensure that all applicable VVSG requirements are met and changes to the software do not affect any operational features of the voting system.

The complete system shall be tested in a full system integration test to ensure all components interact properly in the current system configurations listed in the EVS 5.0.0.0 Voting System scope.

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1.0   INTRODUCTION (Continued)

1.2   References

The documents listed below were used in the development of the Test Plan and will be utilized to perform certification testing.

- 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 107th 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)

- EAC Notices of Clarification (listed on www.eac.gov)

- EAC Quality Monitoring Program residing on:

  http://www.eac.gov/testing_and_certification/quality_monitoring_program.aspx

A listing of the EVS 5.0.0.0 Voting System Technical Data Package (TDP) documents submitted for this certification test effort is listed in Section 3.4, Deliverable Materials.

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1.0   INTRODUCTION (Continued)

1.3   Terms and Abbreviations

This subsection defines all terms and abbreviations applicable to the development of this Test Plan.

Table 1-1 Terms and Abbreviations

Term	Abbreviation	Definition
Americans with Disabilities Act of 1990	ADA	ADA is a wide-ranging civil rights law that prohibits, under certain circumstances, discrimination based on disability.
Configuration Management	CM	---
Commercial Off the Shelf	COTS	---
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.
ES&S Event Log Service	ELS	---
Election Management System	EMS	Within the EVS 5.0.0.0 Voting System, the EMS is comprised of five components: ElectionWare, ERM, ES&S Event Log Service, and VAT Previewer.
Election Reporting Manager	ERM	EVS EMS reporting component.
Election Systems and Software	ES&S	---
Equipment Under Test	EUT	Refers to the individual system component or multiple piece of the same component
ES&S Voting System	EVS	---
Functional Configuration Audit	FCA	Verification of system functions and combination of functions cited in the manufacturer's documentation.
Help America Vote Act	HAVA	Act created by United States Congress in 2002.
Intelligent Mark Recognition	IMR	Visible light scanning technology to detect completed ballot targets.
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.

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1.0   INTRODUCTION (Continued)

1.3   Terms and Abbreviations (Continued)

Table 1-1 Terms and Abbreviations (Continued)

Term	Abbreviation	Definition
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	--
Regression Testing	n/a	The process of examining and testing to verify that all functional and firmware modifications made during the test campaign did not introduce new errors or non-conformities into the voting system.
System Under Test	SUT	Refers to the system as a whole (all components)
Secure File Transfer Protocol	SFTP	A network protocol that provides file access, file transfer, and file management functionality over any reliable data stream.
Technical Data Package	TDP	Manufacturer documentation related to the voting system required to be submitted as a precondition of certification testing.
Uninterruptible Power Supply	UPS	---
Voter Assist Terminal	VAT	The electronic ballot marking device component is the ES&S AutoMARK™.
Voluntary Voting System Guidelines	EAC 2005 VVSG	Published by the EAC, the third iteration of national level voting system standards.
Wyle Laboratories, Inc.	Wyle	---
Wyle Operating Procedure	WoP	Wyle Test Method or Test Procedure.
Voting System Test Laboratory	VSTL	Wyle Labs
Voluntary Voting System Guidelines	VVSG	EAC Voluntary Voting System Guidelines V. 1.0

1.4   Testing Responsibilities

Prior to the development of this test plan, Wyle evaluated test results from previous test campaigns performed by the EAC's accredited VSTLs as well as test cases and results of developmental testing conducted by ES&S during the pre-certification process that were provided by ES&S in their TDP. The purpose of this evaluation was to determine the scope of testing required for system certification. Following the review, Wyle determined that testing from previous test campaigns could be utilized to satisfy the requirements of this test campaign. All other core and non-core software and hardware certification testing shall be conducted under the guidance of Wyle personnel verified by Wyle to be qualified to perform the testing.

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1.0   INTRODUCTION (Continued)

1.4   Testing Responsibilities (Continued)

1.4.1   Project Schedule

This information is contained in a Wyle-generated Microsoft Project schedule. This schedule is presented in Appendix A, "ES&S Project Schedule." The dates on the schedule are not firm dates but estimates presented for informational purposes.

1.4.2   Owner Assignments

This information is contained in a Wyle-generated Microsoft Project schedule. This schedule is presented in Appendix A, "ES&S Project Schedule."

1.4.3   Test Case Development

Wyle will utilize the "Wyle Baseline Test Cases" for the Functional Configuration Audit (FCA). These shall be augmented with specially-designed test cases tailored to the EVS 5.0.0.0 Voting System. Wyle has designed specific election definition and test cases for the Operational Status Check and the Accuracy Tests. The "Baseline" functional test cases and the election definitions have been previously submitted to the EAC for review.

1.4.4   Test Procedure Development and Validation

Wyle will utilize the Wyle Operating Procedures (WoPs) during the duration of this test program. The validated WoPs have been previously submitted to the EAC for review.

1.4.5   Third-Party Tests

Wyle will utilize third-party testing to perform the product safety portion of the EVS 5.0.0.0 Voting System test campaign. The third-party tester will be MET Laboratories, Inc.

1.4.6   EAC and Manufacturer Dependencies

This information is contained in a Wyle-generated Microsoft Project schedule. This schedule is presented in Appendix A, "ES&S Project Schedule."

1.4.7   VVSG

The EVS 5.0.0.0 Voting System shall be tested to all applicable EAC 2005 VVSG requirements. Please refer to the EAC Virtual Review Tool (VRT) for further reference.

1.4.8   Beyond VVSG

No additional test results have been submitted for consideration as part of this test campaign.

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1.0   INTRODUCTION (Continued)
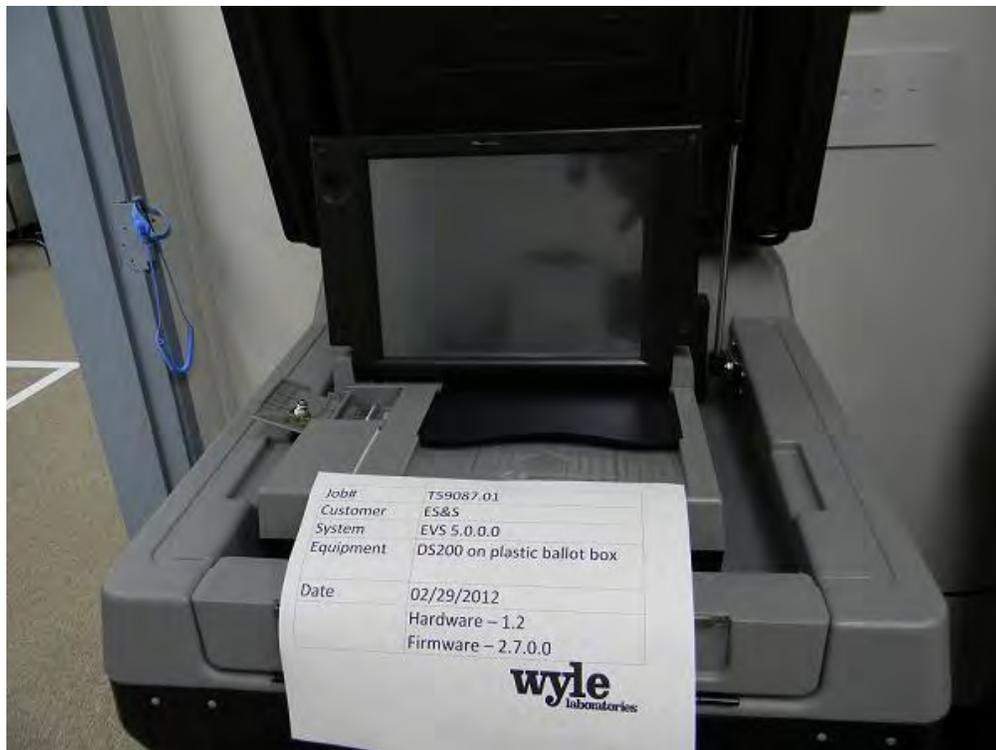
1.5   Target of Evaluation Description

The following sections address the design methodology and product description of the EVS 5.0.0.0 Voting System as taken from the ES&S technical documentation.

1.5.1   System Overview

The ES&S EVS 5.0.0.0 Voting System is a comprehensive suite of vote tabulation equipment and software solutions providing end-to-end election management. The EVS 5.0.0.0 Voting System includes the following core system components detailed in Tables 1-2 and 1-3.

Table 1-2 EVS 5.0.0.0 Voting System Hardware Components

Component	Hardware Version	Firmware Version
DS200	1.2	2.7.0.0
AutoMARK™ A100	1.0	1.8.1.0
AutoMARK™ A200 (SBC 2.0)	1.1	1.8.1.0
AutoMARK™ A200 (SBC 2.5)	1.1	1.8.1.0
AutoMARK™ A300 (SBC 2.0)	1.3	1.8.1.0
AutoMARK™ A300 (SBC 2.5)	1.3	1.8.1.0
DS850	1.0	2.4.0.0

Table 1-3 EVS 5.0.0.0 Voting System Software Components

Component	Version
ElectionWare	4.1.0.0
Election Reporting Manager (ERM)	8.6.0.0
ES&S Event Log Service	1.5.0.0
VAT Previewer	1.8.1.0
Removable Media Service	1.4.0.0

1.5.2   System Hardware

The ES&S EVS 5.0.0.0 Voting System can be set up to support one or more of the following hardware components:

- DS200 Precinct Tabulator

- AutoMARK™ Voting Assist Terminal
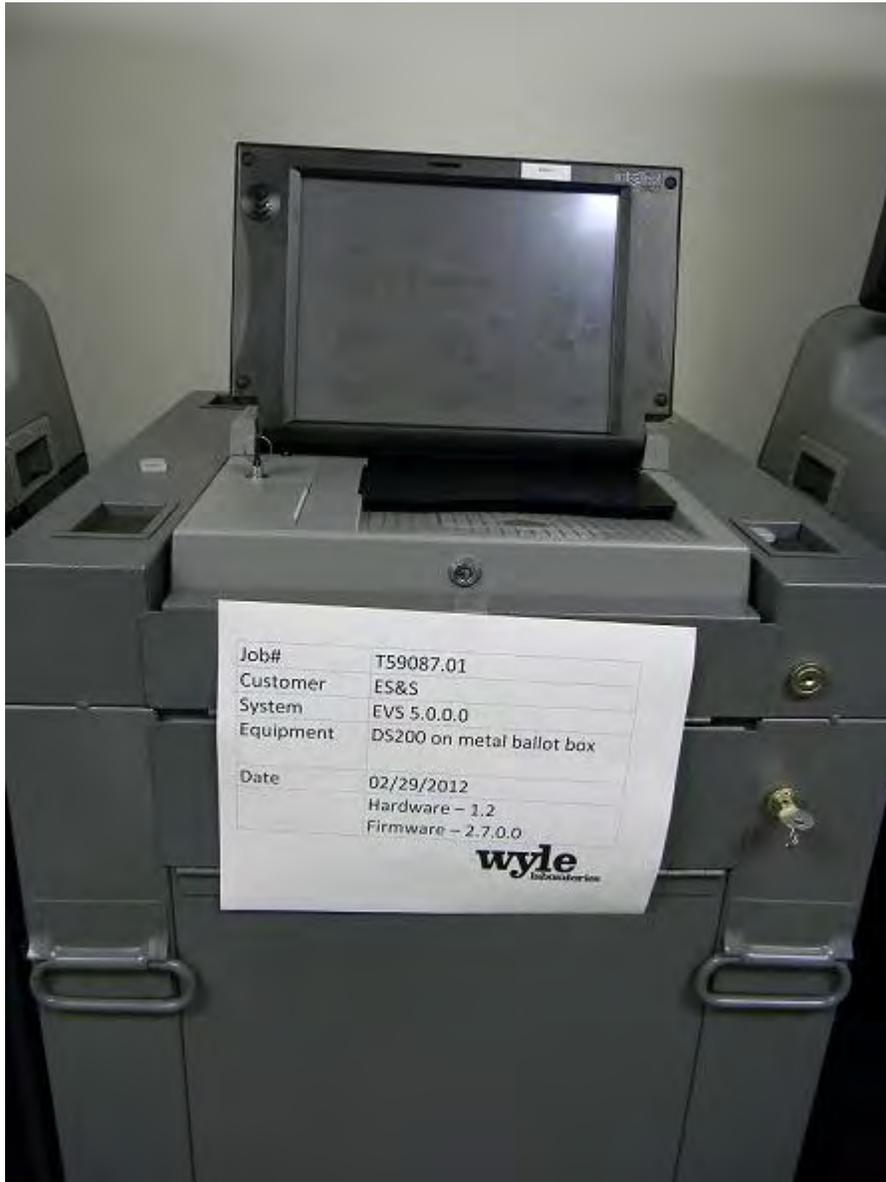
- DS850 Central Tabulator

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1.0   INTRODUCTION (Continued)

1.5   Target of Evaluation Description (Continued)

1.5.2   System Hardware (Continued)

Each of these components is described in the following paragraphs:

Precinct Ballot Tabulator: DS200

The precinct ballot tabulator component is the DS200. The DS200 is a digital scan paper ballot tabulator designed for use at the polling place level. After the voter marks a paper ballot, their ballot is inserted into the unit and immediately tabulated. The tabulator uses a high-resolution image-scanning device to image the front and rear of the ballot simultaneously. The resulting ballot images are then decoded by a proprietary recognition engine.

The system includes a 12-inch touch screen display providing voter feedback and poll worker messaging. Once a ballot is tabulated and the system updates internal vote counters, the ballot is dropped into an integrated ballot box. The DS200 includes an internal thermal printer for the printing of the zero reports, log reports, and polling place totals upon the official closing of the polls.

Photograph No. 1: DS200 (on plastic ballot box)

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1.0   INTRODUCTION (Continued)

1.5   Target of Evaluation Description (Continued)

1.5.2   System Hardware (Continued)

<u>**Precinct Ballot Tabulator: DS200**</u> **(Continued)**

Photograph No. 2: DS200 (on metal ballot box)

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1.0   INTRODUCTION (Continued)

1.5   Target of Evaluation Description (Continued)

1.5.2   System Hardware (Continued)

Electronic Ballot Marking Device: AutoMARK™ Voter Assist Terminal (VAT)

The electronic ballot marking device component is the ES&S AutoMARK™ Voter Assist Terminal (VAT). The AutoMARK™ VAT assists voters with disabilities by marking optical scan ballots.

The AutoMARK™ VAT includes two user interfaces to accommodate voters who are visually or physically impaired or voters who are more comfortable reading or hearing instructions and choices in an alternative language. The AutoMARK™ is equipped with a touch-screen and keypad. The touch-screen interface includes various colors and effects to prompt and guide the voter through the ballot marking process. Each key has both Braille and printed text labels designed to indicate function and a related shape to help the voter determine its use.

Regardless whether the voter uses the touch-screen or other audio interface, changes can be made throughout the voting process by navigating back to the appropriate screen and selecting the change or altering selections at the mandatory vote summary screen that closes the ballot-marking session.

The A100, A200 and A300 all operate the same and have the same features. The difference between the models is the location of two printed circuit boards and related wiring harness and cables. In the A200, the Printer Engine Board and Power Supply Board were moved from under the machine to the top. The A300 has a different lock and label. Since this change is so minor, the A300 equipment will not be tested. However, the A300 will be included in the recommendation for certification.

Photograph No. 3: AutoMARK™ A200 VAT

1.0 INTRODUCTION (Continued)

1.5 Target of Evaluation Description (Continued)

1.5.2 System Hardware (Continued)

Electronic Ballot Marking Device: AutoMARK™ Voter Assist Terminal (VAT) (Continued)
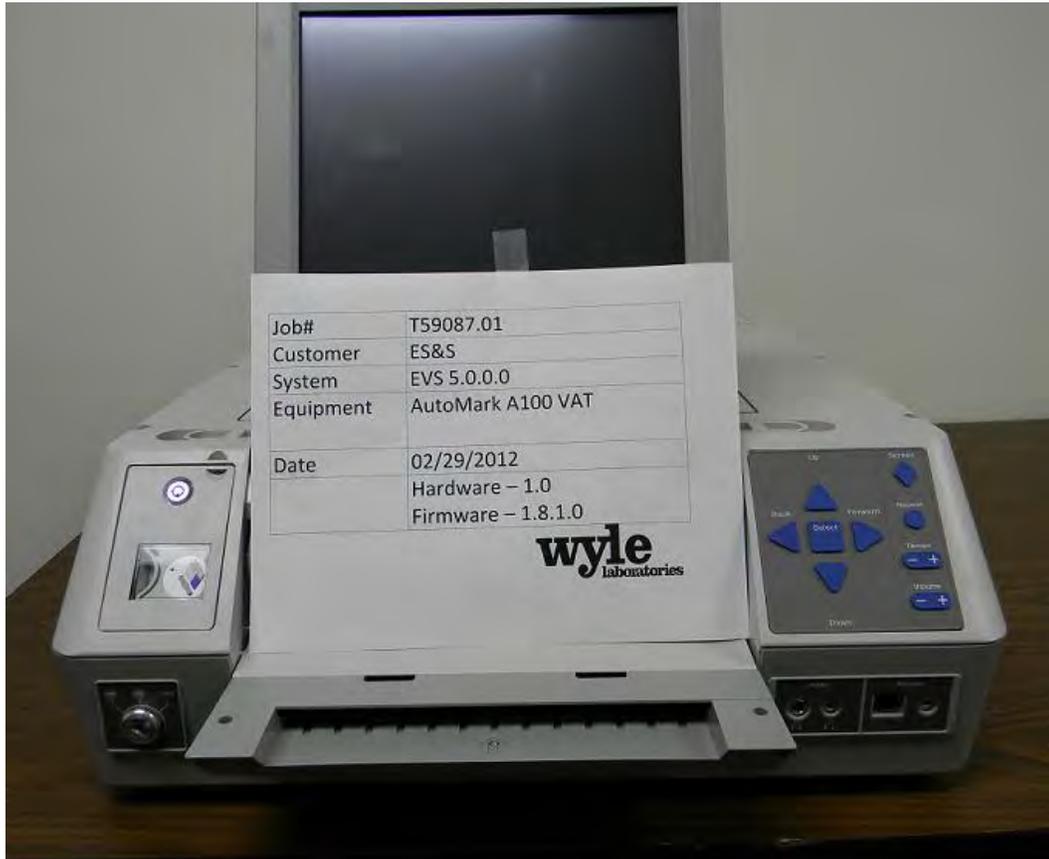
**Photograph No. 4: AutoMARK™ A100 VAT**

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1.0   INTRODUCTION (Continued)

1.5   Target of Evaluation Description (Continued)

1.5.2   System Hardware (Continued)

<u>**Tabulator: DS850**</u>

The DS850 is a high-speed, digital scan central ballot counter. During scanning, the DS850 prints a continuous audit log to a dedicated audit log printer and can print results directly from the scanner to a second connected printer. The scanner saves results internally and to results collection media that officials can use to format and print results from a PC running Election Reporting Manager. The DS850 has an optimum throughput rate of 200 ballots per minute and uses cameras and imaging algorithms to image the front and back of a ballot, evaluate the results and sort ballots into discrete bins to maintain continuous scanning.

Photograph No. 5: DS850

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1.0   INTRODUCTION (Continued)

1.5   Target of Evaluation Description (Continued)

1.5.2   System Hardware (Continued)

EMS Client Server Configuration

EVS 5.0.0.0 Voting System Election Management System (EMS) will be configured with a Server running Windows Server 2008 R2 and a combination of a client laptop and a client desktop running Windows 7 Professional.

Photograph No. 6: EMS Server

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1.0   INTRODUCTION (Continued)

1.5   Target of Evaluation Description (Continued)

1.5.2   System Hardware (Continued)

<u>**EMS Client Server Configuration**</u> **(Continued)**
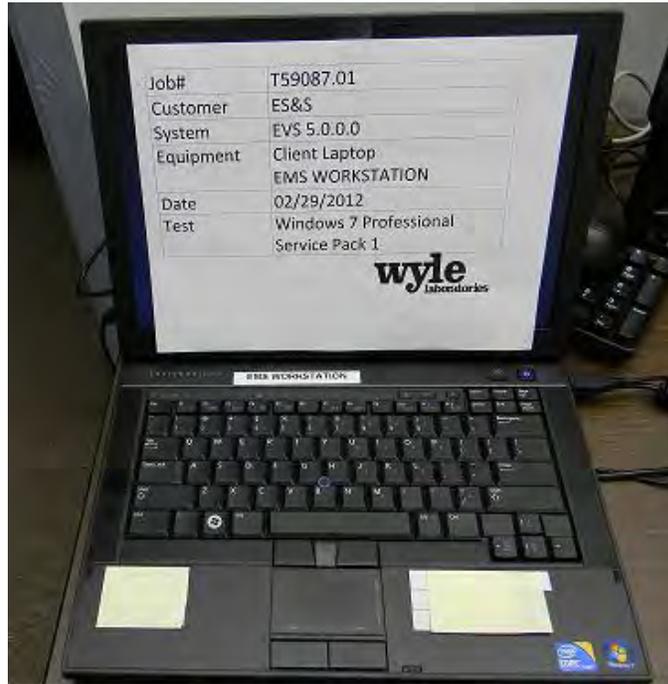
Photograph No. 7: EMS Client Laptop
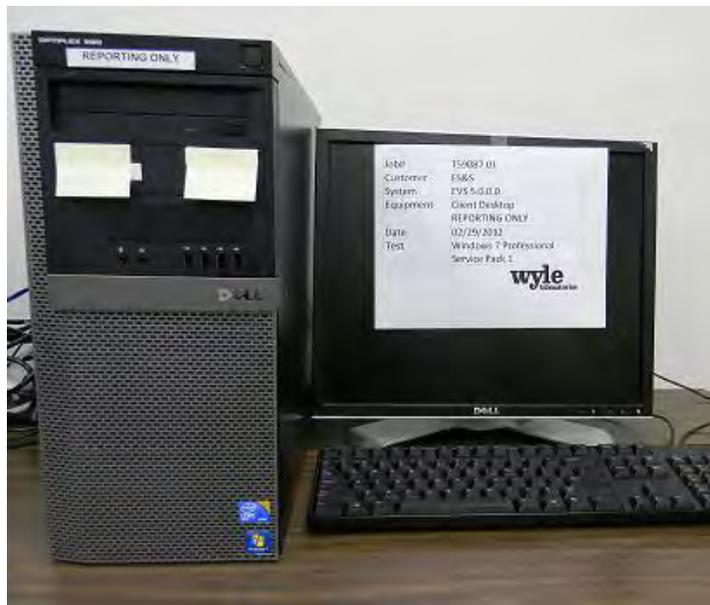
Photograph No. 8: EMS Client Desktop

1.0   INTRODUCTION (Continued)

1.5   Target of Evaluation Description (Continued)

1.5.3   System Software

The EVS 5.0.0.0 Voting System EMS is an application suite comprised of five components: ElectionWare, Election Reporting Manager (ERM), Removable Media Service (RMS), ES&S Event Log Service (UELS), and VAT Previewer.

ElectionWare

ElectionWare integrates the election administration functionality into a unified application. Its intended use is to define an election and create the resultant media files used by the DS200 tabulator, AutoMARK™ Voter Assist Terminal (VAT), the DS850 Central Ballot Scanner, and Election Reporting Manager (ERM). An integrated ballot viewer allows election officials to view the scanned ballot and captured ballot data side-by-side and produce ballot reports.

Election Reporting Manager (ERM)

Election Reporting Manager (ERM) generates paper and electronic reports for election workers, candidates, and the media. Jurisdictions can use a separate ERM installation to display updated election totals on a monitor as ballot data is tabulated, and send the results' reports directly to the media outlets.

ERM supports accumulation and combination of ballot results data from all ES&S tabulators. Precinct and accumulated total reports provide a means to accommodate candidate and media requests for totals and are available upon demand. High-speed printers are configured as part of the system accumulation/reporting stations PC and related software.

Removable Media Service (RMS)

Removable Media Service (RMS) is an application that runs in the background of the EMS client workstation and supports the installation and removal of election and results media.

ES&S Event Log Service (UELS)

ES&S Event Log Service is a Windows Service that runs in the background of any active ES&S Election Management software application to monitor the proper functioning of the Windows Event Viewer. The ES&S Event Log Service closes any active ES&S software application if the system detects the improper deactivation of the Windows Event Viewer.

VAT Previewer

The VAT Previewer is an application within the EMS program that allows the user to preview audio text and screen layout prior to burning Election Day media for the AutoMARK™.

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1.0 INTRODUCTION (Continued)

1.5 Target of Evaluation Description (Continued)

1.5.4 System Operational Concept

The operational flow and low-level system interfaces for the EVS 5.0.0.0 Voting System is illustrated in Figure 1-1.
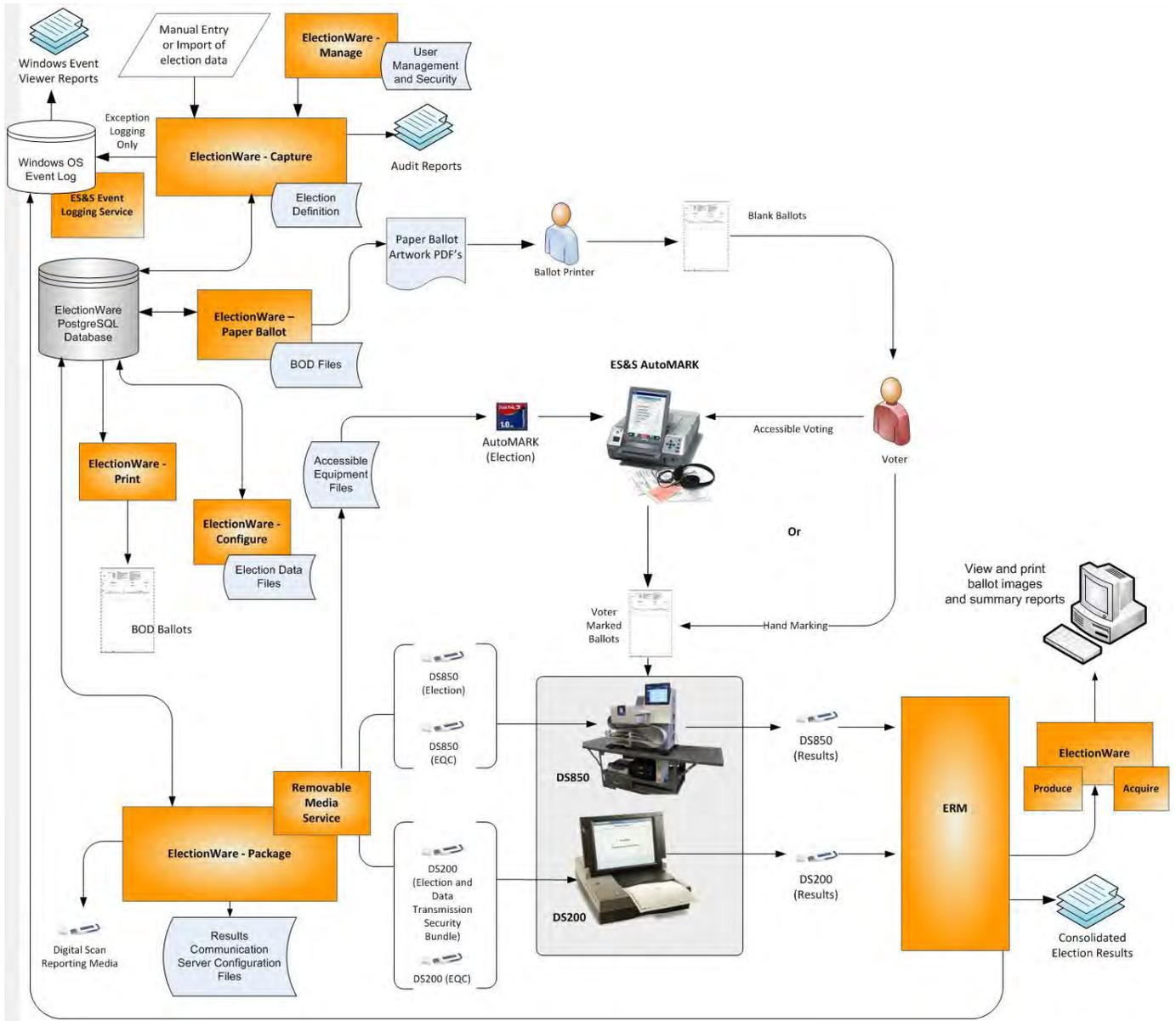

Figure 1-1 System Overview Diagram

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1.0   INTRODUCTION (Continued)

1.5   Target of Evaluation Description (Continued)

1.5.5   System Limits

The system limits and the ballot target limits that ES&S has stated to be supported by the EVS 5.0.0.0 Voting System are compiled in Tables 1-4 and 1-5. (see Section 6.3.3, System Testing, Volume/Stress/Reliability for details on how these limits are tested)

Table 1-4 EVS 5.0.0.0 Voting System Limits

Limit Description (Maximum)	Limit Value	Limiting Factor
Maximum precincts allowed in an election	At least 9900	ERM
Maximum count for any election	500,000 (65,500 from any tabulator media)	ERM report (ERM results import)
Maximum candidates allowed per election	Depends on election content (limited by 21,000 maximum counters)[1]	ERM
Maximum contests allowed in an election	Depends on election content (limited by 21,000 maximum counters)[2]	ERM
Maximum counters allowed per precinct	Limits candidates and contests assigned to a precinct to 1000 [3]	ERM
Maximum contests allowed per ballot style	200 or number of positions on a ballot	N/A
Maximum candidates (ballot choices) allowed per contest	175	ERM (database create)
Maximum number of parties allowed	General-75, Primary-20 (including nonpartisan party)	ERM (database create)
Maximum 'vote for' per contest	98	ERM (database create)
Ballot Formats	All optical scan ballots used in an election must be the same size and contain the number of response rows.	Ballot scanning equipment
Maximum ballot styles	9900	ERM
Maximum district types/groups	20	ERM
Maximum district of a given type (excludes the precinct group which contains all precincts	40	ERM

1 Calculation of the number of counters must include a minimum of 4 counters for each contest, 3 overhead (overvote, undervote, precincts counted) and at least 1 candidate. Additional contest candidates each add a counter. If some precincts are defined as Absentee, a fourth overhead counter (absentee precincts counted) must be added to each contest. The number of statistical counters (Ballots Cast, Registered voters) must be added to the contest counters to determine the total counters.

2 Example of maximum contest calculation if all contests had 2 candidates (5 counters each, 3 overhead counters + 2 candidates) and there were 10 statistical counters (i.e. Ballots Cast-Total, Republican, Democratic, Libertarian, Nonpartisan and Registered Voter's Total, Republican, Democratic, Libertarian, Nonpartisan. (21000-20)/5 = 4196 or (counter limit – statistics x 2)/number of counters/contest = number of contests.

3 Contest counters are calculated as indicated in footnote 1, but two counters must be added for each statistical counter defined for the precinct. There are a minimum of 3 statistic counters assigned to each precinct (six added counters), "Ballots Cast," "Registered Voters" and "Ballots Cast Blank."

1.0   INTRODUCTION (Continued)

1.5   Target of Evaluation Description (Continued)

1.5.5   System Limits (Continued)

Table 1-5 EVS 5.0.0.0 Voting System Ballot Target Limits

Ballot Size (ovals per inch Left or Right)	Positions per Row x Column
8½ x 11" (4 ovals per inch)	38 rows x 24 columns = 912/side
8½ x 11" (5 ovals per inch)	50 rows x 24 columns = 1200/side
8 ½ x 14" (3 ovals per inch)	41 rows x 24 columns = 984/side
8 ½ x 14" (4 ovals per inch)	50 rows x 24 columns = 1200/side
8 ½ x 14" (5 ovals per inch)	65 rows x 24 columns = 1560/side
8 ½ x 17" (3 ovals per inch)	50 rows x 24 columns = 1200/side
8 ½ x 17" (4 ovals per inch)	62 rows x 24 columns = 1488/side
8 ½ x 17" (5 ovals per inch)	81 rows x 24 columns = 1944/side
8 ½ x 19" (3 ovals per inch)	56 rows x 24 columns = 1344/side
8 ½ x 19" (4 ovals per inch)	70 rows x 24 columns = 1680/side
8 ½ x 19" (5 ovals per inch)	91 rows x 24 columns = 2184/side

1.5.6   Supported Languages

The following languages have been stated by ES&S to be supported by the EVS 5.0.0.0 Voting System:

- English

- Spanish

- Chinese

- Korean

- Japanese

All stated languages will be verified to be supported; however, only English and Spanish ballots will be cast during functional testing. Wyle will test English, Spanish, and one character based language (Korean) during System Integration Testing. Wyle will not be testing the accuracy of the translation of English to Spanish or English to Korean.

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1.0   INTRODUCTION (Continued)

1.5   Target of Evaluation Description (Continued)

1.5.7   Supported Functionality

The EVS 5.0.0.0 Voting System is designed to support the following voting variations:

- General Election

- Open and Closed Primaries

- Partisan offices

- Non-Partisan offices

- Write-in voting

- Straight Party voting

- Cross-Party endorsement

- Split Precincts

- Ballot Rotation

- Provisional or Challenged Ballots

- Vote for N of M

- Audio Ballot

- Recall issues, with options

The EVS 5.0.0.0 Voting System does not include functions for Primary Presidential Delegation Nominations, Ranked Order Voting, or Cumulative Voting; therefore, testing will not be conducted on these functions.

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2.0   PRE-CERTIFICATION TESTING AND ISSUES

2.1   Evaluation of Prior VSTL Testing

EMC testing was performed on the DS200 and DS850 by Criterion Technology's Test Report Number 091130-1503R, "EMC Qualification Test Report, Election Systems and Software, Digital Scan Central-Count Vote Tabulation System, DS200" and Test Report Number 091014-1481, "EMC Qualification Test Report, Election Systems and Software, Digital Scan Central-Count Vote Tabulation System, DS850(i)" as part of the Unity 5.0 project at iBeta. ES&S resubmitted these test reports to Wyle for reuse consideration. The reports covered the following tests:

• Electrical Power Disturbance

• Electromagnetic Radiation

• Electrostatic Disruption

• Electrical Power Disturbance

• Electromagnetic Susceptibility

• Electrical Fast Transient

• Lightning Surge

• Conducted RF Immunity

• Magnetic Fields Immunity

For details of the hardware qualitative examination performed by Wyle, refer to Section 4.4.1 of this test plan.

Source code review performed by iBeta as part of the Unity 5.0.0.0 campaign will be reused. Wyle has reviewed changes that were made due to pending discrepancies from that campaign. In addition, Wyle has reviewed all changes to the DS850 code since November 2010.

2.1.1   Reason for Testing and Results

The EMC testing performed by Criterion was directed by iBeta for an EAC 2005 VVSG test campaign for Unity 5.0.0.0.

2.2   Known Field Issues

The EAC Formal Investigation Report, dated December 20, 2011.

Two technical advisories have been issued by the EAC concerning known field issue of the DS200, each of which is summarized in steps (1) and (2).

1.   *EAC Technical Advisory ESS2011-02: During local acceptance testing in a jurisdiction, multiple DS200 Ballot Scanners exhibited an anomaly where the touch screen interface would stop responding to touches.

2.   EAC Technical Advisory ESS2011-03: During local acceptance testing, a DS200 Ballot Scanner failed to count a marked ballot position resulting in a lost vote.

2.0   PRE-CERTIFICATION TESTING AND ISSUES (Continued)

2.2   Known Field Issues (Continued)

In response to the technical advisories, ES&S has published two Technical Bulletins (PRBDS2000013 and FYIDS2000021, both of which are dated 8/3/2011).

(*Tested and fixed in Unity 3.2.0.0 Rev. 3.)

In addition to the steps (1) and (2) advisories, Wyle will examine the reports listed below and any report submitted to Wyle through an official entity. The purpose of this examination is to determine if the issues report are present in the submitted system. If issues are found they will be documented and tracked to resolution. The results of this examination and any additional reports submitted during the testing campaign will be in the final test report.

The following reports will be examined:

- State of New York Reports:
  - o NYC Findings Report 2011
  - o NYSTEC Security Testing Expectations

- State of California Reports:
  - o Multiple System Problem Report (4-20-11)
  - o ES&S Unity 3.0.1.1 Problem Report (07-01-11)
  - o ES&S Unity 3.0.1.1 Problem Report (10-18-11)
  - o ES&S Unity 3.0.1.1 Problem Report (11-01-11)
  - o ES&S Unity 3.0.1.1 Problem Report (12-06-11)
    - ▪ Amended Report to the ES&S Unity 3.0.1.1 Problem Report (01/05/12)
  - o ES&S Unity 3.0.1.1 Problem Report

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3.0   MATERIALS REQUIRED FOR TESTING

The materials required for certification testing of the EVS 5.0.0.0 Voting System include software, hardware, test materials, and deliverable materials to enable the test campaign to occur shall be delivered by ES&S to Wyle.

3.1   Software

Table 3-1 lists the software the manufacturer must submit for testing. This section defines the two types of software needed for testing:

- Software used for the testing of hardware, software, and security.

- Supporting software required for the test environment (operating systems, compliers, assemblers, database managers, and any other supporting software).

The EVS 5.0.0.0 Voting System software and firmware submitted for review are identified in Table 3-1.

Table 3-1 EVS 5.0.0.0 Voting System Software and Firmware

Software/Firmware	Version	Description
ES&S Event Log Service	1.5.0.0	The ES&S Event Log Service is a Windows Service that runs in the background of any active ES&S Election Management software application to monitor the proper functioning of the Windows Event Viewer.
ElectionWare	4.1.0.0	ElectionWare Election Management System software for defining contents, candidates and ballot formats and performing results post-processing.
PaperBallot	3.1.0.0	The PaperBallot utilizes ElectionWare data originally sourced from external election data (Imported text file) or created within ElectionWare's Define Module. Ballot customization is accomplished with the Paper Ballot module. This feature is integrated into the ElectionWare program.
Election Reporting Manager (ERM)	8.6.0.0	The Election Reporting Manager (ERM) generates paper and electronic reports for election workers, candidates, and the media. The Jurisdictions can use a separate ERM installation to display updated election totals on a monitor as ballot data is tabulated, and send results reports directly to media outlets.
Removable Media Service	1.4.0.0	The Removable Media Service is an application used as a portion of the Event Log services that are used to capture and log errors in the ES&S Event Logging Service when the ElectionWare database has become unavailable due to an error condition. All logins and starting of Removable Media Service are logged to the Windows ES&S event log.

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3.0   MATERIALS REQUIRED FOR TESTING (Continued)

3.1   Software (Continued)

Table 3-1 EVS 5.0.0.0 Voting System Software and Firmware (Continued)

Software/Firmware	Version	Description
DS200	2.7.0.0	The DS200 is a digital scan paper ballot tabulator designed for use at the polling place level.
DS850	2.4.0.0	A high-speed, digital scan central ballot counter. During scanning, the DS850 prints a continuous audit log to a dedicated audit log printer and can print results directly from the scanner to a second connected printer.
AutoMARK™	1.8.1.0	The AutoMARK™™ Voter Assist Terminal is designed to help voters mark their election ballots when they are visually impaired, physically disabled, or more comfortable reading or hearing instructions and choices in an alternative language.
VAT Previewer	1.8.1.0	The VAT Previewer is an application within the EMS program that allows the user to preview audio text, and screen layout prior to burning election day media for the AutoMARK™.

3.2   Equipment

This subsection categorizes the equipment the manufacturer has submitted for testing. Each test element is included in the list of the equipment required for testing of that element, including system hardware, general purpose data processing, communications equipment, and any required test instrumentation.

Every effort is made to verify that the COTS equipment has not been modified for use. Wyle will perform research using the COTS equipment manufacturers' websites based on the serial and service tag numbers for each piece of equipment and will evaluate COTS hardware, system software and communications components for proven performance in commercial applications other than elections. For PCs, laptops, and servers, the service tag information is compared to the system information found on each machine. The physical external and internal examinations are also performed to the best of Wyle's abilities when the equipment is easily accessible without the possibility of damage. The hard drives, RAM memory, and other components are examined to verify that the components match the information found on the COTS equipment manufacturers' websites.

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3.0 MATERIALS REQUIRED FOR TESTING (Continued)

3.2 Equipment (Continued)

Table 3-2 EVS 5.0.0.0 Voting System Equipment Description

Equipment	Description	Serial Numbers
DS200 • Hardware v. 1.2 • Firmware v. 2.7.0.0	A digital scan paper ballot tabulator designed for use at the polling place level.	DS0110340034, DS0110340480, ES0108330100, ES0108340085, ES0108340579
AutoMARK™ A100 • Hardware v. 1.0 • Firmware v. 1.8.1.0	ADA Ballot Marking Device	AM0206443671, AM0106421217, AM0106431607, AM0106431648, AM0307430730, AM0308421809
AutoMARK™ A200 • Hardware v. 1.1 • Firmware v. 1.8.1.0	ADA Ballot Marking Device	AM0208470626, AM0208970638, AM0307420270, AM0206443734, AM0206442952, AM0208470705, AM0208470828, AM0307431421
DS850 • Hardware v. 1.0 • Firmware v. 2.4.0.0	A high-speed, digital scan central ballot counter. During scanning, the DS850 prints a continuous audit log to a dedicated audit log printer and can print results directly from the scanner to a second connected printer.	DS850: DS8509420009 Cart: 57936-02 Laser Printer Oki B430dn: AF97052470A0 UPS APC-RS 1500: BB0932033646 Dot Matrix Printer Oki 420: AE72011853C0
DS850 • Hardware v. 1.0 • Firmware v. 2.4.0.0	A high-speed, digital scan central ballot counter. During scanning, the DS850 prints a continuous audit log to a dedicated audit log printer and can print results directly from the scanner to a second connected printer.	DS850: DS8509420037 Cart: 59087.01 Cart02 Laser Printer Oki B430dn: AK16009803A0 UPS APC-RS 1500: 8B0848R49224 Dot Matrix Printer Oki 420: AE72011775C0
DS850 • Hardware v. 1.0 • Firmware v. 2.4.0.0	A high-speed, digital scan central ballot counter. During scanning, the DS850 prints a continuous audit log to a dedicated audit log printer and can print results directly from the scanner to a second connected printer.	DS850: DS8511090075 Cart: 59087.01 Cart03 Laser Printer Oki B430dn: AL03021036A0 UPS APC-RS 1500: JB1103003923 Dot Matrix Printer Oki 420: AE72036776C0
DS850 • Hardware v. 1.0 • Firmware v. 2.4.0.0	A high-speed, digital scan central ballot counter. During scanning, the DS850 prints a continuous audit log to a dedicated audit log printer and can print results directly from the scanner to a second connected printer.	DS850: DS858511090074 Cart: T58836.01 Cart01 Laser Printer Oki B430dn: AL03021044A0 UPS APC-RS 1500: BB0907016404 Dot Matrix Printer Oki 420: AE72011780C0
Ballot Box Hardware v. 1.2,1.3	Plastic Ballot Box	E076, E089, E099, T59087-Box 2, T59087-Box 3, T59087-Box 5
Ballot Box Hardware v. 1.0,1.1,1.2	Metal Box with Diverter	E015, E017, T59087 –Metal Box-12, T59087 – Metal Box-13

3.0 MATERIALS REQUIRED FOR TESTING (Continued)

3.2 Equipment (Continued)

Table 3-2 EVS 5.0.0.0 Voting System Equipment Description (Continued)

Equipment	Description	Serial Numbers
EMS Client Laptop	Dell Latitude E6410	2FD65Q1
EMS Server	Dell T710	5PZ6VR1
EMS Client Desktop	Dell OptiPlex 980	3TZLFQ1
Ethernet Switch	Dell Power Connect	HNC67M1
Ballot on Demand Printer	OKI C9650	AF85027113A0
Report Printer	HP LaserJet 4050N	USQX074394
Headphones	Avid FV 60	HP-57936-1, HP-57936-2, HP-57936-3, HP-57936-4, HP-57936-5, HP-57936-6, HP-57936-7, HP-57936-8 and HP-57936-9

In order to perform the software witness and trusted builds, the equipment in Table 3-3 shall be used:

Table 3-3 EVS 5.0.0.0 Voting System Build Machine Description

Equipment	Manufacturer	Version/Model	Serial Number	COTS/Non-COTS
Build 1	Dell Optiplex 760	Processor: Intel Duo Core E8400 Wolfdale Memory: 4x 1GB, 800 Mhz Ram Hard Drive Capacity: 80 GB	6D7DJG1	COTS
Build 2	Dell Optiplex 760	Processor: Intel Duo Core E8400 Wolfdale Memory: 4x 1GB, 800 Mhz Ram Hard Drive Capacity: 80 GB	6DCKJG1	COTS
Build 3	Dell Precision T3500	Processor: Intel X5650 2.66/6.4 12MB Xeon Westmere Memory: 1x 2GB, 1333 Mhz Ram Hard Drive Capacity: 160 GB	15TMMN1	COTS
Build 4	Dell Precision T3500	Processor: Intel X5650 2.66/6.4 12MB Xeon Westmere Memory: 1x 2GB, 1333 Mhz Ram Hard Drive Capacity: 160 GB	15TNMN1	COTS

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3.0   MATERIALS REQUIRED FOR TESTING (Continued)

3.3   Test Support Materials

This subsection enumerates any and all test support materials needed to perform voting system testing. The scope of testing determines the quantity of a specific material required.

The test materials in Table 3-4 are required to support the EVS 5.0.0.0 Voting System certification testing.

Table 3-4 EVS 5.0.0.0 Voting System Test Support Materials

Test Material	Quantity	Make	Model
8 ½" X 11" Paper in Speed Loading Box (2700 Sheets)	4	Dot Matrix	951027
COTS Printer	1	EPSON LQ-590	FSQY140868
Security Seals	5000	Intab	800-0038R
Security Locks	20	E. J. Brooks	86022
	25	E. J. Brooks	6024
	50	American Casting Corp.	00561-03
ES&S Pens	20	BIC	Grip Roller
Security Sleeves	7	ES&S	PS-S7-936-XX(1-7) *
CF Card Reader	1	SanDisk	018-6305
Magnifier	3	---	---
Blue Security Ballot Storage/Transport Box	2	---	---
Headphone Covers	30	---	---
Paddles (yes/no)	3	---	---
Transport Media (USB Flash Drives)	Delkin	512 MB Capacity	Wyle-assigned numbers: TM-XXX *
	Delkin	1.0 GB Capacity	Wyle-assigned numbers: TM-XXX *
	Delkin	2.0 GB Capacity	Wyle-assigned numbers: TM-XXX *
	Delkin	4.0 GB Capacity	Wyle-assigned numbers: TM-XXX *
	Delkin	8.0 GB Capacity	Wyle-assigned numbers: TM-XXX *
Compact Flash	Delkin	1.0 GB Capacity	Wyle-assigned numbers: CF-XXX *
	SanDisk	512 MB Capacity	Wyle-assigned numbers: CF-XXX *
	SanDisk	1.0 GB Capacity	Wyle-assigned numbers: CF-XXX *
	SanDisk	2.0 GB Capacity	Wyle-assigned numbers: CF-XXX *
	Toshiba	1.0 GB Capacity	Wyle-assigned numbers: CF-XXX *

* Wyle will assign serial numbers to these items when testing begins.

3.0   MATERIALS REQUIRED FOR TESTING (Continued)

3.4   Deliverable Materials

The materials listed in Table 3-5 are to be delivered as part of the EVS 5.0.0.0 Voting System to the users.

Table 3-5 Deliverable Materials

Deliverable Material	Version	Description
ERM	8.6.0.0	EMS
ElectionWare	4.1.0.0	EMS
ES&S Event Log Service	1.4.0.0	EMS
Removable Media Services	1.3.1.0	EMS
VAT Previewer	1.8.1.0	EMS
DS200	Firmware 2.7.0.0; Hardware 1.2	Precinct ballot scanner
AutoMARK™ A100	Firmware 1.8.1.0; Hardware 1.0	Voter Assist Terminal
AutoMARK™ A200	Firmware 1.8.1.0; Hardware 1.1	Voter Assist Terminal
DS850	Firmware 2.4.0.0; Hardware 1.0	Central ballot scanner
OKI Printer	B430dn	Laser Report Printer
OKI Printer	Microline 420	Dot Matrix Printer
Headphones	Avid FV 60	Stereo headphones
Voting System Overview EVS 5.0.0.0	15.0	TDP Document
ES&S ElectionWare 4.1 Vol I: Administrator's Guide	4.8	TDP Document
ES&S ElectionWare 4.1 Vol II: Define User's Guide	3.8	TDP Document
ES&S ElectionWare 4.1 Vol III: Design User's Guide	3.2	TDP Document
ES&S ElectionWare 4.1 Vol IV: Deliver User's Guide	5.6	TDP Document
ES&S ElectionWare 4.1 Vol V: Results User's Guide	1.5	TDP Document
ES&S DS200 System Operations Procedures	10.1	TDP Document
ES&S DS850 System Operations Procedures	2.4	TDP Document
AutoMARK™ system Operations Procedures	5.0	TDP Document
ES&S ERM System Operations Procedures	8.6	TDP Document
Network Configuration Guide	3.1	TDP Document
EVS Event Logging Service System Operations Procedures	1.0	TDP Document
Voting System Security Specification EVS 5.0.0.0	3.1	TDP Document
Jurisdiction Security Practices Template	1.0.0.1	TDP Document
Hardening the EMS PC Guide	4.0	TDP Document

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4.0 TEST SPECIFICATIONS

Certification testing of the EVS 5.0.0.0 Voting System is to the configuration submitted in the EAC application ESS1105. Wyle-qualified personnel will ensure that all certification testing performed on the manufacturer's voting system follows Wyle's procedures for testing and the specific test cases to ensure the requirements of the EAC 2005 VVSG and EAC Testing and Certification Program Manual are met.

Below is a list of the EAC's Request for Interpretations (RFI) and Notice of Clarifications (NOC) that shall be incorporated in the test campaign:

Interpretations

2012-06 EAC Decision on Use of Public Telecommunications Networks and Data Transmission

2012-05 EAC Decision on Public Telecommunications and Cryptography

2012-04 EAC Decision on Software Setup Validation

2012-03 EAC Decision on Configuration of COTS Products

2012-02 EAC Decision on Transmission of Results (Official and Unofficial Results)

2012-01 EAC Decision on Ballot Handling – Multi-feed

2010-08 EAC Decision on Calling Sequence

2010-07 EAC Decision on Module Length

2010-06 EAC Decision on DRE Accessibility Requirements and Other Accessible Voting stations

2010-05 EAC Decision on Testing of Modifications to a Certified System

2010-04 EAC Decision on Functional Requirements with Respect to Security

2010-03 EAC Decision on Database Coding Conventions

2010-02 EAC Decision on Coding Conventions

2010-01 EAC Decision on Voltage Levels and ESD Test

2009-06 EAC Decision on Temperature and Power Variation

2009-05 EAC Decision on T-Coil Requirements

2009-04 EAC Decision on Audit Log Events

2009-03 EAC Decision on Battery Backup for Central Count Systems

2009-02 EAC Decision on Alternate Languages

2009-01 EAC Decision on VVPAT Accessibility New

2008-12 EAC Decision on Ballot Marking Device/Scope of Testing

2008-10 EAC Decision on Electrical Fast Transient

2008-09 EAC Decision on Safety Testing

2008-08 EAC Decision on Automatic Bar Code Readers

2008-07 EAC Decision on Zero Count to Start Election

2008-06 EAC Decision on Battery Backup for Central Count

2008-05 EAC Decision on Durability

2008-04 EAC Decision on Supported Languages

4.0 TEST SPECIFICATIONS (Continued)

Interpretations (Continued)

2008-03 EAC Decision on OS Configuration

2008-02 EAC Decision on Battery Backup for Optical Scan Voting Machines

2008-01 EAC Decision on Temperature and Power Variation

2007-06 EAC Decision on Recording and Reporting Undervotes

2007-05 EAC Decision on Testing Focus and Applicability

2007-04 EAC Decision on Presentation of Alternative Language

2007-03 EAC Decision on Summative Usability Testing

2007-02 EAC Decision on Variable Names

2007-01 EAC Decision on Accessible Design

Notice of Clarifications

NOC 2012-02 – Clarification of System Identification Tool Functionality

NOC 2012-01 – Clarification of COTS Product Equivalency for De Minimis Change

NOC 2011-01 – Clarification of De Minimis Change Determination Requirements Related to Data

NOC 2009-005 – Development and Submission of Test Plans for Modifications to EAC Certified Systems

NOC 2009-004 – Development and Submission of Test Reports

NOC 2009-003 – De Minimis Change Determination Requirement

NOC 2009-002 - Laboratory Independence Requirement

NOC 2009-001 - Requirements for Test Lab Development and Submission of Test Plans

NOC 2008-003 - EAC Conformance Testing Requirements

NOC 2008-002 - EAC Mark of Certification

NOC 2008-001 - Validity of Prior Non-core Hardware Environmental and EMC Testing

NOC 2007-005 - Voting System Test Laboratory Responsibilities in the Management and Oversight of Third Party Testing

NOC 2007-004 - Voting System Manufacturing Facilities

NOC 2007-003 - State Testing Done in Conjunction with Federal Testing within the EAC Program

NOC 2007-002 - VSTL Work with Manufacturers Outside of Voting System Certification Engagements

NOC 2007-001 - Timely Submission of Certification Application

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4.0   TEST SPECIFICATIONS (Continued)

4.1   Requirements (Strategy of Evaluation)

To evaluate the system test requirements, each section of the EAC 2005 VVSG shall be analyzed to determine the applicable tests. The EAC 2005 VVSG Volume I sections, along with the strategy for evaluation, are described below:

- **Section 2: Functional Requirements** – The requirements in this section shall be tested during the FCA, utilizing the "Wyle Baseline Test Cases" along with test cases specially designed for the EVS 5.0.0.0 Voting System. The data input during these tests shall be the predefined election definitions submitted as part of the Test Plan Package.

- **Section 3: Usability and Accessibility** –   The requirements in this section shall be tested during the Usability Test, utilizing a combination of the "Wyle Baseline Test Cases" and the "Wyle Baseline Usability Test Cases." The data input during this test shall be the predefined election definitions submitted as part of the Test Plan Package.

- **Section 4: Hardware Requirements** – The requirements in this section shall be tested and/or evaluated by trained-Wyle personnel, per Sections 4.4.2 and 6.3.1.

- **Section 5: Software Requirements** – The requirements in this section shall be tested during source code review, TDP review, and FCA. A combination of review and functional testing shall be performed to insure these requirements are met.

- **Section 6: Telecommunication** –   The requirements in this section shall be tested, utilizing the Wyle Telecommunications Test Cases along with test cases specially designed for the EVS 5.0.0.0 Voting System.

- **Section 7: Security Requirements** – The requirements in this section shall be tested during source code review, FCA, and Security Tests.

- **Section 8: Quality Assurance (QA) Requirements** – The requirements in this section shall be tested throughout the test campaign via various methods. The TDP review shall be performed on ES&S QA documentation to determine compliance to EAC 2005 VVSG requirements and the requirements stated in the ES&S QA Program document. All source code shall be checked to ensure that proper QA documentation has been completed. All equipment received for initial testing and follow-up testing shall be checked against ES&S documentation to ensure their QA process is being followed. Wyle personnel will complete the requirements of EAC 2005 VVSG Vol. 2, Section 7, Quality Assurance Testing and Section 1.3.1.5, Focus of Vendor Documentation that requires Wyle personnel to physically examine documents at ES&S's location or conduct an external evaluation utilizing equipment, documents and support information provided by ES&S during the test campaign. Wyle may also choose to interview ES&S's QA staff for further evaluation.

- **Section 9: Configuration Management (CM) Requirements** – The requirements in this section shall be tested throughout the test campaign. The TDP review shall be performed on the ES&S configuration management documentation to determine EAC 2005 VVSG compliance and to further determine whether ES&S is following its documented CM requirements within the TDP. Any anomalies shall be formally reported to ES&S and the EAC. Wyle personnel will conduct an audit of the ES&S CM Program at the ES&S facility at the conclusion of the test campaign.

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4.0 TEST SPECIFICATIONS (Continued)

4.1 Requirements (Strategy of Evaluation) (Continued)

Wyle personnel shall maintain a test log of the procedure(s) employed. This log identifies the system and equipment by model and serial numbers. In the event that the project engineer deems it necessary to deviate from requirements pertaining to the test environment, the equipment arrangement and method of operation, the specified test procedure, or the provision of test instrumentation and facilities, the deviation shall be recorded in the test log. (A discussion of the reasons for the deviation and the effect of the deviation on the validity of the test procedure shall also be provided and approved.)

Wyle utilizes an internal bug tracking system in order to capture and track all issues and discrepancies found during the testing campaign. This allows for all issues and discrepancies to be monitored for reoccurrence, tracks the root cause analysis, and provides a resolution status. Wyle shall verify all items logged into the bug tracking system are resolved prior to the completion of testing and before any recommendation may be made for certification.

The designated Wyle Operating Procedures (WoP's) for this program are listed below together with the identification and a brief description of the hardware and software to be tested and any special considerations that affect the test design and procedure.

The specific Wyle WoP's to be used during testing include the following:

- WoP 1 Operations Status Checks
- WoP 2 Receipt Inspection
- WoP 3 Technical Data Package Review
- WoP 4 Test Plan Preparation *(This document)*
- WoP 5a-d Source Code Review
- WoP 6a-d Security
- WoP 7 Trusted Build
- WoP 8 Electrical Power Disturbance
- WoP 9 Electromagnetic Emissions
- WoP 10 Electrostatic Disruption
- WoP 11 Electromagnetic Susceptibility
- WoP 12 Electrical Fast Transient
- WoP 13 Lightning Surge
- WoP 14 Conducted RF Immunity
- WoP 15 Magnetic Fields Immunity
- WoP 16 Hardware Testing- Bench Handling
- WoP 17 Hardware Testing- Vibration Test
- WoP 18 Hardware Testing-Low Temperature Test
- WoP 19 Hardware Testing- HighTemperature Test
- WoP 20 Hardware Testing-Humidity Test

4.0   TEST SPECIFICATIONS (Continued)

4.1   Requirements (Strategy of Evaluation) (Continued)

- WoP 21 Environmental Operating_Accuracy_Reliability (Temp/Power)

- WoP 22 Usability – Acoustic Test

- WoP 23 Product Safety

- WoP 24 1 – 1g Usability

- WoP 24 2 – 2h Accessibility

- WoP 25 Physical Configuration Audit

- WoP 26 Functional Configuration Audit

- WoP 27 Maintainability

- Wop 28 Availability

- Wop 29 Electrical Supply

- WoP 30 System Integration Test

- WoP 31 Telecommunications

- WoP 34 Test Report

- WoP 36 Vote Recording Requirements

- Wop 40 System Level Stress Test

- WoP 41 Logic & Accuracy

4.2   Rationale for 'Not Applicable' Requirements

The ES&S EVS 5.0.0.0 Voting System is a paper- based precinct counting system. Therefore, all EAC 2005 VVSG requirements intended for DRE were excluded from this test campaign, as well as the following:

- Volume I Section 6 (Telecommunication Requirements)

- Volume I Section 7.5.2-7.5.4 (Telecommunications and Data Transmission)

- Volume I Section 7.6 (Use of Public Communication Networks)

- Volume I Section 7.7 (Wireless Communications)

- Volume I Section 7.9 (Voter Verifiable Paper Audit Trail Requirements)

The rationale for not evaluating the EVS 5.0.0.0 Voting System to the requirements contained in the indicated sections of the EAC 2005 VVSG is described in Table 4-1. Refer to the EAC online matrix tool for specific requirements that are excluded during this test campaign.

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Table 4-1 Not Applicable Requirements

EAC 2005 VVSG Volume I Section	Rationale for 'Not Applicable'
6, 7.5.2-7.5.4	These requirements are written for use on public networks. The ES&S EVS 5.0.0.0 Voting System does not use public networks.
7.6	This section pertains to "Voting systems that transmit data over public telecommunications…" The ES&S EVS 5.0.0.0 Voting System does not support transmission over public networks.
7.7	No wireless technology is present in ES&S EVS 5.0.0.0 Voting System.
7.9	The ES&S EVS 5.0.0.0 Voting System is a paper based system.

4.3 Hardware Configuration and Design

The EVS 5.0.0.0 Voting System is a paper-based precinct voting system using touch-screen and scan technology to scan and validate ballots, provide voter-assisted ballots, and tabulate precinct results. The Election Management System is an application suite consisting of ElectionWare, Election Reporting Manager (ERM), Removable Media Service (RMS), ES&S Event Log Service (UELS), and VAT Previewer. The precinct counting device is the DS200. It is responsible for scanning, validating and tabulating voter ballots at the precinct level. EVS 5.0.0.0 Voting System contains multiple voter assistance terminals. It can be configured with the AutoMARK™ Model A100, A200, or A300 to facilitate special needs voters. The DS850 is the high-speed digital scanner that processes large ballot batches at a central location.

In the EVS 5.0.0.0 Voting System, all EMS functions are handled by proprietary software run on COTS PC/Laptops and Servers. Wyle has determined that these COTS PC/Laptops and Servers are not subject to the hardware test requirements per the EAC 2005 VVSG per "2007-05 Decision on Testing Focus and Applicability." The provided PC/Laptops documented in Section 3, Materials Required For Testing, all contained CE, UL, and FCC labeling.

4.4 Software System Functions

The EVS 5.0.0.0 Voting System software is comprised of multiple applications written in many languages. The system software is broken down into four areas: EMS, Precinct tabulator software acting as firmware, central count software running as firmware and ADA device software running as firmware. The main components and their subcomponents are as follows:

- ElectionWare (Java)
- ElectionWare/SQL
- ElectionWare PaperBallot
- ERM
- Event Log Service
- Removable Media Service
- DS200 – CoNG, HAL, PresentationLayer
- DS850 – CoNG, MCP, UI
- AutoMARK™

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4.0   TEST SPECIFICATIONS (Continued)

4.5   Test Case Design

Wyle uses the V-Model Life Cycle as defined by the Institute of Electrical and Electronics Engineers (IEEE). The IEEE definition of the V-Model Life Cycle uses two concepts "Verification" and "Validation." Wyle's test approach is to use both "Verification" and "Validation" to some degree. There are four basic levels of testing in the V-Model Life Cycle: Software, Component, Integration, System, and Acceptance. Wyle shall be evaluating the EVS 5.0.0.0 Voting System to all four levels.

4.5.1   Hardware Qualitative Examination Design

ES&S submitted the results of previous testing in the form of the following test reports:

- Criterion Technology Test Report Number 091130-1503R, "EMC Qualification Test Report, Election Systems and Software, Digital Scan Central-Count Vote Tabulation System, DS200," dated March 25, 2010.

- Criterion Technology Test Report Number 091014-1481, "EMC Qualification Test Report, Election Systems and Software, Digital Scan Central-Count Vote Tabulation System, DS850(i)," dated August 4, 2010.

Wyle performed a hardware qualitative examination to assess if the testing was performed under the guidelines of the EAC program, if the tests were performed per the EAC 2005 VVSG, and the scope of the engineering changes implemented since test performance. The results from this examination deemed that the some of the previous test results could not be accepted for the current test campaign based on all of the following:

- Firmware versions could not be established.

- Evidence of operational status checks was not present

- Testing occurred prior to the establishment of the EAC program.

- Multiple revisions of firmware since testing had been performed.

Based on the results of the examination, the summary of acceptable testing is provided in Table 4-1. Wyle will verify all hardware during the PCA and those results will determine if the hardware is compliant with the previous tested versions. All testing that is deemed rejected shall be performed by Wyle personnel under this test campaign. The details of those tests are presented in Section 6.0.

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4.0 TEST SPECIFICATIONS (Continued)

4.5 Test Case Design (Continued)

4.5.1 Hardware Qualitative Examination Design (Continued)

Table 4-1 Hardware Test Examination Results

Test/EAC 2005 VVSG Section	Procedure/Description	EVS 5.0.0.0 Voting System Component		
		DS200	DS850	AutoMARK™
Electromagnetic Radiation/4.1.2.9	FCC Part 15 Class B for both radiated and conducted emissions	Accept	Accept	A100 12/06/10 A200 05/18/11 Wyle Labs
Low Temperature/4.1.2.14	MIL-STD-810D minimum temperature shall be -4 degrees F	Reject	N/A	Reject
Vibration/4.1.2.14	MIL-STD-810D, Meth0d 514.3 physical shock and vibration during handling and transport	Reject	N/A	Reject
Lightning Surge/4.1.2.7	IEC 61000-4-5 (1995-02)	Accept	Accept	A100 12/14/10 A200 05/26/11 Wyle Labs
High Temperature/4.1.2.14	MIL-STD-810D, Method 501.2 maximum temperature shall be 140 degrees F	Reject	N/A	Reject
Bench Handling	MIL-STD-810D, Method 516.3 Procedure VI six 4" drops on each edge totaling 24 drops	Reject	N/A	Reject
Electrical Fast Transient/4.1.2.6	IEC 61000-4-4 (2004)	Accept	Accept	A100 12/13/10 A200 05/27/11 Wyle Labs
Humidity Test/4.1.2.14	MIL-STD-810D, Method 501.2 ten 24 hour humidity cycles	Reject	N/A	Reject
Electrostatic Disruption/4.1.2.8	IEC 61000-4-2 (1995-01) 15kV air discharge and 8kV contact discharge	Accept	Accept	A100 12/09/10 A200 06/14/11 Wyle Labs
Electromagnetic Susceptibility/4.1.2.10	IEC 61000-4-3 (2006) electromagnetic field of 10V/m modulated by a 1kHZ, 80% AM modulation at 80MHz to 1000MHz frequency	Accept	Accept	A100 12/16/10 A200 06/09/11 Wyle Labs
Conducted RF Immunity/4.1.2.11	IEC 61000-4-6 (1996-04) conducted radio frequency energy	Accept	Accept	A100 01/17/11 A200 08/05/11 Wyle Labs

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4.0 TEST SPECIFICATIONS (Continued)

4.5 Test Case Design (Continued)

4.5.1 Hardware Qualitative Examination Design (Continued)

Table 4-1 Hardware Test Examination Results (Continued)

Test/EAC 2005 VVSG Section	Procedure/Description	EVS 5.0.0.0 Voting System Component		
		DS200	DS850	AutoMARK™
Magnetic Fields Immunity/4.1.2.12	IEC 61000-4-8 (1993-06) AC magnetic fields of 30 A/m at 60Hz	Accept	Accept	A100 12/15/10 A200 06/13/11 Wyle Labs
Electrical Power Disturbance/4.1.2.5	IEC 61000-4-11 (1994-06) power surges and dips	Accept	Accept	A100 12/10/10 A200 06/01/11 Wyle Labs
Temperature/Power Variation/4.1.2.13	MIL-STD-810D, Method 502.2 and Method 501.2 163 hours at 50 degrees to 95 degrees	Reject	11/23/11 Wyle Labs	Reject
Safety/4.3.8	UL 60950-1 product safety review	Reject*	Accept	Reject*
Maintainability/4.3.4	The ease with which preventive maintenance actions can be performed	Reject	11/8/11 Wyle Labs	Reject
Electrical Supply/4.1.2.4	Meets voltage and power requirements of EAC 2005 VVSG Vol. 1 Section 4.1.2.4	Reject	11/8/11 Wyle Labs	Reject

*Safety testing to be witnessed by Wyle at a third party laboratory

4.5.1.1 Mapping of Requirements to Specific Interfaces

Please refer to the EAC online matrix tool (VRT) for further reference.

4.5.2 Hardware Environmental Test Case Design

The EVS 5.0.0.0 Voting System hardware shall be tested by Wyle's EMI, Dynamics, and Environmental test facilities for testing to the hardware requirements in accordance with Wyle's A2LA certifications 845.01-.03. All EMI testing shall be performed, per the following Wyle 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." These proprietary documents shall be submitted under separate cover for reference. All hardware testing shall be performed, per the guidelines of ANSI/NCSL Z540-1, "Calibration Laboratories and Measuring and Test Equipment, General Requirements," and ISO 10012-1, "Quality Assurance Requirements for Measuring Equipment" and the governing MIL-STD to which the test is required. All pre and post-tests shall be conducted by Wyle-qualified personnel at the Wyle Huntsville, AL, facility.

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4.0   TEST SPECIFICATIONS (Continued)

4.5   Test Case Design (Continued)

4.5.3   Software Module Test Case Design and Data

Wyle implements Component Level Testing during the FCA for each component and subcomponent, exercising the functionality of each component and subcomponent as designed and documented. Wyle will utilize limited structural-based techniques (white-box testing) mainly in the area of Source Code Review, Compliance Builds and Security Testing and Review. Wyle will depend heavily on specification-based techniques (black-box testing) for the individual software components. The most common specification-based techniques applied to the EVS 5.0.0.0 Voting System during the software testing portion of testing shall be "equivalence partitioning" and "boundary value testing."

- "Equivalence Partitioning" shall be used to evaluate specific software functions and data entry points of the EVS 5.0.0.0 Voting System for valid and invalid data during the FCA. For software functions and data entry points, an entry shall be made for a valid data requirement and at least one invalid data requirement to test for normal and abnormal conditions.

- "Boundary Value Testing" shall be used to evaluate specific software functions and data entry points for minimums and maximums during the FCA. For software functions and data entry points, an entry shall be made for all minimum and all maximum documented requirements to test for normal and abnormal conditions. This technique shall be used for numeric ranges as well as non-numeric ranges.

Wyle will document an expected result for each test. The ACCEPT/REJECT criteria at the Component Level will be based on the expected result. If the System Under Test (SUT) performs as expected, the results will be accepted. If the SUT does not perform as expected, the test will be evaluated for tester error. If it is determined there was no tester error, the test will be repeated in an attempt to reproduce the results. If the results can be reproduced and the expected results are not met, the SUT will have failed the test. If the results cannot be reproduced, the manufacturer and VSTL will determine the root cause of the error. If the root cause has been corrected and the SUT performs as expected, then the results will be accepted. If the root cause has not been corrected or the SUT still does not perform as expected, the SUT will have failed the test.

Wyle will document the error and track the error through resolution. Wyle will not move to the next level of testing until all documented errors are resolved to try and minimize errors that might occur farther along in the test campaign. The engineering analysis will be performed to determine what effect the resolution has on the component. A determination will be made whether Regression Testing will be sufficient or a complete re-test is necessary.

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4.0   TEST SPECIFICATIONS (Continued)

4.5   Test Case Design (Continued)

4.5.4   Software Functional Test Case Design and Data

Wyle implements Integration Level Testing primarily focusing on the interface between components and applications. The test approach to be used for the EVS 5.0.0.0 Voting System shall be a bottom-up approach where the lower level components shall be tested first and then used to facilitate the testing of higher-level components. The specification-based technique used by Wyle at the Integration Level is "Use Case." The actors that have been identified to use the EVS 5.0.0.0 Voting System are the following:

- Election Administrator – the actor with responsibility of entering the election definition with translation and audio. This actor is also responsible for maintaining EMS users and the election database.

- Warehouse Technician – the actor responsible for loading the election definition onto DS200, AutoMARK™ VAT, and DS850. This actor also runs diagnostic test and maintains the units.

- Poll Worker- the actor at the precinct location to set up and close down the DS200, AutoMARK™ VAT, and DS850 on Election Day.

- Voter – the actor who physically casts the ballot on Election Day.

- ADA Voter – the actor with special needs who has to vote unassisted on Election Day.

- Election Official – the actor who reports and audits the election result post-Election Day.

"Use Case" shall be used during the FCA with a single pass through each component using only valid data. This pass shall be considered the "Master Copy" of data to be passed between interfacing points of applications during Integration level testing. If a component downstream in the test process needs data from previous processes, the "Master Copy" of data can be used or altered to accelerate the test process. Known tests that will utilize the "Master Copy" of data at the Integration Level are Security and Usability.

If an error occurs between data interfaces or in the process flow, an engineering analysis shall be performed to determine if the error is data, process, or tester error. The ACCEPT/REJECT criteria for Integration Level testing is whether the components and applications interface using the documented process for each actor. If there is an error interfacing between components, the error shall be documented and tracked through resolution. Engineering analysis shall be performed to determine what effect the resolution has on the component. A determination shall be made whether regression testing shall be sufficient or a complete re-test is necessary.

4.5.5   System Level Test Case Design

During System Level Testing, Wyle will test the ability of proprietary software, proprietary hardware, proprietary peripherals, COTS software, COTS hardware, and COTS peripherals to function as a complete system in a configuration of the systems intended use. The EVS 5.0.0.0 Voting System is intended to support both large and small jurisdictions. Wyle's approach for the EVS 5.0.0.0 Voting System shall be to execute System Level Testing with a variety of elections that include various combinations of jurisdictions, parties and styles of ballots.

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4.0   TEST SPECIFICATIONS (Continued)

4.5   Test Case Design (Continued)

4.5.5   System Level Test Case Design (Continued)

The ACCEPT/REJECT criteria for System Level testing is whether the system can continue in testing. The two scenarios are: ACCEPT or REJECT. 'ACCEPT' is either 1) if no errors are found, or 2) if an error is encountered but the system continues to operate and engineering analysis determines that the root cause does not affect testing. 'REJECT' if an error is encountered and the system is too unstable to continue or engineering analysis determines the root cause could affect further testing. If an error occurs during System Level Testing, the error shall be documented. If the EVS 5.0.0.0 Voting System is able to recover and continue, the test will continue. If the error causes the system to become unstable, the test shall be halted. All errors documented during System Level Testing shall be tracked through resolution. The engineering analysis shall be performed to determine what effect the resolution has on the system. A determination shall be made by Wyle's senior level engineer whether regression testing shall be sufficient or a complete re-test is necessary.

Wyle implements Acceptance Level testing focusing on all the data collected during the entire test campaign along with performing the "Trusted Build" for the system. All data from pre-testing, hardware testing, software testing, functional testing, security testing, volume testing, stress testing, telecommunication testing, usability testing, accessibility testing, and reliability testing activities shall be combined to ensure all requirements that are supported by the EVS 5.0.0.0 Voting System have been tested to the EAC 2005 VVSG. All requirements shall be checked against the test data to ensure the EAC 2005 VVSG requirements are met. Items not supported by the EVS 5.0.0.0 Voting System shall be documented. Any issues documented during testing shall be resolved or annotated in the test report.

Wyle will test every EAC 2005 VVSG requirement supported by the EVS 5.0.0.0 Voting System. Wyle will report all issues discovered during this test campaign to ES&S and the EAC. If Wyle determines there is not enough data to ensure a requirement was met, the test plan will be altered and further testing will be done. The EAC has the final decision as to whether the system meets all the requirements for an EAC-certified system. Wyle will either recommend approval, if the system meets all applicable sections of the VVSG or recommend disapproval if the system does not meet all applicable sections of the VVSG.

4.6   Security Functions

The purpose of the security testing shall be to evaluate the effectiveness of the EVS 5.0.0.0 Voting System in detecting, preventing, logging, reporting and recovering from any security risks identified by simulating attacks on the system. To accomplish this, Wyle has developed internal operating procedures to evaluate the EVS 5.0.0.0 Voting System to the security requirements set forth in the EAC 2005 VVSG. These procedures have been specifically tailored to assess the EVS 5.0.0.0 Voting System to the applicable requirements. Wyle will attempt to defeat the access controls and physical security measures documented in the ES&S technical data package. A threat matrix shall be created to determine the risks and vulnerabilities.

Wyle will utilize a combination of functional testing, source code review, and Fortify SCA to evaluate the EVS 5.0.0.0 Voting System. Wyle will report all issues discovered during this test campaign to ES&S and the EAC. A report containing all findings shall be issued to the EAC as an addendum to the final test report.

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4.0   TEST SPECIFICATIONS (Continued)

4.7   TDP Evaluation

Wyle-qualified personnel will perform a comprehensive review of the ES&S TDP to determine compliance to the EAC 2005 VVSG, EAC requirements, and ES&S-specific requirements. Wyle-qualified personnel utilize a TDP Review Matrix which lists every EAC 2005 VVSG requirement pertaining to TDP review. Wyle-qualified personnel will record the results of the review of each document to the applicable requirements listed in the TDP Review Matrix.

During the TDP review process, each document shall be reviewed for completeness, clarity, and correctness, and continuity between the TDP documents. The review results shall be formally reported to ES&S for resolution. If a revised document is received, it shall be re-reviewed as discussed in this section. The TDP shall be continuously reviewed during the entire testing process as these documents shall be utilized to set up the systems, verify correct operational results and numerous other tests. At the end of the TDP review process, an Anomaly Report shall be issued listing the non-compliant items on a document-by-document basis. A listing of all documents contained in the EVS 5.0.0.0 Voting System TDP is provided in Table 4-2.

Table 4-2 EVS 5.0.0.0 Voting System TDP Documents

EVS 5.0.0.0 TDP Documents	Version	Doc #	Document Code
Voting System Overview	2.0	01-01	EVS5000_OVR00
System Functionality Description			
System Functionality Description – Voting System	1.0	02-01	EVS5000_SFD00
System Hardware Specification			
System Hardware Specification – DS850	1.0	03-01	EVS5000_SHS00_DS850
System Hardware Specification – DS200	1.0	03-02	EVS5000_SHS00_DS200
AutoMARK™ System Hardware Overview	3.0	03-04	AutoMARK™_ESS_System_Hardware_ Overview_AQS-18-5002-000-S
AutoMARK™ System Hardware Specification	3.0	03-05	AutoMARK™_ESS_System_Hardware_ Specification_AQS-18-5000-001-F
Software Design and Specification			
Software Design and Specification – ES&S Event Log Service	1.0	04-01	EVS5000_SDS00_UELS
Software Design and Specification - ElectionWare	2.0	04-02	EVS5000_SDS00_ElectionWare
Software Design and Specification – ERM	1.0	04-03	EVS5000_SDS00_ERM
Software Design and Specification – DS850	2.0	04-04	EVS5000_SDS00_DS850
Software Design and Specification – DS200	3.0	04-05	EVS5000_SDS00_DS200
Software Design and Specification – AutoMARK™	1.0	04-06	EVS5000_SDS00_AutoMARK™ SDS Overview

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4.0   TEST SPECIFICATIONS (Continued)

4.7   TDP Evaluation (Continued)

Table 4-2 EVS 5.0.0.0 Voting System TDP Documents (Continued)

EVS 5.0.0.0 TDP Documents	Version	Doc #	Document Code
System Test/Verification Specification			
Voting System Test Plan	1.0	05-01	EVS5000_STP00
Test Cases - ElectionWare: Manage	2.13.2012	05-02	EVS5000_TC00_ElectionWare01_Manage
Test Cases - ElectionWare: Define	2.15.2012	05-03	EVS5000_TC00_ElectionWare02_Define
Test Cases - ElectionWare: Design	2.09.2012	05-04	EVS5000_TC00_Electionware03_Design
Test Cases - ElectionWare: Deliver	2.15.2012	05-05	EVS5000_TC00_Electionware04_Deliver
Test Cases - ElectionWare: Resolve	2.03.2012	05-06	EVS5000_TC00_Electionware05_Resolve
Test Cases - ERM	2.06.2012	05-07	EVS5000_TC00_ERM
Test Cases - DS850	2.15.2012	05-08	EVS5000_TC00_DS850
Test Cases - DS200	2.14.2012	05-09	EVS5000_TC00_DS200
Test Cases - AutoMARK™	2.14.2012	05-10	EVS5000_TC00_AutoMARK™
System Security Specification			
System Security Specification	1.0	06-01	EVS5000_SSS00
AutoMARK™ System Security Specifications	4.0	06-02	AutoMARK™ ESS System Security Specification AQS-18-5002-001-S
System Operations Procedure			
System Operations Procedures - UELS	1.0	07-01	EVS5000_SOP00_UELS
User's Guide- ElectionWare Admin	0.3	07-02	EVS5000_SOP00_ElectionWare02_Admin
User's Guide- ElectionWare Define	0.3	07-03	EVS5000_SOP00_ElectionWare02_Define
User's Guide - ElectionWare Design	0.3	07-04	EVS5000_SOP00_ElectionWare03_Design
User's Guide - ElectionWare Deliver	0.3	07-05	EVS5000_SOP00_ElectionWare04_Deliver
User's Guide - ElectionWare Results	0.3	07-06	EVS5000_SOP00_ElectionWare05_Results
User's Guide - ERM	1.0	07-07	EVS5000_SOP00_ERM
Operator's Guide - DS850	3.0	07-08	EVS5000_SOP00_DS850
Operator's Guide - DS200	1.0	07-09	EVS5000_SOP00_DS200
System Operations Procedures - AutoMARK™	2.0	07-10	EVS5000_SOP00_AMVAT
Network Configuration Guide	2.1	07-12	EVS5000_SOP00_NetworkConfigGuide

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4.0   TEST SPECIFICATIONS (Continued)

4.7   TDP Evaluation (Continued)

Table 4-2 EVS 5.0.0.0 Voting System TDP Documents (Continued)

EVS 5.0.0.0 TDP Documents	Version	Doc #	Document Code
System Maintenance Manuals			
Maintenance Guide- DS850	1.0	08-01	EVS5000_SMM00_DS850
Maintenance Guide- DS200	1.0	08-02	EVS5000_SMM00_DS200
Maintenance Guide- AutoMARK™	2.0	08-03	EVS5000_SMM00_AMVAT
Personnel Deployment and Training			
Personnel Deployment and Training Recommendations	1.0	09-01	U3400R1_TRN00_ESSTraining Requirements
Training Manual – Election Reporting Manager	12.13.2011	09-02	U3400R1_TRN00_ERM_ PreElection
Training Checklists	---	09-03	Multiple Documents
Configuration Management Plan			
ES&S Configuration Management Plan	2.0	10-1	U3400R1_CMP00
CM Plan Appendices	---	10-2	Multiple Documents
QA Program			
Quality Assurance Program (QAP) – Manufacturing	1.0	11-01	U3400R1_QAP00_MNF
ES&S ECO Policy and Procedures	1.0	11-02	EVS5000_QAP00_MN03_ECOPolicies and Procedures
QAP – Software and Firmware	1.0	11-03	U3400R1_QAP00_SWF
Other TDP Documents			
ES&S Ballot Production Guide	10.31.2011	13-01	U3400R1_ORPT02_BallotProduction Guide

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4.0   TEST SPECIFICATIONS (Continued)

4.8   Source Code Review

As part of the testing activities, the EVS 5.0.0.0 Voting System source code shall be reviewed to the EAC 2005 VVSG coding standards and the manufacturer-supplied coding standards. The review shall be conducted, per the guidelines described in the following paragraphs.

As the source code is received, a SHA1 hash value shall be created for each source code file. The source code team will then conduct a visual scan of every line of source code for an initial review and every line of modified source code for a re-review, for all languages other than Java. For applications written in Java, the vendor will have the option of choosing a traditional review or an automated source review for determining coding convention compliance. This is done to identify any violation of EAC 2005 VVSG coding standards or manufacturer-supplied coding standards. Each identified violation shall be recorded by making notes of the standards violation along with directory name, file name, and line number. A technical summary report of all identified standards violations shall be sent to ES&S for resolution. ES&S will then correct all standards violations and re-submit the source code for re-review. This process shall be repeated as many times as necessary, until all identified standards violations are corrected. All reports shall be included in an anomaly report for source code and submitted to the EAC and included in the final test report.

A "Compliance Build" shall be built by Wyle from the reviewed source code using the Compliance Build Procedure to build iterative builds throughout the test campaign. This process follows the documented procedure in the EAC Testing and Certification Program Manual, Version 1.0, effective date January 1, 2007 with two exceptions: The image products will not be submitted to the EAC, and no manufacturer representative shall be required to be present or on-site for these builds. The final step in the source code review shall be to create a "Trusted Build" from the reviewed source code.

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4.0   TEST SPECIFICATIONS (Continued)

4.8   Source Code Review (Continued)

The "Trusted Build" follows the steps below:

- Clean the build machine

- Retrieve the compliant source code

- Retrieve the installation media for OS, compilers, and build software

- Construct the build environment

- Create digital signatures of the build environment

- Load the compliant source code into the build environment

- Create a digital signature of the pre build environment

- Create a disk image of the pre-build environment

- Build executable code

- Create a digital signature of executable code

- Create a disk image of the post-build environment

- Build installation media

- Create a digital signature of the installation media

- Install executable code onto the system to validate the software/firmware

- Deliver source code with digital signature, disk image of pre-build environment with digital signatures, disk image of post-build environment with digital signatures, executable code with digital signatures, and installation media with signatures to EAC Approved Repository.

The "Trusted Build" for the EVS 5.0.0.0 Voting System includes source code, data, and script files, in clear text form. The build also includes COTS software on commercially-available media, COTS software downloaded by the VSTL, COTS software verified by digital signature from the software supplier, and picture and sound files in binary format provided by ES&S. The first step of the process is to clean the hard drives by writing zeros to every spot on the hard drive, so the drive is cleared of existing data. The operating system will then be loaded and the applications from the VSTL reviewed source along with the VSTL verified COTS software shall be built. The final step is installing the applications on the hardware.

4.9   QA and CM System Review

Both the ES&S QA Plan and CM Plan shall be reviewed to determine compliance with EAC 2005 VVSG Volume II Section 2, and Volume I, Sections 8 and 9, EAC stated requirements and with the requirements of the internal ES&S documentation. Also, the ES&S TDP documentation package shall be reviewed to determine if the ES&S QA Plan and the CM Plan are being followed. The results of the TDP review shall be entered on a spreadsheet as previously described in Section 4.6 of this test plan. The results of the TDP review, including the QA and CM compliance results of the Technical Data Package Review, will also be included in the final Test Report.

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5.0 TEST DATA

5.1 Test Data Recording

All equipment utilized for test data recording shall be identified in the test data package. For hardware environmental and operational testing, the equipment shall be listed on the Instrumentation Equipment Sheet for each test. The output test data shall be recorded in an appropriate manner as to allow for data analysis. For source code and TDP reviews, results shall be compiled in output reports and submitted to ES&S for resolution.

Additionally, all test results, including functional test data, shall be recorded on the relevant Wyle Laboratories' Operating Procedure and Test Cases. Results will also be recorded real-time in engineering log books. Incremental reports shall be submitted to ES&S and the EAC at the completion of major test areas to communicate progress and results as deemed necessary by the stakeholders.

5.2 Test Data Criteria

Wyle will evaluate all test results against the ES&S-provided technical documentation for the EVS 5.0.0.0 Voting System and the requirements set forth in the EAC 2005 VVSG. The EVS 5.0.0.0 Voting System shall be evaluated for its performance against the EAC 2005 VVSG. The acceptable range for system performance and the expected results for each test case shall be derived from the EVS 5.0.0.0 Voting System documentation and the 2005 VVSG. Per the EAC 2005 VVSG, these parameters shall encompass the test tolerances, the minimum number of combinations or alternatives of input and output conditions that can be exercised to constitute an acceptable test of the parameters involved, and the maximum number of interrupts, halts or other system breaks that may occur due to non-test conditions (excluding events from which recovery occurs automatically or where a relevant status message is displayed).

5.3 Test Data Reduction

Test data shall be processed and recorded in the relevant Wyle Operating Procedures and Test Cases. Results will also be recorded real-time in engineering log books.

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6.0 TEST PROCEDURES AND CONDITIONS

The following subsections describe test procedures and a statement of the criteria by which readiness and successful completion shall be indicated and measured.

6.1 Facility Requirements

All testing shall be conducted at the Wyle Huntsville, AL facility unless otherwise annotated. The hardware environmental non-operating (storage) and operating testing shall be conducted, utilizing an adequately sized environmental test chamber or dynamic shaker system equipped with the required data gathering support equipment. All remaining operating hardware tests shall be conducted at the appropriate test site with the required support equipment. All instrumentation, measuring, and test equipment used in the performance of this test program shall be listed on the Instrumentation equipment Sheet for each test and shall be calibrated in accordance with Wyle Laboratories' Quality Assurance Program, which complies with the requirements of ANSI/NCSL Z540-1 and ISO 10012-1. Standards used in performing all calibrations are traceable to the National Institute of Standards and Technology (NIST) by report number and date. When no national standards exist, the standards are traceable to international standards or the basis for calibration is otherwise documented.

Unless otherwise specified herein, all remaining tests, including system level functional testing, shall be performed at standard ambient conditions:

- Temperature: $25°C \pm 10°C$ ($77°F \pm 18°F$)
- Relative Humidity: 20 to 90%
- Atmospheric Pressure: Local Site Pressure

Unless otherwise specified herein, the following tolerances shall be used:
- Time $\pm 5\%$
- Temperature $\pm 3.6°F$ (2°C)
- Vibration Amplitude $\pm 10\%$
- Vibration Frequency $\pm 2\%$
- Random Vibration Acceleration
  20 to 500 Hertz ± 1.5 dB
  500 to 2000 Hertz ± 3.0 dB
- Random Overall grms ± 1.5 dB
- Acoustic Overall Sound Pressure Level $+4/-2$ dB

6.2 Test Set-Up

All voting machine equipment (hardware and software) shall be received and documented, utilizing Wyle Receiving Ticket (WL-218, Nov'85) and proper QA procedures. When voting system hardware is received, Wyle Shipping and Receiving personnel will notify Wyle's QA personnel. With Wyle QA personnel present, each test article shall be unpacked and inspected for obvious signs of degradation and/or damage that may have occurred during transit. Noticeable degradation and/or damage, if present, shall be recorded, photographs shall be taken, and the ES&S Representative shall be notified. Wyle's QA personnel shall record the serial numbers and part numbers. Comparison shall be made between those numbers recorded and those listed on the shipper's manifest. Any discrepancies noted shall be brought to the attention of the ES&S Representative for resolution. TDP items, including all manuals, and all source code modules received shall be inventoried and maintained by the Wyle Project Engineer assigned to testing.

6.0   TEST PROCEDURES AND CONDITIONS

6.2   Test Set-Up (Continued)

For test setup, the system shall be configured as would for normal field use. This includes connecting all supporting equipment and peripherals. Wyle personnel will properly configure and initialize the system, and verify that it is ready to be tested, by following the procedures detailed in the EVS 5.0.0.0 Voting System technical documentation. Wyle will develop an Operational Status Check to be performed prior to and immediately following each hardware test. Wyle will develop the system performance levels to be measured during operational tests.

Wyle has developed eight election definitions that could be used during this test campaign:

Operational Status Check

This election definition will exercise the operational status of the equipment, during the operational tests, and prior to and immediately following the non-operational hardware tests.

General Election: GEN-01

A basic election held in four precincts, one of which is a split precinct, containing nineteen contests compiled into four ballot styles. Five of the contests are in all four ballot styles. The other fifteen contests are split between at least two of the precincts with a maximum of four different contests spread across the four precincts. This election was designed to functionally test the handling of multiple ballot styles, support for at least two languages, support for common voting variations, and audio support for at least two languages.

- Closed Primary: No
- Open Primary: No
- Partisan Offices: Yes
- Non-Partisan Offices: Yes
- Write-in Voting: Yes
- Primary Presidential Delegation Nominations: No
- Ballot Rotation: No
- Straight Party Voting: Yes
- Cross-Party Endorsement: No
- Split Precincts: Yes
- Vote for N of M: Yes
- Recall Issues, with Options: No
- Cumulative Voting: No

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6.0 TEST PROCEDURES AND CONDITIONS (Continued)

6.2 Test Set-Up (Continued)

General Election: GEN-01

- Ranked Order Voting: No
- Provisional or Challenged Ballots: Yes
- Early Voting: No

This election was designed to functionally test the handling of multiple ballot styles, support for at least two languages, support for common voting variations, and audio support for at least two languages. Test Pattern 8 was chosen for audio input in an alternative language because it is a basic voting pattern using an ADA device. Test pattern 9 was chosen for audio input to demonstrate support for write-in voting using an ADA device. Test Pattern 3 was chosen for Spanish language input because it is a basic vote pattern using Spanish. Test Pattern 10 was chosen for Spanish language input because it exercises write-in using Spanish.

General Election: GEN-02

A basic election held in three precincts. This election contains fifteen contests compiled into three ballot styles. Ten of the contests are in all three ballot styles with the other five split across the three precincts. This election was designed to functionally test the handling of multiple ballot styles, support for ballot rotation, support for two languages, support for complex voting variations, and audio support for multiple languages.

- Closed Primary: No
- Open Primary: No
- Partisan Offices: Yes
- Non-Partisan Offices: Yes
- Write-in voting: Yes
- Primary Presidential Delegation Nominations: No
- Ballot Rotation: Yes
- Straight Party Voting: No
- Cross-Party Endorsement: No
- Split Precincts: No
- Vote for N of M: Yes
- Recall Issues, with Options: Yes
- Cumulative Voting: No
- Ranked Order Voting: Yes
- Provisional or Challenged Ballots: No
- Early Voting: Yes

This election was designed to functionally test the handling of multiple ballot styles, support for ballot rotation, support for two languages, support for complex voting variations, and audio support for multiple languages. The election shall be an early voting election with at least one machine running all precincts.

6.0   TEST PROCEDURES AND CONDITIONS (Continued)

6.2   Test Set-Up (Continued)

Voting options for overvoting and undervoting shall be exercised. Ballots 7 and 16 were selected for Spanish based language input. Ballots 13 and 17 were selected for casting of ballot using the ADA Audio capability.

General Election: GEN-03

A basic election held in two precincts. This election contains eight contests compiled into two ballot styles. Four of the contests are in both ballot styles. The other four contests are split between the two precincts.

This election was designed to functionally test the handling of multiple ballot styles, support for at least two languages, support for common voting variations, and audio support for at least three languages and an ADA binary input device.

- Closed Primary: No
- Open Primary: No
- Partisan Offices: Yes
- Non-Partisan Offices: Yes

- Write-in Voting: Yes
- Primary Presidential Delegation Nominations: No
- Ballot Rotation: No
- Straight Party voting: No
- Cross-Party Endorsement: No
- Split Precincts: No
- Vote for N of M: No
- Recall Issues, with Options: No
- Cumulative Voting: No
- Ranked Order Voting: No
- Provisional or Challenged Ballots: Yes
- Early Voting: No

This election was designed to functionally test the handling of multiple ballot styles, support for at least three languages including a character-based language, support for common voting variations, and audio support for at least three languages and an ADA binary input device. Test patterns 3 and 4 were chosen for input in the Spanish language because they are a basic voting pattern with a write-in. Test patterns 5 and 6 were chosen for audio input using the Spanish language to demonstrate support for write-in voting using an ADA device with and alternative language. Test pattern 7 was chosen for character-based language input because it is a basic vote pattern using Korean. Test pattern 8 was chosen for character-based language using an ADA device to demonstrate support for character-based ADA device support. Test pattern 9 was chosen for binary input to show support for ADA binary input device. Test pattern 10 was chosen for binary input using ADA audio deceive to show support for binary input and ADA support.

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6.0 TEST PROCEDURES AND CONDITIONS (Continued)

6.2 Test Set-Up (Continued)

Primary Election: PRIM-01

An open primary election in two precincts, containing thirty contests compiled into five ballot styles. Each ballot style contains six contests. This election was designed to functionally test an open primary with multiple ballot styles, support for two languages, and support for common voting variations.

- Closed Primary: Yes
- Open Primary: No
- Partisan Offices: Yes
- Non-Partisan Offices: Yes
- Write-in Voting: Yes
- Primary Presidential Delegation Nominations: No
- Ballot Rotation: No
- Straight Party Voting: No
- Cross-Party Endorsement: No
- Split Precincts: Yes
- Vote for N of M: Yes
- Recall Issues, with Options: No
- Cumulative Voting: No
- Ranked Order Voting: No
- Provisional or Challenged Ballots: Yes
- Early Voting: No

This election designed to functionally test an open primary with multiple ballot styles, support for two languages, and support for common voting variations. Test patterns 5 and 18 are input in an alternative language. Test patterns 8 and 18 are input using an ADA audio device. These patterns were selected to exercise the write-in functionality in a primary election.

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6.0   TEST PROCEDURES AND CONDITIONS (Continued)

6.2   Test Set-Up (Continued)

Primary Election: PRIM-02

A basic election held in two precincts. This election contains thirteen contests compiled into three ballot styles. One contest is in all three ballot styles and all other contests are independent. This election was designed to functionally test the handling of multiple ballot styles, support for Primary presidential delegation nominations, support for two languages, support for complex voting variations, and audio support for multiple languages.

- Closed Primary: No
- Open Primary: Yes
- Partisan Offices: Yes
- Non-Partisan Offices: Yes
- Write-in Voting: Yes
- Primary Presidential Delegation Nominations: No
- Ballot Rotation: No
- Straight Party Voting: No
- Cross-Party Endorsement: Yes
- Split Precincts: No
- Vote for N of M: Yes
- Recall Issues, with Options: No
- Cumulative Voting: No
- Ranked Order Voting: No
- Provisional or Challenged Ballots: No
- Early Voting: No

This election was designed to functionally test the handling of multiple ballot styles, support for Primary presidential delegation nominations, support for two languages, support for complex voting variations, and audio support for multiple languages. The election shall be an open primary election with one machine running for each precinct. Voting options for Over-voting, Under-voting and write-in voting shall be exercised. Ballots 5 and 18 were selected for Spanish based language input. Ballots 8 and 17 were selected for casting of ballot using the ADA Audio capability.

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6.0 TEST PROCEDURES AND CONDITIONS (Continued)

6.2 Test Set-Up (Continued)

Primary Election: PRIM-03

A basic election held in two precincts. This election contains ten contests and is compiled into two ballot styles. Two of the contests are in both ballot styles. The other eight contests are split between the two parties' ballots. This election was designed to functionally test the handling of multiple ballot styles, support for at least two languages, support for common voting variations, and audio support for at least three languages and an ADA binary input device.

- Closed Primary: Yes
- Open Primary: No
- Partisan Offices: Yes
- Non-Partisan Offices: Yes
- Write-in Voting: Yes
- Primary Presidential Delegation Nominations: No
- Ballot Rotation: No
- Straight Party Voting: No
- Cross-Party Endorsement: No
- Split Precincts: No
- Vote for N of M: No
- Recall Issues, with Options: No
- Cumulative Voting: No
- Ranked Order Voting: No
- Provisional or Challenged Ballots: Yes
- Early Voting: No

This election was designed to functionally test the handling of multiple ballot styles, support for at least three languages including an Ideographic based language, support for common voting variations, and audio support for at least three languages and an ADA binary input device. Test patterns 3 and 4 were chosen for input in the Spanish language because it is a basic voting pattern with a write-in. Test patterns 5 and 6 were chosen for audio input using the Spanish language to demonstrate support for write-in voting using an ADA device with and alternative language. Test pattern 7 was chosen for Ideographic based language input because it is a basic vote pattern using Korean. Test pattern 8 was chosen for character based language using an ADA device to demonstrate support for Ideographic based ADA device support. Test pattern 9 was chosen for binary input to show support for ADA binary input device. Test pattern 10 was chosen for binary input using ADA audio deceive to show support for binary input and ADA support.

Wyle has developed three special test cases and election definitions that shall be used during the analysis phase of ballot skew, mark recognition and logging requirements.

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6.0 TEST PROCEDURES AND CONDITIONS (Continued)

6.3 Test Sequence

The components of the EVS 5.0.0.0 Voting System will undergo all applicable tests in the EAC 2005 VVSG. The following sections provide a list of each test, a brief description of each, and a location of each test. Wyle will utilize a combination of functional testing, source code review, and TDP reviews to evaluate the system performance. The list of tests is not in a specific sequence.

6.3.1 Hardware Test Descriptions

Hardware tests are divided into two categories: Non-Operating and Operating. The Non-Operating tests are intended to simulate the storage and transport of equipment between the storage facility and the polling location. The Operating tests are intended to simulate conditions that the EUT may encounter during operation. Prior to and immediately following Non-Operating and Operating test, the EUT shall be subjected to an operational status check.

The Non-Operating tests include the following:

Low Temperature – This requirement addresses a range of tests for voting machines and precinct counters, as such devices are stored between elections and are transported between the storage facility and polling place, to meet specific minimum performance standards for low temperatures.

High Temperature – This test addresses a range of tests for voting machines and precinct counters, as such devices are stored between elections and are transported between the storage facility and polling place, to meet specific minimum performance standards for high temperature.

Humidity Test – This requirement addresses a range of tests for voting machines and precinct counters, as such devices are stored between elections and are transported between the storage facility and polling place, to meet specific minimum performance standards.

Vibration – This requirement addresses a range of tests for voting machines and precinct counters, as such devices are stored between elections and are transported between the storage facility and polling place, to meet specific minimum performance standards for vibration.

Bench Handling – The bench handling test simulates stresses faced during maintenance and repair of voting machines and ballot counters.

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6.0   TEST PROCEDURES AND CONDITIONS (Continued)

6.3   Test Sequence (Continued)

6.3.1   Hardware Test Descriptions (Continued)

The Operating tests include the following:

Electromagnetic Radiation – This test verifies that radiated and conducted emissions from the voting system hardware do not exceed the allowable limits of Title 47CFR, Part 15, Class B. The test for electromagnetic radiation shall be conducted in compliance with the FCC Part 15 Class B requirements by testing per ANSI C63.4 (Volume II, Section 4.8.b).

Lightning Surge – This test demonstrates the voting system's hardware to withstand power line lightning surges during normal operation. This test is equivalent to the procedure of IEC 61000-4-5. The test for lightning surge protection shall be conducted in compliance with the test specified in IEC 61000-4-5 (Volume II, Section 4.8.f).

Electrical Fast Transient – This test demonstrates the voting system's hardware to withstand electrical fast transients during normal operation. This test is equivalent to the procedure of IEC 61000-4-4. The test for electrical fast transient protection shall be conducted in compliance with the test specified in IEC 61000-4-4 (Volume II, Section 4.8.e).

Electrostatic Disruption – This test demonstrates the voting system's hardware to withstand electrostatic discharges during normal operation. This test is equivalent to the procedure of IEC 61000-4-2. The test for electrostatic disruption shall be conducted in compliance with the test specified in IEC 61000-4-2 (Volume II, Section 4.8.c).

Electromagnetic Susceptibility – This test demonstrates the voting system's hardware to withstand radiated electromagnetic fields during normal operation. This test is equivalent to the procedure of IEC 61000-4-3. The test for electromagnetic susceptibility shall be conducted in compliance with the test specified in IEC 61000-4-3 (Volume II, Section 4.8.d.).

Conducted RF Immunity – This test demonstrates the voting system's hardware ability to withstand conducted RF energy on power and I/O lines during normal operation. This test is equivalent to the procedure of IEC 61000-4-6. The test for conducted RF immunity shall be conducted in compliance with the test specified in IEC 61000-4-6 (Volume II, Section 4.8.g).

Magnetic Fields Immunity – This test demonstrates the voting system's hardware ability to withstand Magnetic Fields during normal operation. This test is equivalent to the procedure of IEC 61000-4-8. The test for AC magnetic fields RF immunity shall be conducted in compliance with the test specified in IEC 61000-4-8 (Volume II, Section 4.8.h).

Electrical Power Disturbance – This test demonstrates the voting system's hardware to withstand power disturbances during normal operation. This test is equivalent to the procedure of IEC 61000-4-11 (Volume I, Section 4.1.2.5). The test for power disturbance disruption shall be conducted in compliance with the test specified in IEC61000-4-11 (Volume II, Section 4.8.a).

Temperature Power Variation – The Environmental Test, Operating, subjects the system hardware to varying temperatures and voltages, demonstrating hardware/data recording accuracy reliability Mean-Time-Between-Failure (MTBF) of 163 hours.

6.0 TEST PROCEDURES AND CONDITIONS (Continued)

6.3 Test Sequence (Continued)

6.3.1 Hardware Test Descriptions (Continued)

<u>Maintainability</u> – Maintainability represents the ease with which preventive and corrective maintenance actions can be performed based on the design characteristics of equipment and software and the processes the manufacturer and election officials have in place for preventing failures and for reacting to failures.

<u>Electrical Supply</u> – This requirement addresses the battery power source for providing electrical supply during a power failure.

<u>Safety</u> – a safety inspection shall be performed to verify that the EUT meets the following requirements for safety:

a. All voting systems and their components shall be designed to eliminate hazards to personnel or to the equipment itself.

b. Defects in design and construction that can result in personal injury or equipment damage must be detected and corrected before voting systems and components are placed into service.

c. Equipment design for personnel safety shall be equal to or better than the appropriate requirements of the Occupational Safety and Health Act, Code of Federal Regulations, Title 29, Part 1910.

Safety testing shall be performed off-site at a third party laboratory with Wyle personnel witnessing.

6.3.2 Software Test Description

The software tests include the following:

<u>Source Code Compliance Review</u> – Wyle Laboratories personnel will compare the source code to the manufacturer's software design documentation to ascertain how completely the software conforms to the manufacturer's specifications. Source code inspection shall also assess the extent to which the code adheres to the requirements in Section 5 of Volumes I and II.

<u>Compliance Build of the EVS 5.0.0.0 Voting System Software, Firmware, and Utilities</u>– Before testing can begin a compliance build of all the applications shall be constructed by Wyle personnel using the build environment, build documentation and reviewed source code. This is to insure the software being tested is constructed from the same source code that was reviewed.

<u>COTS Source Code Review</u> – Unmodified, general purpose COTS non-voting software (e.g., operating systems, programming language compilers, data base management systems, and Web browsers) is not subject to the detailed examinations specified in this section. However, Wyle Laboratories personnel will examine such software to verify that the software has not been modified. Portions of COTS software that have been modified by the manufacturer in any manner are subject to review. Unmodified COTS software is not subject to code examination. However, source code generated by a COTS package and embedded in software modules for compilation or interpretation shall be provided in human readable form to Wyle Laboratories. Wyle Laboratories personnel may inspect COTS source code units to determine testing requirements or to verify the code is unmodified.

6.0   TEST PROCEDURES AND CONDITIONS (Continued)

6.3   Test Sequence (Continued)

6.3.2   Software Test Description (Continued)

Wyle Laboratories may inspect the COTS generated software source code in preparation of test plans and to provide some minimal scanning or sampling to check for embedded code or unauthorized changes. Otherwise, the COTS source code is not subject to the full code review and testing. For purposes of code analysis, the COTS units shall be treated as unexpanded macros.

Baseline of EMS Operating and Build Machine OS – Wyle will review the submitted NIST SCAP FDCC checklist for the EMS Operating System and Build Machine OS ES&S. The review shall be performed for completeness, clarity, and consistency.

Error Recovery Test – This shall be tested to ensure that unit is capable of recovering from a non- catastrophic failure of a device, or from any error or malfunction that is within the operator's ability to correct and restore the device gracefully from the failures. Testing will include powering units off while operating, disconnecting various cables and components to ensure operation once restored.

Security Source Code Review – The security source code review is a detailed review of the functionality of the source code that has been submitted. A manual line by line review shall be utilized, which automated tools (Fortify) can be leveraged to assist in the analysis of the source code. This examination is not for finding stylistic (coding convention) issues. It is performed to discover any issues that might lead to a security vulnerability. If issues are found they are given to the security testers to be incorporated into the security testing.

Trusted Build – The trusted build is a process of converting the reviewed source code into machine-readable binary instructions for a computer. This test will follow Section 5.6 of the EAC Testing and Certification Program manual.

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6.0   TEST PROCEDURES AND CONDITIONS (Continued)

6.3   Test Sequence (Continued)

6.3.2   Software Test Description (Continued)

Table 6-1 EVS 5.0.0.0 Voting System Software Test Sequence

Test	Description	Procedure	Test Level	Specimen
Compliance Source Code Review	Source code review for compliance	WHVS07.2 WOP 5a	Component	Source Code
Compliance Build	Using the build documents and source code to construct the EMS	WHVS07.3 WOP 25	Component	Source Code
Source Code COTS Review	Source code review to examine 3rd party products for modification and versions	WHVS07.2 WOP 5d	Component	COTS Source Code
Baseline OS	RFI 2008-03 OS Configuration	WHVS07.3 WOP 25	Component	NIST SCAP FDCC Checklist
Source Code Functional Review	Source code review for functionality and high level software design	WHVS07.2 WOP5b	Component & Integration	Source Code
Source Code Security Review (manual – automated)	Source code review for specific security concerns and an automated review using Fortify	WHVS07.2 WOP5d WOP 6a	Component & Integration	Source Code

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6.0 TEST PROCEDURES AND CONDITIONS (Continued)

6.3 Test Sequence (Continued)

6.3.3 System Testing

Physical Configuration Audit – The Physical Configuration Audit compares the voting system components submitted for qualification to the manufacturer's technical documentation, and shall include the following activities:

- Establish a configuration baseline of software and hardware to be tested; confirm whether manufacturer's documentation is sufficient for the user to install, validate, operate, and maintain the voting system

- Verify software conforms to the manufacturer's specifications; inspect all records of manufacturer's release control system; if changes have been made to the baseline version, verify manufacturer's engineering and test data are for the software version submitted for certification

- Review drawings, specifications, technical data, and test data associated with system hardware, if non-COTS, to establish system hardware baseline associated with software baseline

- Review manufacturer's documents of user acceptance test procedures and data against system's functional specifications; resolve any discrepancy or inadequacy in manufacturer's plan or data prior to beginning system integration functional and performance tests

- Subsequent changes to baseline software configuration made during testing, as well as system hardware changes that may produce a change in software operation are subject to re-examination

Functional Configuration Audit – The functional configuration audit encompasses an examination of manufacturer's tests, and the conduct of additional tests, to verify that the system hardware and software perform all the functions described in the manufacturer's documentation submitted for the TDP. In addition to functioning according to the manufacturer's documentation, tests shall be conducted to insure all applicable EAC 2005 VVSG requirements are met. This testing is accomplished through a process called sequencing.

Sequencing is the act of navigating through the user interface to verify that the system performs as described by the manufacturer and does not violate any of the VVSG requirements. The path that the tester navigates follows the logical flow of accomplishing task required to conduct an election. For example, a task in conducting an election is to add a candidate. The tester will follow the flow of the user interface to add the candidate to a contest. If there are multiple ways to achieve this, then each method will be tested. This process will continue until all tasks for conducting an election are completed. Any paths, or combination of paths, that are determined to be at risk for failure that are outside of the normal flow of the interface will be tested on an individual basis.

TDP Review – The technical data package must be submitted as a precondition of national certification testing. These items are necessary to define the product and its method of operation; to provide technical and test data supporting the manufacturer's claims of the system's functional capabilities and performance levels; and to document instructions and procedures governing system operation and field maintenance. Any information relevant to the system evaluation shall be submitted to include source code, object code, and sample output report formats.

Security Test – The security test is designed and performed to test the capabilities of the voting system against the requirements defined in Volume I, Section 7. These procedures shall focus on the ability of the system to detect, prevent, log, and recover from a broad range of security risks identified. This test will also examine system capabilities and safeguards claimed by ES&S in the TDP to go beyond these risks. The range of risks tested is determined by the design of the system and potential exposure to risk.

6.0   TEST PROCEDURES AND CONDITIONS (Continued)

6.3   Test Sequence (Continued)

6.3.3   System Testing (Continued)

<u>Telecommunication Test</u> – The telecommunication test focuses on system hardware and software function and performance for the transmission of data that is used to operate the system and report election results. This test applies to the requirements for Volume I, Section 6 of the EAC 2005 VVSG.

<u>Usability/Accessibility</u> – The usability test is a measure of the effectiveness, efficiency, and satisfaction achieved by a specified set of users with a given product in the performance of specified tasks. This test applies to the requirements for Volume I, Section 3 of the EAC 2005 VVSG.

<u>System Integration</u> – System Level certification test address the integrated operation of both hardware and software, along with any telecommunication capabilities. Compatibility of the voting system software components or subsystems with one another, and with other components of the voting system environment, shall be determined through functional tests integrating the voting system software with the remainder of the system.

<u>Volume/Stress/Reliability</u> – Tests to investigate the system's response to conditions that overload the system's capacity to process, store, and report data. The test parameters will focus on the system stated limits, or combination of limits, and the ballot logic for areas such as the maximum number of active voting positions, maximum number of ballot styles, maximum candidates, maximum contests, and stated limits within the EMS. Where applicable, Wyle will test how the system behaves when different combinations of these limits are introduced. This test shall be utilized to ensure the system can achieve the manufacturer's TDP claims of what the system can support. In addition, Wyle will conduct a series of negative test to verify that the system will enforce the minimal limits across all software suites. If the system does not prevent the user from exceeding a limit or the system does not handle the limit properly, than it will be reported as a non-conformity. Testing shall be performed by exercising an election definition and test cases developed specifically to test for volume and stress conditions of the system being tested. In general, the election definitions utilized will resemble a vote center or central voting site to the extent that the system supports this method of voting.

Based on the system architecture, Wyle will concentrate on the following three areas of the system:

> ERM is the limiting factor in all but one of the stated limits in section 1.5.5 of this test plan. As such, Wyle will concentrate on ensuring that the stated limits are properly enforced by ERM. This will be achieved by using ElectionWare to create elections that are within the limits of the DS200 or DS850 but exceed the limits of ERM. Wyle will examine the behavior of ERM and report any failures.

> The second area of concentration will be the DS850. Since the DS850 is a high volume scanner Wyle believes this device would be the one mostly likely to exceed an ERM limit.

> The third area of concentration will be on the accessibility equipment. The AutoMARK™ will be tested to ensure that the stated limits can be supported on these devices.

Wyle will verify the audit log records for error and exception activity to verify proper documentation and recovery action for all functional tests performed. A detailed listing of all audit log entries shall be provided by ES&S. During testing, audit log entries shall be compared to this list to ensure that all expected events were recorded. To ensure the system's ability to gracefully shutdown and recover from error conditions, negative test cases shall be performed to introduce such error conditions.

6.0 TEST PROCEDURES AND CONDITIONS (Continued)

6.3 Test Sequence (Continued)

6.3.3 System Testing (Continued)

Accuracy – The accuracy test insures that each component of the voting system can each process 1,549,703 consecutive ballot positions correctly within the allowable target error rate. The Accuracy test is designed to test the ability of the system to "capture, record, store, consolidate and report" specific selections and absences of a selection. The required accuracy is defined as an error rate. This rate is the maximum number of errors allowed while processing a specified volume of data. For paper-based voting systems the ballot positions on a paper ballot must be scanned to detect selections for individual candidates and contests and the conversion of those selections detected on the paper ballot converted into digital data.

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

The accuracy requirements for the DS200 will be met by the execution of the standard accuracy test.

1.   Stand-Alone Precinct Scanner – Tested by utilizing a combination of hand marked and pre-marked ballots to achieve an accuracy rate greater than 1,549,703 correct ballot positions.

The accuracy requirements for the DS850 will be met by the execution of two separate accuracy tests.

1.   Stand-Alone Central Count Scanner - Tested by utilizing a combination of hand-marked and pre-marked ballots to achieve an accuracy rate greater than 1,549,703 correct ballot positions.

2.   DS850 Networked – To transfer the results from the DS850 to EMS via a network configuration.

The accuracy requirements for the AutoMARK™ will be met by the execution of three separate accuracy tests.

1.   Multiple AutoMARK™s will be used to achieve an accuracy rate greater than 1,549,703 correct ballot positions marked.

2.   The marked ballots will be scanned through the DS200 for accuracy.

3.   The same marked ballots will also be scanned through the DS850 for accuracy.

System Integration – System Level certification test address the integrated operation of both hardware and software, along with any telecommunication capabilities. Compatibility of the voting system software components or subsystems with one another, and with other components of the voting system environment, shall be determined through functional tests integrating the voting system software with the remainder of the system.

Additionally, the system shall be configured exactly as it would for normal field use. This includes connecting all supporting equipment and peripherals including ballot boxes, voting booths (regular and accessible), and any physical security equipment such as locks and ties. Wyle personnel will properly configure and test the system by following the procedures detailed in the EVS 5.0.0.0 Voting System technical documentation.

Regression Testing – Regression Testing will be performed on all system components to verify all firmware modifications that occurred during the test campaign did not cause a failure in other parts of the system.

6.0   TEST PROCEDURES AND CONDITIONS (Continued)

6.3   Test Sequence (Continued)

6.3.3   System Testing (Continued)

Table 6-2 EVS 5.0.0.0 Voting System Testing Sequence

Test	Description	Procedure	Test Level	Specimen	Election Data
Technical Data Package (TDP) Review	Documentation review for compliance, correctness, and completeness	WHVS07.1 WoP 3	Document	TDP package	---
Physical Configuration Audit	Audit hardware and software models and versions	WHVS07.3 WoP 25	Component & System	System hardware and software	---
Functional Configuration Audit	Functional testing to the system documentation and EAC 2005 VVSG requirements	WHVS07.4 WoP 26 WoP30a	Component & Integration	System	Gen-01 Prim-01
Telecommunication	Test of telecommunication technology of the system for accuracy and correctness	WHVS07.6 WoP 31	Integration & System	System	Gen-01 Volume & Stress
Usability/ Accessibility	Testing to the system documentation and EAC 2005 VVSG requirements	WOP 22 WOP 24-1 WOP 24-1a WOP 24-1b WOP 24-1c WOP 24-1d WOP 24-1f WOP 24-1g WOP 24-2 WOP 24-2a WOP 24-2b WOP 24-2c WOP 24-2d WOP 24-2e WOP 24-2f	Integration	System	Gen-01 Prim-01
Volume, Stress, & Reliability Test	Test to investigate the system's response to larger amounts of data than it is expecting.	WoP 40	System	System	Volume and Stress Election
Security	Assess the system to the 2005 VVSG requirements and execute basic system security tests.	WHVS07.7 WoP 6 WoP 6a WoP 6b WoP 6c WoP 6d	Integration & System	System	Gen-01 Prim -01

6.0 TEST PROCEDURES AND CONDITIONS (Continued)

6.3 Test Sequence (Continued)

6.3.3 System Testing (Continued)

Table 6-2 EVS 5.0.0.0 System Testing Sequence (Continued)

Test	Description	Procedure	Test Level	Specimen	Election Data
Accuracy	Test of accuracy to ~1.6 million ballot positions per component	WHVS07.9 WoP 41	System	System	L&A Election
System Integration Test	Test of all system hardware, software and peripherals.	WoP 30	System	System	Gen-01-03 Prim-01-03
Trusted Build	Creation and installation of the final system software	WHVS07.6 WoP 7 WoP 7a	Component	System software	EVS 5.0.0.0 Source Code Package

7.0 TEST OPERATIONS PROCEDURES

7.1 Proprietary Data

All proprietary data that is marked shall be distributed only to those persons that the manufacturer or EAC identifies as needing the information to conduct of qualification testing. The manufacturer is required to mark all proprietary documents as such. All organizations and individuals receiving proprietary documents will ensure those documents are not available to non-authorized persons.

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APPENDIX A

ES&S PROJECT SCHEDULE

ID		Task Name	Duration	Start	Finish
1	✓	**EAC Application**	**1 day**	**Wed 8/22/12**	**Wed 8/22/12**
2	✓	ES&S updated EAC application	1 day	Wed 8/22/12	Wed 8/22/12
3	✓	**Test Plan**	**29 days**	**Tue 9/25/12**	**Fri 11/2/12**
4	✓	Revise Test Plan to As-Run By Wyle	1 day	Tue 9/25/12	Tue 9/25/12
5	✓	Test Plan To ES&S for Review	5 days	Tue 9/25/12	Mon 10/1/12
6	✓	Test Plan Submitted to the EAC for Review	12 days	Mon 10/1/12	Tue 10/16/12
7	✓	Wyle, EAC and ES&S Review EAC Comments and Resubmit Test Plan	1 day	Wed 10/17/12	Wed 10/17/12
8	✓	Test Plan Submitted to the EAC for Review	11 days	Thu 10/18/12	Thu 11/1/12
9	✓	EAC Test Plan Approval	1 day	Fri 11/2/12	Fri 11/2/12
10	✓	**Network Setup**	**4 days**	**Mon 11/26/12**	**Thu 11/29/12**
11	✓	Reconfigure network	4 days	Mon 11/26/12	Thu 11/29/12
12	✓	**Physical Configuration Audit**	**7 days**	**Tue 11/13/12**	**Tue 11/20/12**
13	✓	Revised PCA Report	7 days	Tue 11/13/12	Tue 11/20/12
14		**Technical Data Package Review**	**86 days**	**Fri 11/2/12**	**Fri 3/1/13**
15	✓	Full TDP Submission	1 day	Fri 11/2/12	Fri 11/2/12
16	▦	TDP Review for VVSG Requirements	73 days	Mon 11/5/12	Fri 2/15/13
17		TDP Final Report to ES&S	2 days	Sat 2/16/13	Sun 2/17/13
18		ES&S Final Review of Report and Correct Documents	5 days	Mon 2/18/13	Fri 2/22/13
19		Final Report TDP Review	5 days	Mon 2/25/13	Fri 3/1/13
20	✓	**Source Code Re-review**	**16 days**	**Mon 11/5/12**	**Tue 11/27/12**
21	✓	Submission of Source Code	1 day	Mon 11/5/12	Mon 11/5/12
22	✓	Source Code Review 8,866 lines	3 days	Wed 11/7/12	Fri 11/9/12
23	✓	Source Code Re-Reviews	12 days	Fri 11/9/12	Tue 11/27/12
24	✓	**Build and Install Review (Initial Prior to End of Testing)**	**3 days**	**Wed 11/28/12**	**Fri 11/30/12**
25	✓	ElectionWare 4.1.0.0	3 days	Wed 11/28/12	Fri 11/30/12
26	✓	Shared Utilities	1 day	Fri 11/30/12	Fri 11/30/12

Project: EVS 5.0.0.0 8.16.2012
Date: Fri 1/25/13

Task	▬▬	External Milestone	◈	Manual Summary Rollup
Split	····················	Inactive Task	▭	Manual Summary
Milestone	◆	Inactive Milestone	◇	Start-only
Summary	▼▬▼	Inactive Summary	▽▽	Finish-only
Project Summary	▼▬▼	Manual Task	▬▬	Deadline
External Tasks	▬▬	Duration-only	▬▬	Progress

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ID		Task Name	Duration	Start	Finish
27	✓	Election Reporting Manager (ERM) 8.6.0.0	1 day	Fri 11/30/12	Fri 11/30/12
28	✓	DS850	1 day	Fri 11/30/12	Fri 11/30/12
29	✓	Removable Media Services (RMS) 1.4.0.0	1 day	Fri 11/30/12	Fri 11/30/12
30	✓	ES&S Event Log Services (UELS) 1.4.0.0	1 day	Fri 11/30/12	Fri 11/30/12
31	✓	AutoMark	1 day	Fri 11/30/12	Fri 11/30/12
32	✓	DS200	1 day	Fri 11/30/12	Fri 11/30/12
33	✓	**Create Build Environments**	**1 day**	**Thu 11/15/12**	**Thu 11/15/12**
34	✓	EMS	1 day	Thu 11/15/12	Thu 11/15/12
35	✓	DS200 Ancillary PM/Scanner	1 day	Thu 11/15/12	Thu 11/15/12
36	✓	AutoMark	1 day	Thu 11/15/12	Thu 11/15/12
37	✓	**Compliance Builds**	**11 days**	**Tue 11/13/12**	**Wed 11/28/12**
38	✓	ElectionWare 4.1.0.0	1 day	Fri 11/16/12	Fri 11/16/12
39	✓	Election Reporting Manager (ERM) 8.6.0.0	0.5 days	Fri 11/16/12	Fri 11/16/12
40	✓	Removable Media Service (RMS) 1.4.0.0	0.5 days	Fri 11/16/12	Fri 11/16/12
41	✓	Event Log Services (UELS) 1.5.0.0	0.5 days	Fri 11/16/12	Fri 11/16/12
42	✓	AutoMark	1 day	Tue 11/13/12	Tue 11/13/12
43	✓	DS200 Ancillary Devices PM/Scanner	0.5 days	Fri 11/16/12	Fri 11/16/12
44	✓	DS200	0.5 days	Fri 11/16/12	Fri 11/16/12
45	✓	DS850	1 day	Tue 11/27/12	Wed 11/28/12
46	✓	**Hardware Testing**	**20 days**	**Sat 11/17/12**	**Mon 12/17/12**
47	✓	**AutoMark (A100, A200)**	**6 days**	**Sat 11/17/12**	**Tue 11/27/12**
48	✓	Humidity Retest on AutoMark A100	6 days	Sat 11/17/12	Tue 11/27/12
49	✓	Acoustic Retest	2 days	Tue 11/20/12	Wed 11/21/12
50	✓	**All units**	**11 days**	**Mon 12/3/12**	**Mon 12/17/12**
51	✓📝	Temperature Power Reliability Prep and Execution	7 days	Mon 12/3/12	Tue 12/11/12
52	✓📝	Temperature Power Reliability Prep and Execution	5 days	Tue 12/11/12	Mon 12/17/12

Project: EVS 5.0.0.0 8.16.2012 Date: Fri 1/25/13	Task	▬▬▬	External Milestone	◆	Manual Summary Rollup	▬▬▬▬	
	Split	··················	Inactive Task	▭▭▭	Manual Summary	▬▬▬	
	Milestone	◆	Inactive Milestone	◇	Start-only	⸢	
	Summary	▬▬▬	Inactive Summary	▽▽▽	Finish-only	⸥	
	Project Summary	▬▬▬	Manual Task	▬▬▬	Deadline	⬇	
	External Tasks	▬▬▬	Duration-only	▬▬▬	Progress	▬▬▬	

ID		Task Name	Duration	Start	Finish
53	✓	**Known Field Issues Review**	**25 days**	**Fri 11/30/12**	**Tue 1/8/13**
54		**FCA**	**37 days**	**Wed 11/28/12**	**Tue 1/22/13**
55	✓	Pre FCA	30 days	Wed 11/28/12	Fri 1/11/13
56	✓	ElectionWare	30 days	Wed 11/28/12	Fri 1/11/13
57	✓	ERM	28 days	Fri 11/30/12	Fri 1/11/13
58	✓	AutoMark	13 days	Wed 11/28/12	Fri 12/14/12
59	✓	DS200	18 days	Wed 11/28/12	Fri 12/21/12
60	✓	DS850	17 days	Wed 11/28/12	Thu 12/20/12
61		**FCA Execution**	**24 days**	**Thu 12/13/12**	**Fri 1/18/13**
62	▦	ElectionWare	19 days	Thu 12/20/12	Fri 1/18/13
63	▦	ERM	9 days	Tue 1/8/13	Fri 1/18/13
64	✓	AutoMark	6 days	Thu 12/13/12	Thu 12/20/12
65	✓📝	DS200	14 days	Thu 12/20/12	Fri 1/11/13
66	✓	DS850	5 days	Thu 12/20/12	Fri 12/28/12
67		**FCA Completion**	**2 days**	**Mon 1/21/13**	**Tue 1/22/13**
68		FCA Report	2 days	Mon 1/21/13	Tue 1/22/13
69		**System Level Performance Testing**	**44 days**	**Wed 12/12/12**	**Tue 2/12/13**
70		**Accuracy Test**	**44 days**	**Wed 12/12/12**	**Tue 2/12/13**
71	✓	AutoMark	6 days	Wed 12/12/12	Wed 12/19/12
72	▦	DS200 and DS850	7 days	Wed 2/6/13	Tue 2/12/13
73		**Volume and Stress Test**	**16 days**	**Mon 1/7/13**	**Mon 1/28/13**
74	▦📝	DS200, DS850 and AutoMark	16 days	Mon 1/7/13	Mon 1/28/13
75		**Security Test**	**31 days**	**Fri 12/21/12**	**Wed 2/6/13**
76		**Access Controls Review (WOP 6)**	**23 days**	**Fri 12/21/12**	**Fri 1/25/13**
77	▦	Completion of Review	23 days	Fri 12/21/12	Fri 1/25/13
78		**Penetration Test**	**26 days**	**Fri 12/21/12**	**Wed 1/30/13**

Project: EVS 5.0.0.0 8.16.2012 Date: Fri 1/25/13	Task	▬▬▬	External Milestone	◆	Manual Summary Rollup ▬▬▬
	Split	....	Inactive Task	▭	Manual Summary ▼▬▼
	Milestone	◆	Inactive Milestone	◇	Start-only ⌐
	Summary	▼▬▼	Inactive Summary	▽▬▽	Finish-only ⌐
	Project Summary	▼▬▼	Manual Task	▬▬▬	Deadline ↓
	External Tasks	▬▬▬	Duration-only	▬▬▬	Progress ▬▬▬

ID		Task Name	Duration	Start	Finish
79	✓	Discovery Phase	9 days	Fri 12/21/12	Mon 1/7/13
80	✓	Exploration Phase	6 days	Fri 12/28/12	Mon 1/7/13
81	▦	Risk Assessment	19 days	Fri 1/4/13	Wed 1/30/13
82		**Security Assessment**	**4 days**	**Thu 1/31/13**	**Tue 2/5/13**
83	▦ 📝	Report Security Assessment	4 days	Thu 1/31/13	Tue 2/5/13
84		**Completion of Security Test**	**1 day**	**Wed 2/6/13**	**Wed 2/6/13**
85	📝	Final Security Report	1 day	Wed 2/6/13	Wed 2/6/13
86	✓	**Usability Testing**	**3 days**	**Mon 1/14/13**	**Wed 1/16/13**
87	✓	Perform Usability Test	3 days	Mon 1/14/13	Wed 1/16/13
88	✓	**Accessibility Test**	**3 days**	**Mon 1/14/13**	**Wed 1/16/13**
89	✓	Perform Accessibility Test	3 days	Mon 1/14/13	Wed 1/16/13
90		**System Integration Testing**	**19 days**	**Mon 2/4/13**	**Fri 2/22/13**
91		GEN 01 – Contests, Candidates, Alt Language, Split Precinct, and Audio Ballot	3 days	Mon 2/4/13	Wed 2/6/13
92		Gen 01 Setup	1 day	Mon 2/4/13	Mon 2/4/13
93		Gen 01 Execution	1 day	Tue 2/5/13	Tue 2/5/13
94		Gen 01 Completion	1 day	Wed 2/6/13	Wed 2/6/13
95		GEN 02 – N of M, Recall, Early Voting, Alt Language and Audio Ballot	3 days	Thu 2/7/13	Sat 2/9/13
96		Gen 02 Setup	1 day	Thu 2/7/13	Thu 2/7/13
97		Gen 02 Execution	1 day	Fri 2/8/13	Fri 2/8/13
98		Gen 02 Completion	1 day	Sat 2/9/13	Sat 2/9/13
99		GEN 03 – Ideographic Language, Audio Ballot, and ADA Devices	3 days	Sun 2/10/13	Tue 2/12/13
100		Gen 03 Setup	1 day	Sun 2/10/13	Sun 2/10/13
101		Gen 03 Execution	1 day	Mon 2/11/13	Mon 2/11/13
102		Gen 03 Completion	1 day	Tue 2/12/13	Tue 2/12/13
103		PRIM 01 – Closed Primary, Split Precinct, Multiple Ballot Styles, and Audio Ballot	3 days	Wed 2/13/13	Fri 2/15/13
104		Prim 01 Setup	1 day	Wed 2/13/13	Wed 2/13/13

Project: EVS 5.0.0.0 8.16.2012
Date: Fri 1/25/13

Task	▬▬▬	External Milestone	◈	Manual Summary Rollup	▬▬▬
Split	··············	Inactive Task		Manual Summary	▼▬▬▼
Milestone	◆	Inactive Milestone	◇	Start-only	⊏
Summary	▼▬▬▼	Inactive Summary	▽▬▬▽	Finish-only	⊐
Project Summary	▽▬▬▽	Manual Task	▬▬▬	Deadline	⬇
External Tasks	▬▬▬	Duration-only	▬▬▬	Progress	▬▬▬

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ID	Task Name	Duration	Start	Finish
105	Prim 01 Execution	1 day	Thu 2/14/13	Thu 2/14/13
106	Prim 01 Completion	1 day	Fri 2/15/13	Fri 2/15/13
107	PRIM 02 - Open Primary, Multiple Ballot Styles, Slate Voting, Cross-party Endorsement, and Audio Ballot	3 days	Sat 2/16/13	Mon 2/18/13
108	Prim 02 Setup	1 day	Sat 2/16/13	Sat 2/16/13
109	Prim 02 Execution	1 day	Sun 2/17/13	Sun 2/17/13
110	Prim 02 Completion	1 day	Mon 2/18/13	Mon 2/18/13
111	PRIM 03 - Closed Primary, Ideographic Language, and ADA devices	3 days	Tue 2/19/13	Thu 2/21/13
112	Prim 03 Setup	1 day	Tue 2/19/13	Tue 2/19/13
113	Prim 03 Execution	1 day	Wed 2/20/13	Wed 2/20/13
114	Prim 03 Completion	1 day	Thu 2/21/13	Thu 2/21/13
115	Completion of System Integration Test	1 day	Fri 2/22/13	Fri 2/22/13
116	Final Report	1 day	Fri 2/22/13	Fri 2/22/13
117	All Testing Activities Completed	1 day	Mon 2/25/13	Mon 2/25/13
118	Verification and compilation of all test data	1 day	Mon 2/25/13	Mon 2/25/13
119	PCA Completion	2 days	Tue 2/26/13	Wed 2/27/13
120	Regression All Changes to PCA that Occurred during the Test Campaign	1 day	Tue 2/26/13	Tue 2/26/13
121	Final PCA Report	1 day	Wed 2/27/13	Wed 2/27/13
122	Final Trusted Build	13 days	Thu 2/28/13	Mon 3/18/13
123	Verify Build Environment	1 day	Thu 2/28/13	Thu 2/28/13
124	Trusted Build	8 days	Fri 3/1/13	Tue 3/12/13
125	Install and Verify System Build	3 days	Wed 3/13/13	Fri 3/15/13
126	Final Trusted Build Complete	1 day	Mon 3/18/13	Mon 3/18/13
127	Post Testing Activities	51 days?	Thu 2/28/13	Thu 5/9/13
128	Certification Report	14 days	Thu 2/28/13	Tue 3/19/13
129	Initial Draft Report	10 days	Thu 2/28/13	Wed 3/13/13

Project: EVS 5.0.0.0 8.16.2012 Date: Fri 1/25/13	Task		External Milestone		Manual Summary Rollup	
	Split		Inactive Task		Manual Summary	
	Milestone	♦	Inactive Milestone	◇	Start-only	⊏
	Summary		Inactive Summary		Finish-only	⊐
	Project Summary		Manual Task		Deadline	⬇
	External Tasks		Duration-only		Progress	

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ID		Task Name	Duration	Start	Finish
130		Manufacturer Review	2 days	Thu 3/14/13	Fri 3/15/13
131		Final Test Report for Submission to EAC for Review	2 days	Mon 3/18/13	Tue 3/19/13
132		**EAC Review**	**35 days**	**Wed 3/20/13**	**Tue 5/7/13**
133		Initial EAC review	20 days	Wed 3/20/13	Tue 4/16/13
134		Address Comments From TR's and EAC	5 days	Wed 4/17/13	Tue 4/23/13
135		Second review	10 days	Wed 4/24/13	Tue 5/7/13
136		**Submit Final Package to EAC**	**2 days?**	**Wed 5/8/13**	**Thu 5/9/13**
137		Submit Final Package to EAC	0 days?	Wed 5/8/13	Wed 5/8/13
138		Submit Final Package to EAC	0 days?	Thu 5/9/13	Thu 5/9/13
139		Delivery of Images to EAC Repository	2 days	Wed 5/8/13	Thu 5/9/13
140		Submit Final Documents	1 day	Wed 5/8/13	Wed 5/8/13

Project: EVS 5.0.0.0 8.16.2012 Date: Fri 1/25/13	Task		External Milestone		Manual Summary Rollup	
	Split		Inactive Task		Manual Summary	
	Milestone	◆	Inactive Milestone	◇	Start-only	⊏
	Summary		Inactive Summary		Finish-only	⊐
	Project Summary		Manual Task		Deadline	↓
	External Tasks		Duration-only		Progress	

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APPENDIX B

THIRD PARTY BUILD SOFTWARE TABLE

The EVS 5.0.0.0 System includes the following COTS software which has been delivered by ES&S:

* NOTE: All hashes for COTS software were obtained from the COTS provider and then verified by Wyle. All propriety software developed by the manufacture is built by Wyle and the hashes are provided by Wyle.

Software Product	Software Version	Filename	SHA1 Hash Value
Microsoft Windows 7, SP1	5.1	Original Disc	N/A
Micro Focus RM/COBOL Runtime	12.06	Original Disc	N/A
Microsoft Server 2008	R2	Original Disc	N/A
Adobe Acrobat Standard	9.0	Original Disc	N/A
AVG Business Edition	2012	TBD	TBD
Microsoft Excel 2003	TBD	TBD	TBD

Software Product	Software Version	Filename	SHA1 Hash Value
ElectionWare			
Microsoft Windows 7 Pro, SP1	5.1	Original Disk	NA
PostgreSQL	9.1	postgresql-9.1.2-1-windows.exe	b15aff7d85d26227d004c65cc35794272fb630b5
Oracle Java JDK	6u29	jdk-6u29-windows-i586.exe	41a8656f5bf2eb15f22fdcc01350e8da37fac7df
ElectionWarePaperBallot.exe			
Microsoft Windows 7 Pro, SP1	5.1	Original Disk	NA
Visual C++ 10.0 CRT (x86)	10.0.40219.1	msvcp100.dll	2ada702a0c143a7ae39b7de16a4b5cc994d2548b
	10.0.40219.1	msvcr100.dll	0b51fb415ec89848f339f8989d323bea722bfd70
Visual C++ 10.0 MFC (x86)	10.0.40219.1	mfc100u.dll	2771393d56ff167275bf03170377c43c28ee14e1
PostgreSQL	9.1.2	postgresql-9.1.2-1-windows-binaries.zip	73edb0239de58a64f30510d568c3a85a19816b75
	1.0.0.4	libeay32.dll	26741c73bf6fc843cb74f15070084aeab9033b4f
	1.12.0.0	libiconv-2.dll	2c116fef19547ac5ea4d032f4a5bdad997766134
	0.17.0.0	libintl-8.dll	ad19cce12f2175c1fd1160f8cbb464f2f3dc5fca
	9.1.2.11335	libpq.dll	85e03b03e00bc8cf7cf2fd77e50fa4641e820cb3
	1.0.0.4	ssleay32.dll	f6eee4c41027ded239023a7fe8ad9c0f81adf947
XercesC++ XML Parser Library	3.1.1	xerces-c_3_1.dll	Must be built from source. Hash will come from trusted build.

Software Product	Software Version	Filename	SHA1 Hash Value
Election Reporting Manager			
Microsoft Windows 7 Pro, SP1	5.1	Original Disk	NA
Micro Focus RM/COBOL Runtime	12.06		NA
InfoZip	2.32	unzip.exe	e1652b058195db3f5f754b7ab430652ae04a50b8
	5.5.2	zip.exe	55c5a72010291fca2275ccfb5b497dd0bac11a60
RoboHelp 2000	8.0.131.0	ROBOEX32.DLLL	964d83c7f4dedc10241408de04e7d44cb599ef3d
RoboHelp X5	13.10.606.0	wh2robo.dll	4ff22cf837373459232906078dc1d4d1464598db
Shamir Optical	1.0.0.0	OpenSaveFile.ocx	47f736752a9894553ec11134bffcd5a4455e29ef
RSA Encryption Library	3.0.0.1	ccme_base.dll	652f5069fea72f20faea001c887073b69c8281b0
	3.0.0.1	ccme_ecc.dll	1a2f71f2ae1b215739718f04b23a6cdf0eaaf432
	3.0.0.1	ccme_eccaccel.dll	0f90ec44c40227d9b59c9dbc7e1e3b51618513d0
	3.0.0.1	ccme_eccnistaccel.dll	6698462aa02d592cf9a5a9c9dad512f047d289d9
	3.0.0.1	cryptocme2.dll	cc10515599cb629a1137cedbf68ba0c9ce445fe3
	3.0.0.1	cryptocme2.sig	61174bc0385d8a0e5a697f8e4148ff8114ba13a1
Dynamic linked library for Xerces-C	2.8.0.0	xerces-c_2_8_vc80.dll	2896bc1d9f6be38a2c34d76fdc674909f0395462
Visual C++ 10.0 CRT (x86)	10.0.40219.1	msvcp100.dll	2ada702a0c143a7ae39b7de16a4b5cc994d2548b
	10.0.40219.1	msvcr100.dll	0b51fb415ec89848f339f8989d323bea722bfd70
Visual C++ 10.0 MFC (x86)	10.0.40219.1	mfc100.dll	29dd7ca9af4085c6897788c1afaadf59dd5d8b0e
	10.0.40219.1	mfc100u.dll	2771393d56ff167275bf03170377c43c28ee14e1
	10.0.40219.1	mfcm100.dll	432a2fddbb87bd13e4e40428e4c6a167eebf7bf1
	10.0.40219.1	mfcm100u.dll	e7fb9b6a36e2f9ad381d00d14e1a20b541c70d94
EventLog Service			
Microsoft Windows 7 Pro, SP1	5.1	Original Disk	NA
Visual C++ 10.0 CRT (x86)	10.0.40219.1	msvcp100.dll	2ada702a0c143a7ae39b7de16a4b5cc994d2548b
	10.0.40219.1	msvcr100.dll	0b51fb415ec89848f339f8989d323bea722bfd70
Removable Media Service			
Microsoft Windows 7 Pro, SP1	5.1	Original Disk	NA
Visual C++ 10.0 CRT (x86)	10.0.40219.1	msvcp100.dll	2ada702a0c143a7ae39b7de16a4b5cc994d2548b
	10.0.40219.1	msvcr100.dll	0b51fb415ec89848f339f8989d323bea722bfd70
AutoMARK™			
Eurotech WinCE OS		nk.nb0	941cc95c9884e6073d5daa33f80b37bfc528d246ac7a9cb02c26e21bc05ddf57
		ADSApiDll.dll	7841640c8514ab4c8c8e457b4e1374cbb61c9a85ab3b0b3e0a64995e23693708
		FSHDRV.dll	f5e67f3c907fbc860b2662da3bb1038ec669cba003a8e9a0a9ddd441f5bd915d
	5.00.20	sysUpgrad.exe	567da9e0f20dd3a13af9922d07adfa4995ce390fca190b549bf005f30fed5bd9
Ricoh SBC/Bootloader	5K509399ALA 2.0/1/3/0	bootloader.bin	7ee9258eb57c37c2d5cbf7429a2e1774092b570e1bf98a0f83ad511b182cc02e
	5K509399BLA 2.5/1/3/1	bootloader.bin	9042589bad245c864e0cbe3d65aa5c552135e4a8cdb67c9116f0aed92372651d
DS200			
N/A	N/A	N/A	N/A
DS850			
N/A	N/A	N/A	N/A

Software Product	Software Version	Filename	SHA1 Hash Value
EMS Build Environment			
Apache Software Foundation Ant	1.7.1	apache-ant-1.7.1-bin.zip	a7e8fa7bc2102a8d8df99c64db73c2eae3d8b483
Apache Software Foundation Xerces-C++	3.1.1	xerces-c-3.1.1.zip	b61e2829f68d812d649bddaf5264a98f9837201a
CodeSynthesis XSD Including Apache Software Foundation Xerces C++ 2.8.0	3.1.0	xsd-3.1.msi	aa5f2fb2c815e8e1aa94314c08697751d056690b
Flexera Software (Macrovision) InstallShield	2008 Premier Edition	Original CD (two disk set)	N/A
Flexera Software (Macrovision) InstallShield Standalone Build Script Objects	2008 Premier Edition	installshieldinstallscriptobjects.exe	6cb960636c4474277fe12a51ee0d0704ee9246ed
MicroFocus (Liant) RM/COBOL Development System	12.06	rmcobol1206ds.exe	ff0c1a2cd06936eb12f860deb1a4d8cc6350832f
	12.06	wowext1206.exe	0d9bd6aa0c96dd4552656d54b677750655844761
Microsoft Visual Studio	2010 Premium (X86)	en_visual_studio_2010_premium_x86_dvd_509357.iso	a4e69966496ad0f704fe9d97fac2a723ef75a99b
	2010 Service Pack 1 (x86)	mu_visual_studio_2010_sp1_x86_dvd_651704.iso	61c2088850185ede8e18001d1ef3e6d12daa5692
Microsoft Windows	XP Professional with Service Pack 3	Original CD	N/A
	XP Professional Update (KB971513)	WindowsXP-KB971513-x86-ENU.exe	c18df80f512a6d9cea206825b981e33c0973abec
Microsoft Windows Driver Kit (WDK)	7.1.0.7600	GRMWDK_EN_7600_1.ISO	de6abdb8eb4e08942add4aa270c763ed4e3d8242
Oracle (NetBeans) NetBeans	6.9.1	netbeans-6.9.1-ml-javase-windows.exe	84d4a09937c8dcb3c199cf6281672aefe137f70e
Oracle (SDN) Java SE Development Kit	Version 6 Update 29	jdk-6u29-windows-i586.exe	41a8656f5bf2eb15f22fdcc01350e8da37fac7df
PostgreSQL Global Development Group PostgreSQL	9.1.2-1	postgresql-9.1.2-1-windows.exe	b15aff7d85d26227d004c65cc35794272fb630b5

Software Product	Software Version	Filename	SHA1 Hash Value
EMS Build Environment			
RSA BSAFE Crypto-C	Micro Edition (ME) 3	r_unpack.exe	5c48f05c4cf65784f5b129e15a0538361193f015
	Micro Edition (ME) 3	cryptocme-3_0_0_1-win32vc8.pkg	30fb23005a0e315a5eecee37cfbf64b3e3f62b20
SourceForge Boost C++ Libraries	1.46.1	boost_1_46_1.zip	62ae61cb2756abfc8515f842023ca572e733b2f2
	1.46.1	libboost_date_time-vc100-mt-1_46_1.zip	cdf7a788cc8c0e505fdb5fcf5bfb9da430a7dfee
	1.46.1	libboost_filesystem-vc100-mt-1_46_1.zip	e31498f488d644a6acdacb23c925cb956cd03f5e
	1.46.1	libboost_filesystem-vc100-mt-s-1_46_1.zip	dc2142b4ae049e2e1e577ddc9bbfa12e46852286
	1.46.1	libboost_program_options-vc100-mt-1_46_1.zip	07abf1aaa7548d1273b91afcda83d35bd35f1bcc
	1.46.1	libboost_system-vc100-mt-1_46_1.zip	3fa909d6e6fdcef0e9e5a5a668e85789ee202efa
	1.46.1	libboost_system-vc100-mt-s-1_46_1.zip	3970de2312ab82b7ea4fe29ad31aa622571b39d9
InfoZip	2.32	unzip.exe	e1652b058195db3f5f754b7ab430652ae04a50b8
	5.52	zip.exe	55c5a72010291fca2275ccfb5b497dd0bac11a60
MarshallSoft	0.0.0.0 Linker Rev. 3	WSC32.DLL	ac0d9b7d7ac30e98af162735bc9e7b1b24c48d23
RoboHelp 2000	8.0.131.0	ROBOEX32.DLL	964d83c7f4dedc10241408de04e7d44cb599ef3d
RoboHelp X5	13.10.606.0	wh2robo.dll	4ff22cf837373459232906078dc1d4d1464598db
Shamir Optical	1.0.0.0	OpenSaveFile.ocx	47f736752a9894553ec11134bffcd5a4455e29ef

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AutoMARK™ Build Environment			
AutoIt Consulting AutoIt	3.2.10.0	autoit-v3-setup.exe	bb913c21b1eeb8a580ea226d0a524f339d752596
Applied Data Systems Xscale	4.2	ADS_XSCALE_4_2_SDK.msi	991746a6251c28fe8b28b439c00565f23603f35e
Cosmic Software 68HC08 C Compiler	4.1h	Original CD	N/A
Keil µVision2 Note: CD is mislabeled µVision3	Release 04.2004	Original CD	N/A
Keil µVision2	Add-On Disk	Original 3.5" High-Density Floppy Diskette Note: Must transfer to a CD	N/A
MacroVision InstallShield Professional	10.5	Original CD	N/A
Microsoft Visual Studio	.Net 2003	Original CD	N/A
Microsoft Windows	XP Professional with Service Pack 3	Original CD	N/A
Microsoft Windows CE Platform Builder	5.0	Original CD	N/A
	Cumulative 2004 Update	WinCEPB50-041231-Product-Update-Rollup-Armv4I.msi	2a33a1540e25118e9360e7298af7c96da206006f
	Cumulative 2005 Update	WinCEPB50-051231-Product-Update-Rollup-Armv4I.msi	331f874c41fd2abe79ddc97ac9a47b91d203bdf9
	January 2006 Update	WinCEPB50-060131-2006M01-Armv4I.msi	884241dd89bd1fda9683fb6d6ba14f1c82cf9b2c
	February 2006 Update	WinCEPB50-060228-2006M02-Armv4I.msi	4695c80aff3707a1926ec54d0756af3a426d8e0f
	March 2006 Update	WinCEPB50-060331-2006M03-Armv4I.msi	39dc323b9736441893322fc1b159bc94dd2ec3b5
	April 2006 Update	WinCEPB50-060430-2006M04-Armv4I.msi	823c496b554f9d3d29cd491f80ffda9729176b89
	May 2006 Update	WinCEPB50-060531-2006M05-Armv4I.msi	29df27801c8bd2a3a68567cfa65e1ff54de8ae63
	June 2006 Update	WinCEPB50-060630-2006M06-Armv4I.msi	7421d73ec31cd1e9250e6c591e14f00a98988f59
	July 2006 Update	WinCEPB50-060731-2006M07-Armv4I.msi	f8ab5055a648ea23a64e3e89ef01e88ec9836b5c
	August 2006Update	WinCEPB50-060831-2006M08-Armv4I.msi	43b5d5a6f1be643e9dd4af970dc1785188bbe622
Microsoft Embedded Visual C++	4.0	Original CD	N/A

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AutoMARK™ Build Environment			
RSA BSAFE Crypto-C	Micro Edition (ME) 3	r_unpack.exe	5c48f05c4cf65784f5b129e15a0538361193f015
	Micro Edition (ME) 3	cryptocme-3_0_0_0-ppc2003.pkg	5ae651f5927f6cd8c16dce81c99df550441df9e6
Texas Instruments Code Composer Studio	v2 TMS320C5000 DSP Platform	Original CD	N/A
VAT_1.7.0.0t_Buildpkg_COTS.zip	N/A	N/A	N/A
Microsoft Visual Studio .NET 2003	N/A	cabwiz.ddf	dd44f51cdd27710a1ce652276454431672e4bd05
	1.00.0601	Makecab.exe	4825951d19c34deb658228822df95f7df5e1344e
Microsoft .NET Compact Framework	1.0.2268	Microsoft.WindowsCE.Forms.dll	939eb54fedb95782a73837c81ac201f2d638e9da
		MSCORLIB.DLL	8e57cbd267aea2085de258f3fceec0590de52f35
		System.Data.Common.dll	aa7bea9e02c545cc32d43b017fc68f3fbbe0fa90
SpeechWorks International, Inc. ETI-Eloquence TTS Engine	6.1.0.0	chs.syn	8a141d890adcd7acdd24f7aa2e3b798338dd9da4
		chsrom.dll	5c134deb10442e9394d96d3f3135909637e60383
		eci.dll	de792ced3d1ae96f8f1d507e22ab600376a0d71e
		enu.syn	08dbcebe6cf27a253535fc1a0d7d8a27169049c5
		esm.syn	eaf755997ee001f37d17c4e152b1b40ed349e2a8
		jpn.syn	32ca16e5034918711e8d056b850cd5279871762a
		jpnrom.dll	0a6c13ad82b0f5c5106f40f9d040a8b7e7e7cda4
		kor.syn	8592386bfaa11c2e7196278240c8ca0afc96db2d
		korrom.dll	1de6f4a4250fecfe542a48aeef7ad990f2d04beb
ATEN Technology Inc.	N/A	PL2303.CAT	a1bd69bdef67a0c90cdc1785015b62116c55976d
	N/A	SER2PL.INF	b682d49b5083fb58a4c7725884dfd0b173d0afc6
	N/A	SER2PL.SYS	60ea554d7e0695998fa83668fe6ae3d21e30cc47
VAT_1.7.0.0t_Source_COTS.zip	N/A	N/A	N/A
Enounce, Inc	1.3	enresult.h	026f14e00f2ffac65ff78ff219523ec702a8971c
	1.7	entypes.h	62f2e746d9e10e33167a8252523e72dc38489c0f
	1.7	tsmiface.h	45e4323d1c24134fea1d653072a116b330474742
	1.21	TSMStrmObj.h	d6bd6b1a0c6815c6935c3f7b5439baa5f879491e
	N/A	tstarmv4I.lib	57f18b940f5cd0bf404f3cd10b003db40bfb4e7c
FTDI Ltd	1.0.1.3	FTD2XX.h	2d753f2d72fa3adab894b0dbf8c85a97466ec89c
		FTD2XX.lib	4685d678b54a7a0159b97b510fc2741cfa64fb5f
zlib	1.1.4	unzip.cpp	afbb534d029875028b7d4048e895083d6901ab32
		unzip.h	5d6a56bd1daab11ac05e801b8b5111d4736e88ed
VAT Preview_1.7.0.0t_Installpkg_COTS.zip	N/A	N/A	N/A
SpeechWorks International, Inc. ETI-Eloquence TTS Engine	6.1.0.0	chs.syn	ff7c1873b84256c25da601d70ad280333e5ce167
		chsrom.dll	f3ae8a1f7d0369d387b8f2ee0a47a76efee2bc2f
		eci.dll	7aa1085174b7bce6016c8074297bc6cb40b823df
		enu.syn	3e69875d11e0a53c39c211c484cb6520f8d87f25
		esm.syn	d8037d86e5f677e89eca7834ae47fbd030a043aa
		jpn.syn	99a931e76e6008da9f01b91b4d91c116ece8f7d7
		jpnrom.dll	7557c00e8ace29affdabebddb73f466d0877a866
		kor.syn	f32f8ae286ed278320dbb829df338b97a2c846b5
		korrom.dll	76219d7f9f76f021b4815fa796f80e3ca49e3446

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DS200 Ancillary Devices Build Environment			
Keil µVision3	3.51	Original CD	N/A
Cypress EZ-USB Dev Kit	2.31	Original CD	N/A
IAR MPS430 Embedded Workbench	3.40A	Original CD	N/A
Microsoft Windows	XP Professional with Service Pack 3	Original CD	N/A
DS200			
Linux From Scratch	6.2-5	lfslivecd-x86-6.2-5.iso	b3e3947bf2c3616fa45541c0643a2adfa0618207
/lfs-sources (LFS Base Files from Live CD)			
autoconf	2.59	autoconf-2.59.tar.bz2	d366a07b2d99c95b7f24395aa8a8e023d8b93b69
automake	1.9.6	automake-1.9.6.tar.bz2	d205dbb274d3ff5be1cf6734f27fb452c7131866
bash	3.1	bash-3.1.tar.gz	766e3fd9384616d8a103f812f662fd8ec791c129
bash fixes	3.1	bash-3.1-fixes-8.patch	03d6781dd9ad6336eda906d5645c166e1641dd49
bash doc	3.1	bash-doc-3.1.tar.gz	9cacbbdf3b1be03819b1ea82cdaec0f5e61570c1
binutils	2.16.1	binutils-2.16.1.tar.bz2	5c80fd5657da47efc16a63fdd93ef7395319fbbf
bison	2.2	bison-2.2.tar.bz2	b01691c83cc0d08d3c03e32c494f6b03381ecd21
bzip2	1.0.3	bzip2-1.0.3.tar.gz	7e749510f65c86fbfff37b97144a02f1b8b8617f
bzip2 patch	1.0.3	bzip2-1.0.3-bzgrep_security-1.patch	56a29bf1278f21bc30c72d19e5766bfda5c74e5b
bzip2 docs patch	1.0.3	bzip2-1.0.3-install_docs-1.patch	ead85296356efe99db45529cf7aeb9f61dd33daa
coreutils	5.96	coreutils-5.96.tar.bz2	782379daf200427058ca94a408566d600f779823
coreutils patch	5.96	coreutils-5.96-i18n-1.patch	3ff73ceeae8ef66345cfed38f770e51db4d02199
coreutils patch	5.96	coreutils-5.96-suppress_uptime_kill_su-1.patch	a7dedf947b7651f882c8ede00eb6e56689bbb154
coreutils patch	5.96	coreutils-5.96-uname-1.patch	42cc795e56b96994a4dc9e8f2a8dd72b6a25665f
db	4.4.20	db-4.4.20.tar.gz	bb4c68a4afc14712eb2954b7991f5dc9fe93bf7b
db patch	4.4.20	db-4.4.20-fixes-1.patch	46886ccdf1ea6daab392e5c46b4923f7e71e7d55
dejagnu	1.4.4	dejagnu-1.4.4.tar.gz	fd82ffd396eba5b595f76d2f4a068cb7fcc6cffb
diffutils	2.8.1	diffutils-2.8.1.tar.gz	a4c467c3a6a08cde9f3d94d02067ec26436e7dc5
diffutils patch	2.8.1	diffutils-2.8.1-i18n-1.patch	2d88d693ab572f04990a3a28deb5e743e288b9da
expect	5.43.0	expect-5.43.0.tar.gz	854440d937c1d05103bf2d02f911005b739fa1e9

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DS200			
expect patch	5.43.0	expect-5.43.0-spawn-1.patch	ba903a7d04b4faa13c8b9db75e1537f55f28e82b
file	4.17	file-4.17.tar.gz	e03710a3fcb95db6d0ee9cfcdf88c19a5e525ee4
findutils	4.2.27	findutils-4.2.27.tar.gz	0655e10b20dc66b1ccddfa45e5d6c57a3cd312a2
flex	2.5.33	flex-2.5.33.tar.bz2	acdb8fff6455967ad1a5bfc71855dbcc1253ee56
gawk	3.1.5	gawk-3.1.5.tar.bz2	0d5694461f1c32f1eae41a1c0d7ba0939b47e369
gawk patch	3.1.5	gawk-3.1.5-segfault_fix-1.patch	8dde8415d03b1897f50d5b12b6c876feda15e0be
gcc	4.0.3	gcc-4.0.3.tar.bz2	5a94943d9ab823cf8d080cc7f9e8a4a91797afea
gcc patch	4.0.3	gcc-4.0.3-specs-1.patch	04d4b7d68bfd6b362e9b75678584641a2dde7c2f
gettext	0.14.5	gettext-0.14.5.tar.gz	68737eee1a6427044eef901dc88e4144d371fb6b
glibc	2.3.6	glibc-2.3.6.tar.bz2	82d0487419f1bdbf2dee439c344e89d6af47e558
glibc patch	2.3.6	glibc-2.3.6-inotify-1.patch	d282d10108a4f6b9c6eddc4351a83abe22a5b5b6
glibc patch	4.0.3	glibc-2.3.6-linux_types-1.patch	0bdf2b15e20c176caf3c85e5b6a7bc957f636d6a
glibc-libidn	2.3.6	glibc-libidn-2.3.6.tar.bz2	95d3a98495d4bd7138149fd312db88da56e735db
grep	2.5.1a	grep-2.5.1a.tar.bz2	2cd082775d30be463c0ac674a00595eb56fda22e
grep patch	2.5.1a	grep-2.5.1a-redhat_fixes-2.patch	6f7f1623d1909f07dc08a8a16a24cbce6be8dfc5
groff	1.18.1.1	groff-1.18.1.1.tar.gz	19c8c83e6ee29dd6041dae0daf1c1d0debd3d32a
groff patch	1.18.1.1	groff-1.18.1.1-debian_fixes-1.patch	39fb82b9673523cb2451a0491929693226ea97dd
grub	0.97	grub-0.97.tar.gz	2580626c4579bd99336d3af4482c346c95dac4fb
grub patch	0.97	grub-0.97-disk_geometry-1.patch	651801fe6d851c9f59ccd16b6bd49f1358c9594c
gzip	1.3.5	gzip-1.3.5.tar.gz	843272609b9bff1bdf2770a28d498d6519901e73
gzip patch	1.3.5	gzip-1.3.5-security_fixes-1.patch	3ab15ed9fa2b8b3e26b6f8d878f5cf43f822abca
iana-etc	2.10	iana-etc-2.10.tar.bz2	6a2960e42ccf3266680b7adb83f239c5a640220e
inetutils	1.4.2	inetutils-1.4.2.tar.gz	6b60d2c78702512e95afae36415f6fe3523dba77
inetutils patch	1.4.2	inetutils-1.4.2-gcc4_fixes-3.patch	77b063b0fcc15a55e28c18e1b30e1cdf5b1b7d3a
inetutils patch	1.4.2	inetutils-1.4.2-no_server_man_pages-1.patch	ccd3c59f9ed4eca6f7a8dffb494ed8916087bc50
iproute	2.6.16-060323	iproute2-2.6.16-060323.tar.gz	76d866bb3b46a7b2e73d79a4faf6fa8971527633
kbd	1.12	kbd-1.12.tar.bz2	65eaae4d98fca3f7ae7dfc9d9cb7c5a432c6475f
kbd patch	1.12	kbd-1.12-backspace-1.patch	39e332e42d5145dfc47786dba5eff63cda91d0ba
kbd patch	1.12	kbd-1.12-gcc4_fixes-1.patch	93ec9885a79ff79088f1533ec52f1a87dae69500
less	394	less-394.tar.gz	fa0d9aa30ec461866786c4080bb594fc3337bb02
lfs-bootscripts	6.2	lfs-bootscripts-6.2.tar.bz2	616ece5d67a79169e62547141f481ea5150e348c
libtool	1.5.22	libtool-1.5.22.tar.gz	17353e66aeaac80ae188ea0a3a90609550ce3254
linux patch	2.6.16.27	linux-2.6.16.27-utf8_input-1.patch	1245a73e16a0d6d1b1adfa167bbee2c02ca92dd5
linux-libc-headers	2.6.12.0	linux-libc-headers-2.6.12.0.tar.bz2	e72c9b260995b269c9fb9248ed468c18fb01f3fd
linux-libc-headers patch	2.6.12.0	linux-libc-headers-2.6.12.0-inotify-3.patch	724f0340907df408d17650fd2e58448d0a9e1799
m4	1.4.4	m4-1.4.4.tar.gz	4861140cb54b6c9e135d04b5fbf460ff57f969a5
make	3.80	make-3.80.tar.bz2	d2085842f08e57d58d3e1cd75a5f0342a60e5f45
man-db	2.4.3	man-db-2.4.3.tar.gz	a9f6ac22ccd97186005920cedb5f6611df13d4fa
man-pages	2.34	man-pages-2.34.tar.bz2	99278abd00613fa2409791f20c0ee175118a41d1
mktemp	1.5	mktemp-1.5.tar.gz	aa001fd61d13bbf128dc58ca4dc6d83311435bae

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DS200			
mktemp patch	1.5	mktemp-1.5-add_tempfile-3.patch	c4ca0c1d5993a44bf82c369d60f415e2cf92b95b
module-init-tools	3.2.2	module-init-tools-3.2.2.tar.bz2	b51e8ac170be23a1f2e301a1dddd47a47ec2186a
module-init-tools patch	3.2.2	module-init-tools-3.2.2-modprobe-1.patch	0caecb2078cc47c97e496e2e4717b8b82a52eb01
ncurses	5.5	ncurses-5.5.tar.gz	46414a72e91a62f63a8c9af00f0d65497f5ecc5a
ncurses patch	5.5	ncurses-5.5-fixes-1.patch	617e1de363a6dc2cfcaf5eaafd78cfe01ab34f48
patch	2.5.4	patch-2.5.4.tar.gz	a12d520eba0dc35d1c4d50ec75b7684451a40de9
perl	5.8.8	perl-5.8.8.tar.bz2	4aab490040727ca4419098720eca2ba4367df539
perl patch	5.8.8	perl-5.8.8-libc-2.patch	b72468149c5eee6faefde7f32bb05bda6e2a1c9d
procps	3.2.6	procps-3.2.6.tar.gz	91f44180eb50a94eb945c2598c0e849879e65893
psmisc	22.2	psmisc-22.2.tar.gz	1ae222803c5b5967a1b93e69f08330e0cdc1a554
readline	5.1	readline-5.1.tar.gz	4b2ee2bc9c6dd1d238c84a58f7e6db173600b850
readline patch	5.1	readline-5.1-fixes-3.patch	f58bbd80c7aed462ab7e97e3ac4eae7cd9d1b835
sed	4.1.5	sed-4.1.5.tar.gz	8e575e8a44568392d5b6e089eab5da5cdbd45885
shadow	4.0.15	shadow-4.0.15.tar.bz2	0f7cd3366a032091fdffd2f8edf65056bd576cae
sysklogd	1.4.1	sysklogd-1.4.1.tar.gz	093775da0e429d0768cf195ceb20fdd6d96aeeea
sysklogd patch	1.4.1	sysklogd-1.4.1-8bit-1.patch	edc01eceb4ae7af3d6a02e23a4dace8fee50f3eb
sysklogd patch	1.4.1	sysklogd-1.4.1-fixes-1.patch	4fbd5e56c212c8e37f363eb48ba86a5ecea21f4a
sysvinit	2.86	sysvinit-2.86.tar.gz	3e78df609a2ff0fea6304cb662a7f10298d03667
tar	1.15.1	tar-1.15.1.tar.bz2	f861b7524a0867833056dc382e68085234cae6ff
tar patch	1.15.1	tar-1.15.1-gcc4_fix_tests-1.patch	ba780e0e88c7993a69d5a498912e135bf16e7df8
tar patch	1.15.1	tar-1.15.1-security_fixes-1.patch	93fd5a55bccf25d03bb7e18dffc0bce27c29d207
tar patch	1.15.1	tar-1.15.1-sparse_fix-1.patch	269dfcc556b6217d27d043ea623df75e19e3d8c9
tcl	8.4.13	tcl8.4.13-src.tar.gz	4af6bec9a941d7d798df4287eebece7ded67489c
texinfo	4.8	texinfo-4.8.tar.bz2	b19e906f7220294c1e8b087d583c50f5c4d7c420
texinfo patch	4.8	texinfo-4.8-multibyte-1.patch	b97ae3468c03f8389dbf5c9b6eed64f996f9ed5c
texinfo patch	4.8	texinfo-4.8-tempfile_fix-2.patch	2ead28cb8e2679cdb53e1e4908209f0a31397dfe
udev	096	udev-096.tar.bz2	8d15b89fdf93ba84e2d33ff6061e140aed0a4dce
udev-config	6.2	udev-config-6.2.tar.bz2	5cd22b8e9cf1e996871e2bc540d75e57a4f706a3
util-linux	2.12r	util-linux-2.12r.tar.bz2	740b7eb5ae1148b2200b2cd34a0a6c4b0db577e4
util-linux patch	2.12r	util-linux-2.12r-cramfs-1.patch	00f5192493b939c2c996df9c1f3f769abfa3fa8c
vim-7.0	7.0	vim-7.0.tar.bz2	38ef48cabf942d0dc804a794dcc6f002b9457fc8
vim-7.0 patch	7.0	vim-7.0-fixes-7.patch	caf8b4b5635cf72edd033b048a993f80c5a5aa7b
vim-7.0-lang	7.0	vim-7.0-lang.tar.gz	3db6b0004d213490cc00d361835e7a7c685adb52
vim-7.0-mandir patch	7.0	vim-7.0-mandir-1.patch	182f46dfacefdd3bf6f821dea71f90547d414230
vim-7.0-spellfile patch	7.0	vim-7.0-spellfile-1.patch	4e0cb489a9b8f989f154d14cadb50deba619dd2b
zlib	1.2.3	zlib-1.2.3.tar.gz	60faeaaf250642db5c0ea36cd6dcc9f99c8f3902
lfs_kernel-2.6.35.13-src.tar			
Linux Kernel	2.6.35.13	linux-2.6.35.13.tar.bz2	b828b1db449c88a00209b1588efc0d192fa960c1

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DS200			
lfs_cots-3.0-rhel30-src.tar			
cryptocme	3.0-rhel30	cryptocme-3.0-rhel30.tar.gz	4fe8c6a6ddbf524cfa88e3e6cf195447afc67977
lfs_enhanced-2.7.0.0v-src.tar			
alsa-lib	1.0.13	alsa-lib-1.0.13.tar.bz2	82fa9a7fcb43b319524b18451ca86d691a20f4a3
alsa-utils	1.0.13	alsa-utils-1.0.13.tar.bz2	05b460a0e7ae6519ea37240476f026b59dbc710d
aumix	2.8	aumix-2.8.tar.bz2	5cea563ae91f628433a1950a36efd23681da4bf4
beecrypt	4.1.2	beecrypt-4.1.2.tar.gz	71cebd3329bb2561ffba24a2004dfac50b143f59
blfs-bootscripts	20060910	blfs-bootscripts-20060910.tar.bz2	58ff10492f9abceed6ca4a105c479d5f2e3e8002
BLFS-ca-bundle	3.12.5	BLFS-ca-bundle-3.12.5.tar.bz2	8cf4be3072184940f8cfc3888ef0ba1cb58a5377
boost	1.43.0	boost_1_43_0.tar.bz2	b8257b7da2a7222739314f8d1e07e217debe71d6
coreutils	6.9	coreutils-6.9.tar.bz2	10310a78c4e1d9f742f3815ac28e9bf1086a5885
cpio	2.6	cpio-2.6.tar.gz	5a4ea156519909994fe05933dc823abcf07e3e21
cpio-security_fixes-1	2.6	cpio-2.6-security_fixes-1.patch	d8445256032b903bbd3cee2694e87412e7dca843
ctags	5.6	ctags-5.6.tar.gz	930afaa138624717393fe475201f795251bd5e5e
curl	7.15.3	curl-7.15.3.tar.bz2	7e764126ce564429fe2f142428a27cbfc8fb69ee
cvs	1.11.22	cvs-1.11.22.tar.bz2	5dfa11da84a890d7d61516fd450c001dc24bcc0d
cvs-zlib-1	1.11.22	cvs-1.11.22-zlib-1.patch	0d20bab8a6b6e419a8c900d082b487ad6a3aec38
docbook-xsl	1.69.1	docbook-xsl-1.69.1.tar.bz2	aaabf0e274609134e187a6c36d2be23f3471f507
dosfstools	2.11	dosfstools-2.11.src.tar.gz	b0d8714475ca7c7a96a46adf7c4839d69ce2f412
e2fsprogs	1.41.14	e2fsprogs-1.41.14.tar.gz	24f9364fa3d4c0d7d00cb627b819d0e51055d6c5
expat	2.0.1	expat-2.0.1.tar.gz	663548c37b996082db1f2f2c32af060d7aa15c2d
fuse	2.8.5	fuse-2.8.5.tar.gz	862320b56d6bc4ad5e7be2b1e0b5029166aae09b
fuse	0.2.12	fuse-zip-0.2.12.tar.gz	fe6f1a32d7fbc0d8c8598b8c7f56129fe5ebc173
gnupg	1.4.3	gnupg-1.4.3.tar.bz2	9e96b36e4f4d1e8bc5028c99fac674482cbdb370
gpm	1.20.1	gpm-1.20.1.tar.bz2	c48d937e62abb438c2f6439b34ef3332c89af8d1
gpm-segfault-1	1.20.1	gpm-1.20.1-segfault-1.patch	da53bf78a0ebaa5020e332aa6d6861159170ed86
gpm-silent-1	1.20.1	gpm-1.20.1-silent-1.patch	8899a212eadfbda201d8da3e44590bd05b97f9f6
libao	0.8.6	libao-0.8.6.tar.gz	2050e008ffcfd6803e2c2c03c7d5f469b6d8379e
libogg	1.1.3	libogg-1.1.3.tar.gz	a3e495a8baf6939efad7e0bd11cc0e466838c3db
libusb	0.1.12	libusb-0.1.12.tar.gz	599a5168590f66bc6f1f9a299579fd8500614807
libvorbis	1.1.2	libvorbis-1.1.2.tar.gz	26289fc41aa5436b1a277d726bb5cb106d675c35
libxml2	2.6.26	libxml2-2.6.26.tar.gz	094ac2aae1c295fc227d88e803013557a269358a
libxslt	1.1.17	libxslt-1.1.17.tar.gz	5b36ab3e1ed85ed0862a10ce22ca03e1084d9121
libzip	0.9.3	libzip-0.9.3.tar.bz2	16e94bc0327f1a76a0296a28908cf6439b0a0a67
net-tools	1.60	net-tools-1.60.tar.bz2	944fb70641505d5d1139dba3aeb81ba124574b83
net-tools-gcc34-3	1.60	net-tools-1.60-gcc34-3.patch	a92286932a423fc987f2a152931d05b0a9a312bd
net-tools-kernel_headers-2	1.60	net-tools-1.60-kernel_headers-2.patch	3e59577e904582503b25c7b21f6e3b77b165f84a
net-tools-mii_ioctl-1	1.60	net-tools-1.60-mii_ioctl-1.patch	912613acbf3a000a2935391a14e55b5ccdeeae6b
ntfsprogs	1.13.1	ntfsprogs-1.13.1.tar.gz	a4e50f6fc10fcc1e1f562ad64bcbf9a0d46ca72a
openssh-4.5	4.5p1	openssh-4.5p1.tar.gz	2eefcbbeb9e4fa16fa4500dec107d1a09d3d02d7
openssl-5.8	5.8p1	openssh-5.8p1.tar.gz	adebb2faa9aba2a3a3c8b401b2b19677ab53f0de
openssl-fix_manpages-1	0.9.8r	openssl-0.9.8r.tar.gz	a02411e5f4d463cac4a2a4a357a4a0b93bf65e72

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DS200			
openssl-fips	1.2.2	openssl-fips-1.2.2.tar.gz	e7f94222ec24a5fe6c39b80ac2e5529760de3c33
openssl-fips	1.2.2	openssl-fips-1.2.2.tar.gz.asc	f9fd60bf406e5a98e834b09b1f072ff4341ebf31
pkg-config	0.22	pkg-config-0.22.tar.gz	3ec40bda9864d7aa3c912c6ae87a750fd8b6e420
popt	1.10.4	popt-1.10.4.tar.gz	10e6649c4c37ecfb6fb4296aeca609b5fdd5e34d
ppp	2.4.4	ppp-2.4.4.tar.gz	9b91b0117e0a8bfaf8c4e894af79e0960dd36259
Python	2.4.4	Python-2.4.4.tar.bz2	9e0971f93df8acbd947378d0d16a32fcc8897ba2
Python-gdbm-1	2.4.4	Python-2.4.4-gdbm-1.patch	34c3973ba2e519eaf1fd0ecf28ec465ed08bb96d
soundtouch	1.3.1	soundtouch-1.3.1.zip	d13437848ebe94b46b73fd5b05ba4420d4667527
unzip-security_fix-1	5.52	unzip-5.52-security_fix-1.patch	7f6a287c0b480bc4748abdf69429dfc76383e1d6
unzip552	5.52	unzip552.tar.gz	1831bd59b9e607a69052f83b263384895e2d4a19
usbutils	0.72	usbutils-0.72.tar.gz	891b8825d964880146d5c980e52bb9e23d92fe2b
vorbis-tools	1.1.1	vorbis-tools-1.1.1.tar.gz	a1394b39905b389d72f12c2a9f0c86a33d07a487
vorbis-tools-utf8-1	1.1.1	vorbis-tools-1.1.1-utf8-1.patch	35db6e412cc9df5d8b88b58cae5f2e514bc17823
xerces-c-src	2.8.0	xerces-c-src_2_8_0.tar.gz	f0803b1330daec3f44b17dee64c3c99de6b3cd3e
xsd	3.1.0	xsd-3.1.0-i686-linux-gnu.tar.bz2	a7bf9b26ff5ab577fcfeccc9ea76134da88ec7e2
zip232	2.32	zip232.tar.gz	5bc562bf95d9aee0cb6625e6038898e1f191a4aa
lfs_graphics-2.7.0.0v-src.tar			
apache ant	1.7.0	apache-ant-1.7.0-bin.zip	81aeb13c75edeee51dd5bb1c62001fac47b127a5
atk	1.18.0	atk-1.18.0.tar.bz2	d58dfc3dbdad49d8c446e0bd4a0b6260d315ceb0
bdftopcf	1.0.2	bdftopcf-1.0.2.tar.bz2	245778068b5e5ccde07151635ded50da90333524
bigreqsproto	1.1.0	bigreqsproto-1.1.0.tar.bz2	32ae0505ec963cc5c0e3ee9258b126e6865d1b1b
cairo	1.8.10	cairo-1.8.10.tar.gz	fd5e8ca82ff0e8542ea4c51612cad387f2a49df3
compositeproto	0.4.1	compositeproto-0.4.1.tar.bz2	fb1ae34418855c313a75e8e697b414a4935e13d6
damageproto	1.2.0	damageproto-1.2.0.tar.bz2	ffe177a6ae2cf023d41e015aa6ece2b191cb8a8a
DirectFB	0.9.22	DirectFB-0.9.22.tar.gz	f3a586c654086c287cd1bcc683be0f234973ee17
dmxproto	2.3	dmxproto-2.3.tar.bz2	a3636d1b54d7bbf273f28c0d3c44101777047865
dri2proto	2.2	dri2proto-2.2.tar.bz2	21e9c0c7e0be5fe971f51589d0573b0273202b7f
encodings	1.0.3	encodings-1.0.3.tar.bz2	615b8367ee20fc50688e4876aa250419927d64cc
fixesproto	4.1.1	fixesproto-4.1.1.tar.bz2	fb47920c629e08a56442a51968a02a22733085e5
font-adobe-100dpi	1.0.1	font-adobe-100dpi-1.0.1.tar.bz2	814baccf5cf6c6545b7e8f3bbbad377be369042d
font-adobe-75dpi	1.0.1	font-adobe-75dpi-1.0.1.tar.bz2	3cbed8a4a3a6bbe6ccd3d6e07a238f8c9ab7a26c
font-adobe-utopia-100dpi	1.0.2	font-adobe-utopia-100dpi-1.0.2.tar.bz2	e692c3d3933c47c69656be0fd0f06218c2db138d
font-adobe-utopia-75dpi	1.0.2	font-adobe-utopia-75dpi-1.0.2.tar.bz2	2db08c2e0186831e4d68f7a2ffb2f9fe598a7280
font-adobe-utopia-type1	1.0.2	font-adobe-utopia-type1-1.0.2.tar.bz2	565cb66523f59f02da02aa9e74604634a2113643
font-alias	1.0.2	font-alias-1.0.2.tar.bz2	9a0e97d974349e3a943b0ab77015f115f15d34c3
font-arabic-misc	1.0.1	font-arabic-misc-1.0.1.tar.bz2	d11a7bdce7500c3ccc2fe59505f2bc89e4c7aa2a
font-bh-100dpi	1.0.1	font-bh-100dpi-1.0.1.tar.bz2	4f3edda5dd35145cbd1ce8759e0a999b3a04f9c0
font-bh-75dpi	1.0.1	font-bh-75dpi-1.0.1.tar.bz2	7b891d5bfd966c405c19574bca8f87b8803146d1

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font-bh-lucidatypewriter-100dpi	1.0.1	font-bh-lucidatypewriter-100dpi-1.0.1.tar.bz2	a1c9d28a619358092f7196473ff3e0f0dc5304d0
font-bh-lucidatypewriter-75dpi	1.0.1	font-bh-lucidatypewriter-75dpi-1.0.1.tar.bz2	26efd25d2802c8406a96ccc3240b2c14e511d49f
font-bh-ttf	1.0.1	font-bh-ttf-1.0.1.tar.bz2	0e9ffbc738072ca832cdf5f82bff071c67b71825
font-bh-type1	1.0.1	font-bh-type1-1.0.1.tar.bz2	b960d8523b02d4401dc6e1257f68dc120761ee4b
font-bitstream-100dpi	1.0.1	font-bitstream-100dpi-1.0.1.tar.bz2	ba163df365a591de5eb9e45fa302059d572dd171
font-bitstream-75dpi	1.0.1	font-bitstream-75dpi-1.0.1.tar.bz2	43344b8ff3b2c2fda8d4cdbcc12c0688b2e04789
font-bitstream-type1	1.0.1	font-bitstream-type1-1.0.1.tar.bz2	53800b904fc3ead6b577a34fb7c1f96c1af4423f
fontconfig	2.8.0	fontconfig-2.8.0.tar.gz	570fb55eb14f2c92a7b470b941e9d35dbfafa716
font-cronyx-cyrillic	1.0.1	font-cronyx-cyrillic-1.0.1.tar.bz2	dfff5974629dab97677a70fa20e21c2cf48071a0
font-cursor-misc	1.0.1	font-cursor-misc-1.0.1.tar.bz2	5087a94e74f8157cb6989f71fb3b4815b236065a
font-daewoo-misc	1.0.1	font-daewoo-misc-1.0.1.tar.bz2	d169cec4e92fe1e99f3ff6766d4c6edcbb808860
font-dec-misc	1.0.1	font-dec-misc-1.0.1.tar.bz2	2489d19650f2a787b476dab2fa2412d20b95f38e
font-ibm-type1	1.0.1	font-ibm-type1-1.0.1.tar.bz2	9bcf72bcabfcbe218ad3a96ba2a45e92ef9efbc3
font-isas-misc	1.0.1	font-isas-misc-1.0.1.tar.bz2	13fe07a669dd93dfdb08717a03efe47936ab9cea
font-jis-misc	1.0.1	font-jis-misc-1.0.1.tar.bz2	adb3275d19e71e9553aa8a5fdc3b2c647277d8d4
font-micro-misc	1.0.1	font-micro-misc-1.0.1.tar.bz2	74a8be2b0b6ace97d8841356e88570f5fa3faad6
font-misc-cyrillic	1.0.1	font-misc-cyrillic-1.0.1.tar.bz2	c178f8a8b6897a8382a0f4315a5b577760ba703c
font-misc-ethiopic	1.0.1	font-misc-ethiopic-1.0.1.tar.bz2	2677191fd8b515c53bde6402513249fc0f48d53a
font-misc-meltho	1.0.1	font-misc-meltho-1.0.1.tar.bz2	d20d9f8ffdeb88b62842b021d5d3d2a8cc31ea2c
font-misc-misc	1.1.0	font-misc-misc-1.1.0.tar.bz2	83c44111b5727c26e52eb915b66dc6c9eba4c458
font-mutt-misc	1.0.1	font-mutt-misc-1.0.1.tar.bz2	b677831b477027f56ad3f35c95ef3cd6711f87ac
font-schumacher-misc	1.1.0	font-schumacher-misc-1.1.0.tar.bz2	ea7e009e222379fa31a16bdbd4ca5b1e9d412944
font-screen-cyrillic	1.0.2	font-screen-cyrillic-1.0.2.tar.bz2	4795ea77e14246122d21bc0fa68a3c0d5261e39d
font-sony-misc	1.0.1	font-sony-misc-1.0.1.tar.bz2	e9717546682382ebf3e6e7039766fe52bdb8846c
fontsproto	2.1.0	fontsproto-2.1.0.tar.bz2	395b300fd5120a7ff90cb8fea4e2356b9632dc3e
font-sun-misc	1.0.1	font-sun-misc-1.0.1.tar.bz2	fc91999e66fe479d07ea74e5dd2d950ff02ccb80
font-util	1.1.1	font-util-1.1.1.tar.bz2	6ee3af5466de84d61411e173e578a256aeb1074d
font-winitzki-cyrillic	1.0.1	font-winitzki-cyrillic-1.0.1.tar.bz2	d19f476710783d784dfdbcb6a1f34ef7746d3439
font-xfree86-type1	1.0.2	font-xfree86-type1-1.0.2.tar.bz2	09a4c9b8455f3f4954bfe9dd991d7fd1d0f5595a
freetype	2.3.12	freetype-2.3.12.tar.bz2	ebf0438429c0bedd310059326d91646c3c91016b
giflib	4.1.4	giflib-4.1.4.tar.bz2	2f9aed5d20d862270008bd2f8d4c91cf14c6067b
glib	2.12.12	glib-2.12.12.tar.bz2	527bced2e6d38169c08c8712d5e3b6ebb0dc46b5
glproto	1.4.11	glproto-1.4.11.tar.bz2	7c2a723d488dc0e09e7e0e28bde838502d774b16
gtk+	2.10.13	gtk+-2.10.13.tar.bz2	8d00b928a8788ff86d97197c20c18d41f9a1b1cd
iceauth	1.0.3	iceauth-1.0.3.tar.bz2	b75b87fed108bc4fe14ef06f76025016fa54299a
ImageMagick	6.2.8-0	ImageMagick-6.2.8-0.tar.bz2	637569bbcb331233c86258f6c681d5a7c849cba0
inputproto	2.0	inputproto-2.0.tar.bz2	3ed9879b7dd3c14ae2283959f5962162fc01c219
intltool	0.40.6	intltool-0.40.6.tar.bz2	4f6469e09e2c06a8072dffff36f84ff401d7ea75

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jdk-6u27	6u27	jdk-6u27-linux-i586.bin	7a01bf274b265662acafacdd7b5740d1a3ab0539
jpeg-6b-destdir-1	v6b	jpeg-6b-destdir-1.patch	7b86d4e94a6350fc03f56b09565d780aa1f0eda4
jpegsrc	v6b	jpegsrc.v6b.tar.gz	7079f0d6c42fad0cfba382cf6ad322add1ace8f9
jre-6u27	6u27	jre-6u27-linux-i586.bin	5a3d2e304d6cf62ee6a56cce322014cf3ceab2ad
kbproto	1.0.4	kbproto-1.0.4.tar.bz2	d300745389d3a80d90c9a3c989651f228db486e5
libdmx	1.1.0	libdmx-1.1.0.tar.bz2	8719434f167d476d53fca57c5be516c153354d60
libdrm	2.4.14	libdrm-2.4.14.tar.bz2	a18cc2cdfd02b8ba1c91c3e9ac609521ad3e2fe9
libfontenc	1.0.5	libfontenc-1.0.5.tar.bz2	e71370c349e93ba70f91ad1148ca9e5cabfcca4f
libFS	1.0.2	libFS-1.0.2.tar.bz2	41cf53fae37210acaa034199f01f36af3f3ec548
libICE	1.0.6	libICE-1.0.6.tar.bz2	ac1f702ea580bd496610266b13434858b62df9e1
libpciaccess	0.11.0	libpciaccess-0.11.0.tar.bz2	bcebba8b8441af151b59b63e8e91e66133b64158
libpng	1.2.42	libpng-1.2.42.tar.bz2	e41cea7a6f5e3065f4289de3742db87ded05b99d
libpthread-stubs	0.1	libpthread-stubs-0.1.tar.bz2	34ef40880d0112dc6d32b386d59ce94f2c139eef
librsvg	2.14.4	librsvg-2.14.4.tar.bz2	9314f0d44dbfe672dc1f1a65b66821593c3bf1ce
libSM	1.1.1	libSM-1.1.1.tar.bz2	dc535af7328dee9a6121b85c3f8041656681a195
libX11	1.3.3	libX11-1.3.3.tar.bz2	2a19724ccf78b5bb5a8eba9159d2b95e640e7b11
libXau	1.0.5	libXau-1.0.5.tar.bz2	b1c68843edf7e80ce952f7ee0541448f41bac202
libXaw	1.0.7	libXaw-1.0.7.tar.bz2	0e5effe33c4c44d960132e3dd50370134a28f8b2
libXcomposite	0.4.1	libXcomposite-0.4.1.tar.bz2	959180b067c64f3f7ac06e85400bd265e5579031
libXcursor	1.1.10	libXcursor-1.1.10.tar.bz2	096d0e538d37fd865705e5f45b0e96c7294c1f2f
libXdamage	1.1.2	libXdamage-1.1.2.tar.bz2	dc1fbc938e9bbc859c70cf2087440fc15b00bb1e
libXdmcp	1.0.3	libXdmcp-1.0.3.tar.bz2	7efd71d29d6cfba797b8791398e4d81ade677d77
libXext	1.1.1	libXext-1.1.1.tar.bz2	c2eb8d8d760c6881e51c938812764d1d6cefd51c
libXfixes	4.0.4	libXfixes-4.0.4.tar.bz2	3f2d1c473855ba0cf13137a80d585df7fe37111c
libXfont	1.4.1	libXfont-1.4.1.tar.bz2	f8dc669760975b41885143f828b54164224c8a31
libXft	2.1.14	libXft-2.1.14.tar.bz2	e08ae6b1f56e160179b9f141b4ab799333ec725e
libXi	1.3	libXi-1.3.tar.bz2	7685f2881ce40b13028d9409eedbb9cf1ed0d8ef
libXinerama	1.1	libXinerama-1.1.tar.bz2	5f445194ef3318f66c287c0c69f778988a3f9266
libxkbfile	1.0.6	libxkbfile-1.0.6.tar.bz2	6364e0679eb893d6fbb6adcf0e8230cfdefe0b68
libXmu	1.0.5	libXmu-1.0.5.tar.bz2	e7ff5960f2374852b941f909cdbdeafe7d29322f
libXpm	3.5.8	libXpm-3.5.8.tar.bz2	3bfc833ed4527f74b1c66c386da62271d0313413
libXrandr	1.3.0	libXrandr-1.3.0.tar.bz2	33dd2f67060465f872db9ea03f597e28517f0c8e
libXrender	0.9.5	libXrender-0.9.5.tar.bz2	278f762feb8e754aa5214175abf580ff486281f7
libXres	1.0.4	libXres-1.0.4.tar.bz2	d5ee9560a61666e6bb3d2285b9634fccd7211d65
libXScrnSaver	1.2.0	libXScrnSaver-1.2.0.tar.bz2	ea2935eb67efa77fd90372337f2d782a8ef74cea
libXt	1.0.7	libXt-1.0.7.tar.bz2	3c285b9c04a393dec1cc3d60cf5582d798eb3272
libXtst	1.1.0	libXtst-1.1.0.tar.bz2	4363e9285bfb5a884073efacc50d39edb803a1a5
libXv	1.0.5	libXv-1.0.5.tar.bz2	3936dd661e75d173b9fd1da9d97e5720e9657254
libXvMC	1.0.5	libXvMC-1.0.5.tar.bz2	153b85884f22b882cecb9fc462fe24c669a80dbd
libXxf86dga	1.1.1	libXxf86dga-1.1.1.tar.bz2	a93004cfbe4fd6bc37c6645705d5a6d90c0940b7

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DS200			
libXxf86vm	1.1.0	libXxf86vm-1.1.0.tar.bz2	f5ce7854f201d9c69dfcdd13123b51f497b69a47
makedepend	1.0.2	makedepend-1.0.2.tar.bz2	57e092856580d9984e47c4b1433b69391de07df3
mkfontdir	1.0.5	mkfontdir-1.0.5.tar.bz2	971728b0f453ea5df028aa5d54fe3fbdb8e99a7d
mkfontscale	1.0.7	mkfontscale-1.0.7.tar.bz2	0a0c25da68c87380e2c013c808a6e0cc0983fae9
pango	1.16.4	pango-1.16.4.tar.bz2	6a21126632ed99950818c64d8598b6e92fa7da58
pixman	0.15.20	pixman-0.15.20.tar.gz	a5f973b6895e269731964fbe328f61a8cbfdc931
randrproto	1.3.1	randrproto-1.3.1.tar.bz2	36731bae6e815453af4b055c26ad8e9e2653ca05
recordproto	1.14	recordproto-1.14.tar.bz2	212928572898ed150366c6026e2694b193ff9f79
renderproto	0.11	renderproto-0.11.tar.bz2	d30cf508b1a1b5f0deb1c6db41ba2f4e57680637
resourceproto	1.1.0	resourceproto-1.1.0.tar.bz2	36b86840005c15e393c86d7075688d430ab2a11d
scrnsaverproto	1.2.0	scrnsaverproto-1.2.0.tar.bz2	c734cfe9a1ce57fd42957389dcc90518fd7ca6b6
sessreg	1.0.5	sessreg-1.0.5.tar.bz2	d1dac6a398b23ed44bb67286ec083e9071bd00e7
setxkbmap	1.1.0	setxkbmap-1.1.0.tar.bz2	f02f93a08ac060d760566693c748e0fba3db8a06
smproxy	1.0.3	smproxy-1.0.3.tar.bz2	1ba44a4a58b05d6a6f7c4b1f67b793dce2ccf2ba
splashy	0.3.12	splashy-0.3.12.tar.gz	4e721222b20b8fd3fbb8c845ed5c0f05ccead68a
tiff	3.8.2	tiff-3.8.2.tar.gz	549e67b6a15b42bfcd72fe17cda7c9a198a393eb
twm	1.0.4	twm-1.0.4.tar.bz2	7456e90f19e4747e1785f596b93f692d68a9f079
util-macros	1.5.0	util-macros-1.5.0.tar.bz2	ac61387be2a0b97f839041832bd8d06e03cfc942
videoproto	2.3.0	videoproto-2.3.0.tar.bz2	4aef2b438d45b3ab75e640996ce1267d3468f48c
x11perf	1.5.1	x11perf-1.5.1.tar.bz2	d1f85da3df5b216b64c1735d109380214787222d
xauth	1.0.4	xauth-1.0.4.tar.bz2	90d32f28bb61ca6d831dcc35429a5ad53be73283
xbacklight	1.1.1	xbacklight-1.1.1.tar.bz2	3541ab5e0956b4f0c97b1200dc32a35d2ccb0f0f
xbitmaps	1.1.0	xbitmaps-1.1.0.tar.bz2	845b825f7e6d193d47db8b67ae8332d87ef8c2b3
xclock	1.0.4	xclock-1.0.4.tar.bz2	1987cafb3163c6b68bc7ecfbe143c8cd373d64bb
xcmiscproto	1.2.0	xcmiscproto-1.2.0.tar.bz2	1a55e042b33c0e0aaf2299942315a5208d644707
xcmsdb	1.0.2	xcmsdb-1.0.2.tar.bz2	8341f7219a5720da758b0571eb1f4d9072265485
xcursorgen	1.0.3	xcursorgen-1.0.3.tar.bz2	7df26b371476654dc191c45e7d20ae3a5e0cad87
xcursor-themes	1.0.2	xcursor-themes-1.0.2.tar.bz2	12b865c17c65e70a6bc20300dfa660fe8faaa0a4
xdpyinfo	1.1.0	xdpyinfo-1.1.0.tar.bz2	01971f007048a46a4a31a69c661bc3a378de60f0
xdriinfo	1.0.3	xdriinfo-1.0.3.tar.bz2	d211d6f12f4c801d2f4cf184c6daae37aa5858ff
xev	1.0.4	xev-1.0.4.tar.bz2	4f62e131ba96842eef1660e8869533cd3923ac35
xextproto	7.1.1	xextproto-7.1.1.tar.bz2	1bb4bd12d65a17b3168dc9b4e028b33a2f7b2cad
xf86bigfontproto	1.2.0	xf86bigfontproto-1.2.0.tar.bz2	312a2ea708b257520c1af4393b69d73a393a478f
xf86dgaproto	2.1	xf86dgaproto-2.1.tar.bz2	97a06120e7195c968875e8ba42e82c90ab54948b
xf86driproto	2.1.0	xf86driproto-2.1.0.tar.bz2	0dfc6616ffc68ca3c3b5decb1e365aaa93be8548
xf86-input-keyboard	1.4.0	xf86-input-keyboard-1.4.0.tar.bz2	5061fdaff8b7ddcbcca82f065c4abbfff255a1da
xf86-input-mouse	1.5.0	xf86-input-mouse-1.5.0.tar.bz2	b9213bf745b793a3da2c946ea4d8ee5768e560f4
xf86-video-vesa	2.3.0	xf86-video-vesa-2.3.0.tar.bz2	4689b7c295d7a8d7326302dafecb812739617134
xf86vidmodeproto	2.3	xf86vidmodeproto-2.3.tar.bz2	22d034c2f66985f8541b9ea3421096ceaa006355

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DS200			
Xgamma	1.0.3	xgamma-1.0.3.tar.bz2	f9c7d93f4b271bab41ee3c91b371d52572e4e08c
xhost	1.0.3	xhost-1.0.3.tar.bz2	ebcdccdc908e642e527eebbde6ba8084d90c04f6
xineramaproto	1.2	xineramaproto-1.2.tar.bz2	3c397c9ea38aaae785dd7901f250891dfa7f3249
xinit	1.2.0	xinit-1.2.0.tar.bz2	85a838c2010f27ef6d09d6ec4b1208a66cc8d697
xinput	1.5.0	xinput-1.5.0.tar.bz2	02d1ccc83007aa7848b1b024ac64c310303f973e
xkbcomp	1.1.1	xkbcomp-1.1.1.tar.bz2	aeb733c495d7afd42136bf8ae5c6e792c63f0b4b
xkbevd	1.1.0	xkbevd-1.1.0.tar.bz2	b510b4a1b7486beacb5570c204f7fdd4b61f0ab4
xkbutils	1.0.2	xkbutils-1.0.2.tar.bz2	2c025038ca12ee2494b2401ea2c12c74fe88bf91
xkeyboard-config	1.7	xkeyboard-config-1.7.tar.bz2	d6df43bfc0596be04865f2be7c4e794e198358c8
xkill	1.0.2	xkill-1.0.2.tar.bz2	90f08652859daf71b682c3b9163ebf72ce88c4bc
xlsatoms	1.0.2	xlsatoms-1.0.2.tar.bz2	3855734b5ec0d43b5886ac0ffa58d7cf96f46926
xlsclients	1.0.2	xlsclients-1.0.2.tar.bz2	5cde39a28c5352d1d555714836f57c05197e419d
XML-Parser	2.36	XML-Parser-2.36.tar.gz	74acac4f939ebf788d8ef5163cbc9802b1b04bfa
xmodmap	1.0.4	xmodmap-1.0.4.tar.bz2	9b49388bb527a8f7b7e86c4aa4c75a83372f6baa
xorg-server	1.7.1	xorg-server-1.7.1.tar.bz2	d31e259b3ab975e2c1baea8f7310b57152ae3c62
xpr	1.0.3	xpr-1.0.3.tar.bz2	9dbd0ff136b612285e00d92d0c7675a4207b1c4a
xprop	1.1.0	xprop-1.1.0.tar.bz2	16b377c76a4a010200063a056e7a5e244ab6ff00
xproto	7.0.16	xproto-7.0.16.tar.bz2	0eda5588d42f2c810d8491da44fe84a4093e12bc
xrandr	1.3.2	xrandr-1.3.2.tar.bz2	0e49b0a0889ae8a590452c6cd0d60a2253a8d940
xrdb	1.0.6	xrdb-1.0.6.tar.bz2	e4faff5e02b3027298dc589e318a6dc7eb30a6d5
xrefresh	1.0.3	xrefresh-1.0.3.tar.bz2	3f34ceca9509f47e60ddfe14a98225eaffeba705
xset	1.1.0	xset-1.1.0.tar.bz2	ff4295442821826092b17248c1ad65e16cd860ef
xsetroot	1.0.3	xsetroot-1.0.3.tar.bz2	56ed1df9834627a107550475629df51275cd0c44
xterm	254	xterm-254.tgz	934811737745b76ca75bf940feb975943bf1084d
xtrans	1.2.5	xtrans-1.2.5.tar.bz2	e8c4ce58b42d05e613fe535319a7d7f45f30f3e9
xvinfo	1.1.0	xvinfo-1.1.0.tar.bz2	8695bfb597dbf3ed8e3277fddda4722da21baaa3
xwd	1.0.3	xwd-1.0.3.tar.bz2	f6708d14040630d1d3255987c28efcbf7aee05aa
xwininfo	1.0.5	xwininfo-1.0.5.tar.bz2	9730db0d1bd75b8bc5bc399f56cab9f5aee3bcfc
xwud	1.0.2	xwud-1.0.2.tar.bz2	15a6c5e3ffc03b7e8e597947061940fee6c0a9fc

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DS850			
BAPIS	412	COTS-412.tar.bz2	07e4317efb1eee055046a2a55bacb2a0b1b92608
cryptocme	3.0	cryptocme-3.0-rhel30.tar.gz	4fe8c6a6ddbf524cfa88e3e6cf195447afc67977
Linux From Scratch	6.2.5	lfslivecd-x86-6.2-5.iso	b3e3947bf2c3616fa45541c0643a2adfa0618207
lfs_enhanced-2.4.0.0m-src.tar			
alsa-lib	1.0.13	alsa-lib-1.0.13.tar.bz2	82fa9a7fcb43b319524b18451ca86d691a20f4a3
alsa-utils	1.0.13	alsa-utils-1.0.13.tar.bz2	05b460a0e7ae6519ea37240476f026b59dbc710d
aumix	2.8	aumix-2.8.tar.bz2	5cea563ae91f628433a1950a36efd23681da4bf4
beecrypt	4.1.2	beecrypt-4.1.2.tar.gz	71cebd3329bb2561ffba24a2004dfac50b143f59
blfs-bootscripts	20060910	blfs-bootscripts-20060910.tar.bz2	58ff10492f9abceed6ca4a105c479d5f2e3e8002
BLFS-ca-bundle	3.12.5	BLFS-ca-bundle-3.12.5.tar.bz2	8cf4be3072184940f8cfc3888ef0ba1cb58a5377
boost	1.43.0	boost_1_43_0.tar.bz2	b8257b7da2a7222739314f8d1e07e217debe71d6
chkrootkit	0.49	chkrootkit-0.49.tar.gz	cec1a3c482b95b20d3a946b07fffb23290abc4a6
coreutils	6.9	coreutils-6.9.tar.bz2	10310a78c4e1d9f742f3815ac28e9bf1086a5885
cpio	2.6	cpio-2.6.tar.gz	5a4ea156519909994fe05933dc823abcf07e3e21
cpio-security_fixes-1	2.6	cpio-2.6-security_fixes-1.patch	d8445256032b903bbd3cee2694e87412e7dca843
ctags	5.6	ctags-5.6.tar.gz	930afaa138624717393fe475201f795251bd5e5e
curl	7.15.3	curl-7.15.3.tar.bz2	7e764126ce564429fe2f142428a27cbfc8fb69ee
cvs	1.11.22	cvs-1.11.22.tar.bz2	5dfa11da84a890d7d61516fd450c001dc24bcc0d
cvs-zlib-1	1.11.22	cvs-1.11.22-zlib-1.patch	0d20bab8a6b6e419a8c900d082b487ad6a3aec38
dmidecode	2.9	dmidecode-2.9.tar.bz2	0346690d32120b9fff22accd5b4e731414a3676b
docbook-xsl	1.69.1	docbook-xsl-1.69.1.tar.bz2	aaabf0e274609134e187a6c36d2be23f3471f507
dosfstools	2.11	dosfstools-2.11.src.tar.gz	b0d8714475ca7c7a96a46adf7c4839d69ce2f412
expat	2.0.1	expat-2.0.1.tar.gz	663548c37b996082db1f2f2c32af060d7aa15c2d
fuse	2.6.1	fuse-2.6.1.tar.gz	85ec4458d0ab2647b6b43605f0200006d89981ed
gnupg	1.4.3	gnupg-1.4.3.tar.bz2	9e96b36e4f4d1e8bc5028c99fac674482cbdb370
gpm	1.20.1	gpm-1.20.1.tar.bz2	c48d937e62abb438c2f6439b34ef3332c89af8d1
gpm-segfault-1	1.20.1	gpm-1.20.1-segfault-1.patch	da53bf78a0ebaa5020e332aa6d6861159170ed86
gpm-silent-1	1.20.1	gpm-1.20.1-silent-1.patch	8899a212eadfbda201d8da3e44590bd05b97f9f6
libao	0.8.6	libao-0.8.6.tar.gz	2050e008ffcfd6803e2c2c03c7d5f469b6d8379e
libogg	1.1.3	libogg-1.1.3.tar.gz	a3e495a8baf6939efad7e0bd11cc0e466838c3db
libusb	0.1.12	libusb-0.1.12.tar.gz	599a5168590f66bc6f1f9a299579fd8500614807
libvorbis	1.1.2	libvorbis-1.1.2.tar.gz	26289fc41aa5436b1a277d726bb5cb106d675c35
libxml2	2.6.31	libxml2-2.6.31.tar.gz	97233a210425bad96b35e52aa3e0010ac11bbcc9
libxslt	1.1.22	libxslt-1.1.22.tar.gz	55ce4dc659681d9a5ba2322c45cbdfe75b46639c
logrotate	3.7.8	logrotate-3.7.8.tar.gz	5742dc0d9541ac59eba5f5718520f7504aea2159
LPRng	3.8.28	LPRng-3.8.28.tgz	f4373004adb1439819600701bb98517137daf1fc
net-tools	1.60	net-tools-1.60.tar.bz2	944fb70641505d5d1139dba3aeb81ba124574b83
net-tools	1.60	net-tools-1.60.tar.gz	4e8100957be645241d685055ebdde9d5c744cb54
net-tools-gcc34-3	1.60	net-tools-1.60-gcc34-3.patch	a92286932a423fc987f2a152931d05b0a9a312bd
net-tools-gcc34-3	1.60	net-tools-1.60-gcc34-3.patch	a92286932a423fc987f2a152931d05b0a9a312bd
net-tools-kernel_headers-2	1.60	net-tools-1.60-kernel_headers-2.patch	3e59577e904582503b25c7b21f6e3b77b165f84a

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net-tools-kernel_headers-2	1.60	net-tools-1.60-kernel_headers-2.patch	3e59577e904582503b25c7b21f6e3b77b165f84a
net-tools-mii_ioctl-1	1.60	net-tools-1.60-mii_ioctl-1.patch	912613acbf3a000a2935391a14e55b5ccdeeae6b
net-tools-mii_ioctl-1	1.60	net-tools-1.60-mii_ioctl-1.patch	912613acbf3a000a2935391a14e55b5ccdeeae6b
ntfsprogs	1.13.1	ntfsprogs-1.13.1.tar.gz	a4e50f6fc10fcc1e1f562ad64bcbf9a0d46ca72a
nut	2.2.2	nut-2.2.2.tar.gz	f54cc909b229931fb91b4a360f0447b539d4ea6b
openssh	4.5p1	openssh-4.5p1.tar.gz	2eefcbbeb9e4fa16fa4500dec107d1a09d3d02d7
openssl	0.9.8n	openssl-0.9.8d-fix_manpages-1.patch	afb498051e466131ae90dfc678234e8876af88a4
openssl-fix_manpages-1	0.9.8n	openssl-0.9.8n.tar.gz	595f5ebf592568515964f0adc62239e7012ef08b
pkg-config	0.22	pkg-config-0.22.tar.gz	3ec40bda9864d7aa3c912c6ae87a750fd8b6e420
popt	1.10.4	popt-1.10.4.tar.gz	10e6649c4c37ecfb6fb4296aeca609b5fdd5e34d
ppp	2.4.4	ppp-2.4.4.tar.gz	9b91b0117e0a8bfaf8c4e894af79e0960dd36259
Python	2.4.4	Python-2.4.4.tar.bz2	9e0971f93df8acbd947378d0d16a32fcc8897ba2
Python-gdbm-1	2.4.4	Python-2.4.4-gdbm-1.patch	34c3973ba2e519eaf1fd0ecf28ec465ed08bb96d
unzip552	5.52	unzip-5.52-security_fix-1.patch	7f6a287c0b480bc4748abdf69429dfc76383e1d6
unzip-security_fix-1	5.52	unzip552.tar.gz	1831bd59b9e607a69052f83b263384895e2d4a19
usbutils	0.72	usbutils-0.72.tar.gz	891b8825d964880146d5c980e52bb9e23d92fe2b
vorbis-tools	1.1.1	vorbis-tools-1.1.1.tar.gz	a1394b39905b389d72f12c2a9f0c86a33d07a487
vorbis-tools-utf8-1	1.1.1	vorbis-tools-1.1.1-utf8-1.patch	35db6e412cc9df5d8b88b58cae5f2e514bc17823
xerces-c-src	2.8.0	xerces-c-src_2_8_0.tar.gz	f0803b1330daec3f44b17dee64c3c99de6b3cd3e
xsd	3.1.0-i686-linux-gnu	xsd-3.1.0-i686-linux-gnu.tar.bz2	a7bf9b26ff5ab577fcfeccc9ea76134da88ec7e2
zip232	2.32	zip232.tar.gz	5bc562bf95d9aee0cb6625e6038898e1f191a4aa
lfs_graphics-2.4.0.0m-src.tar			
a2ps	4.14	a2ps-4.14.tar.gz	365abbbe4b7128bf70dad16d06e23c5701874852
atk	1.18.0	atk-1.18.0.tar.bz2	d58dfc3dbdad49d8c446e0bd4a0b6260d315ceb0
bdftopcf	1.0.2	bdftopcf-1.0.2.tar.bz2	245778068b5e5ccde07151635ded50da90333524
bigreqsproto	1.1.0	bigreqsproto-1.1.0.tar.bz2	32ae0505ec963cc5c0e3ee9258b126e6865d1b1b
cairo	1.4.14	cairo-1.4.14.tar.gz	63310243ba8af949060b06c01fc28ee5471ed5a4
compositeproto	0.4.1	compositeproto-0.4.1.tar.bz2	fb1ae34418855c313a75e8e697b414a4935e13d6
damageproto	1.2.0	damageproto-1.2.0.tar.bz2	ffe177a6ae2cf023d41e015aa6ece2b191cb8a8a
DirectFB	0.9.22	DirectFB-0.9.22.tar.gz	f3a586c654086c287cd1bcc683be0f234973ee17
dmxproto	2.3	dmxproto-2.3.tar.bz2	a3636d1b54d7bbf273f28c0d3c44101777047865
dri2proto	2.2	dri2proto-2.2.tar.bz2	21e9c0c7e0be5fe971f51589d0573b0273202b7f
encodings	1.0.3	encodings-1.0.3.tar.bz2	615b8367ee20fc50688e4876aa250419927d64cc
fbida	2.07	fbida-2.07.tar.gz	4758178299e09d5251b9cf20337a81cc20553d45
fixesproto	4.1.1	fixesproto-4.1.1.tar.bz2	fb47920c629e08a56442a51968a02a22733085e5
font-adobe-100dpi	1.0.1	font-adobe-100dpi-1.0.1.tar.bz2	814baccf5cf6c6545b7e8f3bbbad377be369042d
font-adobe-75dpi	1.0.1	font-adobe-75dpi-1.0.1.tar.bz2	3cbed8a4a3a6bbe6ccd3d6e07a238f8c9ab7a26c

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		DS850	
font-adobe-utopia-100dpi	1.0.2	font-adobe-utopia-100dpi-1.0.2.tar.bz2	e692c3d3933c47c69656be0fd0f06218c2db138d
font-adobe-utopia-75dpi	1.0.2	font-adobe-utopia-75dpi-1.0.2.tar.bz2	2db08c2e0186831e4d68f7a2ffb2f9fe598a7280
font-adobe-utopia-type1	1.0.2	font-adobe-utopia-type1-1.0.2.tar.bz2	565cb66523f59f02da02aa9e74604634a2113643
font-alias	1.0.2	font-alias-1.0.2.tar.bz2	9a0e97d974349e3a943b0ab77015f115f15d34c3
font-arabic-misc	1.0.1	font-arabic-misc-1.0.1.tar.bz2	d11a7bdce7500c3ccc2fe59505f2bc89e4c7aa2a
font-bh-100dpi	1.0.1	font-bh-100dpi-1.0.1.tar.bz2	4f3edda5dd35145cbd1ce8759e0a999b3a04f9c0
font-bh-75dpi	1.0.1	font-bh-75dpi-1.0.1.tar.bz2	7b891d5bfd966c405c19574bca8f87b8803146d1
font-bh-lucidatypewriter-100dpi	1.0.1	font-bh-lucidatypewriter-100dpi-1.0.1.tar.bz2	a1c9d28a619358092f7196473ff3e0f0dc5304d0
font-bh-lucidatypewriter-75dpi	1.0.1	font-bh-lucidatypewriter-75dpi-1.0.1.tar.bz2	26efd25d2802c8406a96ccc3240b2c14e511d49f
font-bh-ttf	1.0.1	font-bh-ttf-1.0.1.tar.bz2	0e9ffbc738072ca832cdf5f82bff071c67b71825
font-bh-type1	1.0.1	font-bh-type1-1.0.1.tar.bz2	b960d8523b02d4401dc6e1257f68dc120761ee4b
font-bitstream-100dpi	1.0.1	font-bitstream-100dpi-1.0.1.tar.bz2	ba163df365a591de5eb9e45fa302059d572dd171
font-bitstream-75dpi	1.0.1	font-bitstream-75dpi-1.0.1.tar.bz2	43344b8ff3b2c2fda8d4cdbcc12c0688b2e04789
font-bitstream-type1	1.0.1	font-bitstream-type1-1.0.1.tar.bz2	53800b904fc3ead6b577a34fb7c1f96c1af4423f
fontconfig	2.8.0	fontconfig-2.8.0.tar.gz	570fb55eb14f2c92a7b470b941e9d35dbfafa716
font-cronyx-cyrillic	1.0.1	font-cronyx-cyrillic-1.0.1.tar.bz2	dfff5974629dab97677a70fa20e21c2cf48071a0
font-cursor-misc	1.0.1	font-cursor-misc-1.0.1.tar.bz2	5087a94e74f8157cb6989f71fb3b4815b236065a
font-daewoo-misc	1.0.1	font-daewoo-misc-1.0.1.tar.bz2	d169cec4e92fe1e99f3ff6766d4c6edcbb808860
font-dec-misc	1.0.1	font-dec-misc-1.0.1.tar.bz2	2489d19650f2a787b476dab2fa2412d20b95f38e
font-ibm-type1	1.0.1	font-ibm-type1-1.0.1.tar.bz2	9bcf72bcabfcbe218ad3a96ba2a45e92ef9efbc3
font-isas-misc	1.0.1	font-isas-misc-1.0.1.tar.bz2	13fe07a669dd93dfdb08717a03efe47936ab9cea
font-jis-misc	1.0.1	font-jis-misc-1.0.1.tar.bz2	adb3275d19e71e9553aa8a5fdc3b2c647277d8d4
font-micro-misc	1.0.1	font-micro-misc-1.0.1.tar.bz2	74a8be2b0b6ace97d8841356e88570f5fa3faad6
font-misc-cyrillic	1.0.1	font-misc-cyrillic-1.0.1.tar.bz2	c178f8a8b6897a8382a0f4315a5b577760ba703c
font-misc-ethiopic	1.0.1	font-misc-ethiopic-1.0.1.tar.bz2	2677191fd8b515c53bde6402513249fc0f48d53a
font-misc-meltho	1.0.1	font-misc-meltho-1.0.1.tar.bz2	d20d9f8ffdeb88b62842b021d5d3d2a8cc31ea2c
font-misc-misc	1.1.0	font-misc-misc-1.1.0.tar.bz2	83c44111b5727c26e52eb915b66dc6c9eba4c458
font-mutt-misc	1.0.1	font-mutt-misc-1.0.1.tar.bz2	b677831b477027f56ad3f35c95ef3cd6711f87ac
font-schumacher-misc	1.1.0	font-schumacher-misc-1.1.0.tar.bz2	ea7e009e222379fa31a16bdbd4ca5b1e9d412944
font-screen-cyrillic	1.0.2	font-screen-cyrillic-1.0.2.tar.bz2	4795ea77e14246122d21bc0fa68a3c0d5261e39d
font-sony-misc	1.0.1	font-sony-misc-1.0.1.tar.bz2	e9717546682382ebf3e6e7039766fe52bdb8846c
fontsproto	2.1.0	fontsproto-2.1.0.tar.bz2	395b300fd5120a7ff90cb8fea4e2356b9632dc3e
font-sun-misc	1.0.1	font-sun-misc-1.0.1.tar.bz2	fc91999e66fe479d07ea74e5dd2d950ff02ccb80
font-util	1.1.1	font-util-1.1.1.tar.bz2	6ee3af5466de84d61411e173e578a256aeb1074d
font-winitzki-cyrillic	1.0.1	font-winitzki-cyrillic-1.0.1.tar.bz2	d19f476710783d784dfdbcb6a1f34ef7746d3439
font-xfree86-type1	1.0.2	font-xfree86-type1-1.0.2.tar.bz2	09a4c9b8455f3f4954bfe9dd991d7fd1d0f5595a

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DS850			
Freetype	2.3.12	freetype-2.3.12.tar.bz2	ebf0438429c0bedd310059326d91646c3c91016b
giflib	4.1.4	giflib-4.1.4.tar.bz2	2f9aed5d20d862270008bd2f8d4c91cf14c6067b
glib	2.12.12	glib-2.12.12.tar.bz2	527bced2e6d38169c08c8712d5e3b6ebb0dc46b5
glproto	1.4.11	glproto-1.4.11.tar.bz2	7c2a723d488dc0e09e7e0e28bde838502d774b16
gperf	3.0.3	gperf-3.0.3.tar.gz	3c535d2727eb0dca10ca87cefa03720a8280c7a2
gtk+	2.10.13	gtk+-2.10.13.tar.bz2	8d00b928a8788ff86d97197c20c18d41f9a1b1cd
iceauth	1.0.3	iceauth-1.0.3.tar.bz2	b75b87fed108bc4fe14ef06f76025016fa54299a
ImageMagick	6.2.8-0	ImageMagick-6.2.8-0.tar.bz2	637569bbcb331233c86258f6c681d5a7c849cba0
inputproto	2.0	inputproto-2.0.tar.bz2	3ed9879b7dd3c14ae2283959f5962162fc01c219
intltool	0.40.6	intltool-0.40.6.tar.bz2	4f6469e09e2c06a8072dffff36f84ff401d7ea75
jpeg-6b-destdir-1	v6b	jpeg-6b-destdir-1.patch	7b86d4e94a6350fc03f56b09565d780aa1f0eda4
jpegsrc	v6b	jpegsrc.v6b.tar.gz	7079f0d6c42fad0cfba382cf6ad322add1ace8f9
kbproto	1.0.4	kbproto-1.0.4.tar.bz2	d300745389d3a80d90c9a3c989651f228db486e5
libdmx	1.1.0	libdmx-1.1.0.tar.bz2	8719434f167d476d53fca57c5be516c153354d60
libdrm	2.4.14	libdrm-2.4.14.tar.bz2	a18cc2cdfd02b8ba1c91c3e9ac609521ad3e2fe9
libexif	0.6.19	libexif-0.6.19.tar.bz2	820f07ff12a8cc720a6597d46277f01498c8aba4
libfontenc	1.0.5	libfontenc-1.0.5.tar.bz2	e71370c349e93ba70f91ad1148ca9e5cabfcca4f
libFS	1.0.2	libFS-1.0.2.tar.bz2	41cf53fae37210acaa034199f01f36af3f3ec548
libICE	1.0.6	libICE-1.0.6.tar.bz2	ac1f702ea580bd496610266b13434858b62df9e1
libpciaccess	0.11.0	libpciaccess-0.11.0.tar.bz2	bcebba8b8441af151b59b63e8e91e66133b64158
libpng	1.2.42	libpng-1.2.42.tar.bz2	e41cea7a6f5e3065f4289de3742db87ded05b99d
libpthread-stubs	0.1	libpthread-stubs-0.1.tar.bz2	34ef40880d0112dc6d32b386d59ce94f2c139eef
librsvg	2.14.4	librsvg-2.14.4.tar.bz2	9314f0d44dbfe672dc1f1a65b66821593c3bf1ce
libSM	1.1.1	libSM-1.1.1.tar.bz2	dc535af7328dee9a6121b85c3f8041656681a195
libX11	1.3.3	libX11-1.3.3.tar.bz2	2a19724ccf78b5bb5a8eba9159d2b95e640e7b11
libXau	1.0.5	libXau-1.0.5.tar.bz2	b1c68843edf7e80ce952f7ee0541448f41bac202
libXaw	1.0.7	libXaw-1.0.7.tar.bz2	0e5effe33c4c44d960132e3dd50370134a28f8b2
libXcomposite	0.4.1	libXcomposite-0.4.1.tar.bz2	959180b067c64f3f7ac06e85400bd265e5579031
libXcursor	1.1.10	libXcursor-1.1.10.tar.bz2	096d0e538d37fd865705e5f45b0e96c7294c1f2f
libXdamage	1.1.2	libXdamage-1.1.2.tar.bz2	dc1fbc938e9bbc859c70cf2087440fc15b00bb1e
libXdmcp	1.0.3	libXdmcp-1.0.3.tar.bz2	7efd71d29d6cfba797b8791398e4d81ade677d77
libXext	1.1.1	libXext-1.1.1.tar.bz2	c2eb8d8d760c6881e51c938812764d1d6cefd51c
libXfixes	4.0.4	libXfixes-4.0.4.tar.bz2	3f2d1c473855ba0cf13137a80d585df7fe37111c
libXfont	1.4.1	libXfont-1.4.1.tar.bz2	f8dc669760975b41885143f828b54164224c8a31
libXft	2.1.14	libXft-2.1.14.tar.bz2	e08ae6b1f56e160179b9f141b4ab799333ec725e
libXi	1.3	libXi-1.3.tar.bz2	7685f2881ce40b13028d9409eedbb9cf1ed0d8ef
libXinerama	1.1	libXinerama-1.1.tar.bz2	5f445194ef3318f66c287c0c69f778988a3f9266
libxkbfile	1.0.6	libxkbfile-1.0.6.tar.bz2	6364e0679eb893d6fbb6adcf0e8230cfdefe0b68

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DS850			
LibXmu	1.0.5	libXmu-1.0.5.tar.bz2	e7ff5960f2374852b941f909cdbdeafe7d29322f
libXpm	3.5.8	libXpm-3.5.8.tar.bz2	3bfc833ed4527f74b1c66c386da62271d0313413
libXrandr	1.3.0	libXrandr-1.3.0.tar.bz2	33dd2f67060465f872db9ea03f597e28517f0c8e
libXrender	0.9.5	libXrender-0.9.5.tar.bz2	278f762feb8e754aa5214175abf580ff486281f7
libXres	1.0.4	libXres-1.0.4.tar.bz2	d5ee9560a61666e6bb3d2285b9634fccd7211d65
libXScrnSaver	1.2.0	libXScrnSaver-1.2.0.tar.bz2	ea2935eb67efa77fd90372337f2d782a8ef74cea
libXt	1.0.7	libXt-1.0.7.tar.bz2	3c285b9c04a393dec1cc3d60cf5582d798eb3272
libXtst	1.1.0	libXtst-1.1.0.tar.bz2	4363e9285bfb5a884073efacc50d39edb803a1a5
libXv	1.0.5	libXv-1.0.5.tar.bz2	3936dd661e75d173b9fd1da9d97e5720e9657254
libXvMC	1.0.5	libXvMC-1.0.5.tar.bz2	153b85884f22b882cecb9fc462fe24c669a80dbd
libXxf86dga	1.1.1	libXxf86dga-1.1.1.tar.bz2	a93004cfbe4fd6bc37c6645705d5a6d90c0940b7
libXxf86vm	1.1.0	libXxf86vm-1.1.0.tar.bz2	f5ce7854f201d9c69dfcdd13123b51f497b69a47
makedepend	1.0.2	makedepend-1.0.2.tar.bz2	57e092856580d9984e47c4b1433b69391de07df3
mkfontdir	1.0.5	mkfontdir-1.0.5.tar.bz2	971728b0f453ea5df028aa5d54fe3fbdb8e99a7d
mkfontscale	1.0.7	mkfontscale-1.0.7.tar.bz2	0a0c25da68c87380e2c013c808a6e0cc0983fae9
pango	1.16.4	pango-1.16.4.tar.bz2	6a21126632ed99950818c64d8598b6e92fa7da58
pixman	0.15.20	pixman-0.15.20.tar.gz	a5f973b6895e269731964fbe328f61a8cbfdc931
qt-x11-opensource-src	4.5.0	qt-x11-opensource-src-4.5.0.tar.gz	503842349b644fb6af6e6c735bec7174ebcd6245
randrproto	1.3.1	randrproto-1.3.1.tar.bz2	36731bae6e815453af4b055c26ad8e9e2653ca05
recordproto	1.14	recordproto-1.14.tar.bz2	212928572898ed150366c6026e2694b193ff9f79
renderproto	0.11	renderproto-0.11.tar.bz2	d30cf508b1a1b5f0deb1c6db41ba2f4e57680637
resourceproto	1.1.0	resourceproto-1.1.0.tar.bz2	36b86840005c15e393c86d7075688d430ab2a11d
scrnsaverproto	1.2.0	scrnsaverproto-1.2.0.tar.bz2	c734cfe9a1ce57fd42957389dcc90518fd7ca6b6
sessreg	1.0.5	sessreg-1.0.5.tar.bz2	d1dac6a398b23ed44bb67286ec083e9071bd00e7
setxkbmap	1.1.0	setxkbmap-1.1.0.tar.bz2	f02f93a08ac060d760566693c748e0fba3db8a06
smproxy	1.0.3	smproxy-1.0.3.tar.bz2	1ba44a4a58b05d6a6f7c4b1f67b793dce2ccf2ba
splashy	0.3.12	splashy-0.3.12.tar.gz	4e721222b20b8fd3fbb8c845ed5c0f05ccead68a
tiff	3.8.2	tiff-3.8.2.tar.gz	549e67b6a15b42bfcd72fe17cda7c9a198a393eb
twm	1.0.4	twm-1.0.4.tar.bz2	7456e90f19e4747e1785f596b93f692d68a9f079
util-macros	1.5.0	util-macros-1.5.0.tar.bz2	ac61387be2a0b97f839041832bd8d06e03cfc942
videoproto	2.3.0	videoproto-2.3.0.tar.bz2	4aef2b438d45b3ab75e640996ce1267d3468f48c
x11perf	1.5.1	x11perf-1.5.1.tar.bz2	d1f85da3df5b216b64c1735d109380214787222d
xauth	1.0.4	xauth-1.0.4.tar.bz2	90d32f28bb61ca6d831dcc35429a5ad53be73283
xbacklight	1.1.1	xbacklight-1.1.1.tar.bz2	3541ab5e0956b4f0c97b1200dc32a35d2ccb0f0f
xbitmaps	1.1.0	xbitmaps-1.1.0.tar.bz2	845b825f7e6d193d47db8b67ae8332d87ef8c2b3
xclock	1.0.4	xclock-1.0.4.tar.bz2	1987cafb3163c6b68bc7ecfbe143c8cd373d64bb
xcmiscproto	1.2.0	xcmiscproto-1.2.0.tar.bz2	1a55e042b33c0e0aaf2299942315a5208d644707
xcmsdb	1.0.2	xcmsdb-1.0.2.tar.bz2	8341f7219a5720da758b0571eb1f4d9072265485
xcursorgen	1.0.3	xcursorgen-1.0.3.tar.bz2	7df26b371476654dc191c45e7d20ae3a5e0cad87
xcursor-themes	1.0.2	xcursor-themes-1.0.2.tar.bz2	12b865c17c65e70a6bc20300dfa660fe8faaa0a4
xdpyinfo	1.1.0	xdpyinfo-1.1.0.tar.bz2	01971f007048a46a4a31a69c661bc3a378de60f0
xdriinfo	1.0.3	xdriinfo-1.0.3.tar.bz2	d211d6f12f4c801d2f4cf184c6daae37aa5858ff
xev	1.0.4	xev-1.0.4.tar.bz2	4f62e131ba96842eef1660e8869533cd3923ac35

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DS850			
Xextproto	7.1.1	xextproto-7.1.1.tar.bz2	1bb4bd12d65a17b3168dc9b4e028b33a2f7b2cad
xf86bigfontproto	1.2.0	xf86bigfontproto-1.2.0.tar.bz2	312a2ea708b257520c1af4393b69d73a393a478f
xf86dgaproto	2.1	xf86dgaproto-2.1.tar.bz2	97a06120e7195c968875e8ba42e82c90ab54948b
xf86driproto	2.1.0	xf86driproto-2.1.0.tar.bz2	0dfc6616ffc68ca3c3b5decb1e365aaa93be8548
xf86-input-keyboard	1.4.0	xf86-input-keyboard-1.4.0.tar.bz2	5061fdaff8b7ddcbcca82f065c4abbfff255a1da
xf86-input-mouse	1.5.0	xf86-input-mouse-1.5.0.tar.bz2	b9213bf745b793a3da2c946ea4d8ee5768e560f4
xf86-video-vesa	2.3.0	xf86-video-vesa-2.3.0.tar.bz2	4689b7c295d7a8d7326302dafecb812739617134
xf86vidmodeproto	2.3	xf86vidmodeproto-2.3.tar.bz2	22d034c2f66985f8541b9ea3421096ceaa006355
xgamma	1.0.3	xgamma-1.0.3.tar.bz2	f9c7d93f4b271bab41ee3c91b371d52572e4e08c
xhost	1.0.3	xhost-1.0.3.tar.bz2	ebcdccdc908e642e527eebbde6ba8084d90c04f6
xineramaproto	1.2	xineramaproto-1.2.tar.bz2	3c397c9ea38aaae785dd7901f250891dfa7f3249
xinit	1.2.0	xinit-1.2.0.tar.bz2	85a838c2010f27ef6d09d6ec4b1208a66cc8d697
xinput	1.5.0	xinput-1.5.0.tar.bz2	02d1ccc83007aa7848b1b024ac64c310303f973e
xkbcomp	1.1.1	xkbcomp-1.1.1.tar.bz2	aeb733c495d7afd42136bf8ae5c6e792c63f0b4b
xkbevd	1.1.0	xkbevd-1.1.0.tar.bz2	b510b4a1b7486beacb5570c204f7fdd4b61f0ab4
xkbutils	1.0.2	xkbutils-1.0.2.tar.bz2	2c025038ca12ee2494b2401ea2c12c74fe88bf91
xkeyboard-config	1.7	xkeyboard-config-1.7.tar.bz2	d6df43bfc0596be04865f2be7c4e794e198358c8
xkill	1.0.2	xkill-1.0.2.tar.bz2	90f08652859daf71b682c3b9163ebf72ce88c4bc
xlsatoms	1.0.2	xlsatoms-1.0.2.tar.bz2	3855734b5ec0d43b5886ac0ffa58d7cf96f46926
xlsclients	1.0.2	xlsclients-1.0.2.tar.bz2	5cde39a28c5352d1d555714836f57c05197e419d
XML-Parser	2.36	XML-Parser-2.36.tar.gz	74acac4f939ebf788d8ef5163cbc9802b1b04bfa
xmlroff	0.6.2	xmlroff-0.6.2.tar.gz	4a540b067881e069d389cce40bc79578cffc7c9b
xmodmap	1.0.4	xmodmap-1.0.4.tar.bz2	9b49388bb527a8f7b7e86c4aa4c75a83372f6baa
xorg-server	1.7.1	xorg-server-1.7.1.tar.bz2	d31e259b3ab975e2c1baea8f7310b57152ae3c62
xpr	1.0.3	xpr-1.0.3.tar.bz2	9dbd0ff136b612285e00d92d0c7675a4207b1c4a
xprop	1.1.0	xprop-1.1.0.tar.bz2	16b377c76a4a010200063a056e7a5e244ab6ff00
xproto	7.0.16	xproto-7.0.16.tar.bz2	0eda5588d42f2c810d8491da44fe84a4093e12bc
xrandr	1.3.2	xrandr-1.3.2.tar.bz2	0e49b0a0889ae8a590452c6cd0d60a2253a8d940
xrdb	1.0.6	xrdb-1.0.6.tar.bz2	e4faff5e02b3027298dc589e318a6dc7eb30a6d5
xrefresh	1.0.3	xrefresh-1.0.3.tar.bz2	3f34ceca9509f47e60ddfe14a98225eaffeba705
xset	1.1.0	xset-1.1.0.tar.bz2	ff4295442821826092b17248c1ad65e16cd860ef
xsetroot	1.0.3	xsetroot-1.0.3.tar.bz2	56ed1df9834627a107550475629df51275cd0c44
xterm	254	xterm-254.tgz	934811737745b76ca75bf940feb975943bf1084d
xtrans	1.2.5	xtrans-1.2.5.tar.bz2	e8c4ce58b42d05e613fe535319a7d7f45f30f3e9
xvinfo	1.1.0	xvinfo-1.1.0.tar.bz2	8695bfb597dbf3ed8e3277fddda4722da21baaa3
xwd	1.0.3	xwd-1.0.3.tar.bz2	f6708d14040630d1d3255987c28efcbf7aee05aa
xwininfo	1.0.5	xwininfo-1.0.5.tar.bz2	9730db0d1bd75b8bc5bc399f56cab9f5aee3bcfc
xwud	1.0.2	xwud-1.0.2.tar.bz2	15a6c5e3ffc03b7e8e597947061940fee6c0a9fc
lfs_kernel-2.6.22.19-src.tar			
linux kernel	2.6.22.9	linux-2.6.22.19.tar.bz2	fd0767105a5bac3010562692cd53c8506814e9ff