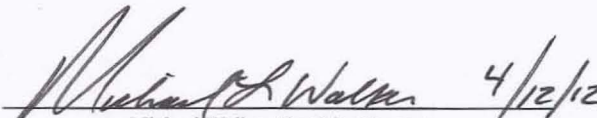**wyle**

7800 Highway 20 West
Huntsville, Alabama 35806
Phone (256) 837-4411
Fax (256) 721-0144
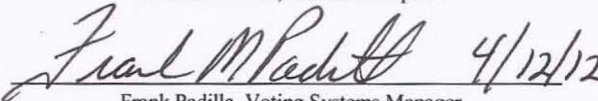www.wyle.com

Job No. T58722.01
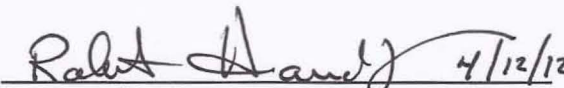Certification Test Plan No. T58722 .01 REV A
April 12, 2012

CERTIFICATION TEST PLAN
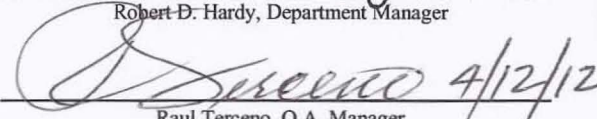
Prepared for:

Manufacturer Name	ES&S
Manufacturer System	Unity 3.4.0.0
EAC Application No.	ESS1103
Manufacturer Address	11208 John Galt Boulevard Omaha, NE 68137

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NVLAP
NVLAP LAB CODE 200771-0

VSTL
EAC Lab Code 0704

			REPORT NO. Test Plan No. T58722.01 Rev A
	wyle laboratories		**DATE** 4/12/2012
REV	**DATE**	**PAGE OR PARAGRAPH AFFECTED**	**DESCRIPTION OF CHANGES**
---	12-5-11	Entire Document	Original Release
A	4-12-12	Entire Document	Complete document edited based on project scope changes.

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APPENDICES

1.0 INTRODUCTION

The purpose of this National Certification Test Plan is to document the strategy Wyle Laboratories, Inc., will follow during certification testing of the Election Systems and Software (ES&S) Unity 3.4.0.0 System. Unity 3.4.0.0 is a modification to Unity 3.2.1.0. ES&S submitted the Unity 3.4.0.0 System to Wyle Laboratories, Inc., for certification to the 2002 VSS. Per Section 4.4.2.3 of the EAC Testing and Certification Program Manual, all testing on the modifications to the system will be tested to the 2005 VVSG; however, pending successful completion of this test campaign, the system will only be granted a 2002 VSS certification since the system, as a whole, will not be tested to the 2005 VVSG.

There are 2 major changes in the modification of the system.

1.   To add a Landline Modem solution to the DS200. This function enables jurisdictions to modem results from a precinct to a central location. In addition to modeming, the Hardware Programming Manager (HPM) and Election Reporting Manager (ERM) applications were modified to support the addition of modem functionality.

2.   To add the DS850, a high speed digital scan central count. The DS850 provides jurisdictions an option for a high speed central counter. In addition to the DS850, the Hardware Programming Manager (HPM) and Election Reporting Manager (ERM) applications were modified to support the addition to the DS850.

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

1.1 Scope

The focus of this test campaign will be to test all additions and modifications made to the system's software, hardware and firmware since the last certification. Wyle will perform full-functional testing on the wired landline modem capabilities of the DS200 and functional testing on the introduction of the DS850 to the Unity 3.4.0.0 System. Wyle will perform system integration testing to verify the changes to HPM and ERM and that no other parts of the Election Management Software (EMS) are affected by this upgrade.

There are no proposed changes or modifications to the M100, M650 or the AutoMARK in this test campaign, therefore no component level testing will be included for this equipment as it was covered under the Unity 3.2.1.0 (ESSUnity3210). Any updates or changes to the firmware shall be notated and verified to include any necessary regression testing. Upon the completion of this test campaign, the results of the testing will be evaluated and an analysis of the impact on all related systems shall be performed prior to completion of the final test report.

1.2 References

The documents listed below were used in the development of the Test Plan and are 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

1.0   INTRODUCTION (Continued)

1.2   References (Continued)

- 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, Revision-5

- 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

- Guidance – Unity 3.2.1.0 Rev. 1, dated August 26, 2011

A listing of the Unity 3.4.0.0 System Technical Data Package (TDP) documents submitted for this certification test effort is listed in Section 3.4, Deliverable Materials.

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.
AutoMARK Management Information System	AIMS	A windows-based election management system software application to define election parameters for the VAT, including functionality to import election definition files produced by the Unity EMS and create VAT flash memory cards

1.0   INTRODUCTION (Continued)

1.3   Terms and Abbreviations (Continued)

Table 1-1 Terms and Abbreviations (Continued)

Term	Abbreviation	Definition
Audit Manager	AM	System software that provides security and user tracking for Election Data Manager (EDM) and ES&S Ballot Image Manager (ESSIM).
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.
Election Data Manager	EDM	Unity EMS data entry component.
Election Management System	EMS	Within the Unity 3.4.0.0 System, the EMS is comprised of eight components: AIMS, AM, EDM, HPM, ESSIM, ERM, Log Monitor Service, and VAT Previewer.
Election Reporting Manager	ERM	Unity EMS reporting component.
Election Systems and Software	ES&S	---
ESSIM	ESS Image Manager	A desktop publishing tool that allows users to design and print ES&S paper ballots.
Equipment Under Test	EUT	---
Functional Configuration Audit	FCA	Verification of system functions and combination of functions cited in the manufacturer's documentation.
Hardware Programming Manager	HPM	An election package primarily used for converting election files and creating and loading election parameters.
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	--
System Under Test	SUT	---
Technical Data Package	TDP	Manufacturer documentation related to the voting system required to be submitted as a precondition of certification testing.
Test Case Procedure Specifications	TCPS	Wyle-developed document that specifies test items, input specifications, output specifications, environmental needs, special procedural requirements, inter-case dependencies, and all validated test cases that will be executed during the area under test.
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.

1.4   Testing Responsibilities

All core and non-core software and hardware certification testing will be conducted under the guidance of Wyle Laboratories, Inc. by personnel verified by Wyle to be qualified to perform the testing.

Review of the test cases and results of developmental testing conducted by ES&S during the pre-certification process also allowed for assessment of ES&S's efforts to develop and test the system and to correct any known defects.

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 planned estimates presented for informational purposes.

1.0 INTRODUCTION (Continued)

1.4 Testing Responsibilities (Continued)

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 will be augmented with specially designed test cases tailored to the ES&S Unity 3.4.0.0 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 Wyle Operating Procedures (WoPs) throughout the duration of this test campaign. The validated WoPs have been previously submitted to the EAC for review.

1.4.5 Third-Party Tests

Wyle will not utilize any 3rd party testing during performance of the ES&S Unity 3.4.0.0 System test campaign.

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 Unity 3.4.0.0 System test campaign will consist of testing all modifications (including all ECO's and source code updates), the inclusion of the Landline Modem and the DS850 to the applicable EAC 2005 VVSG requirements.

1.4.8 Beyond VVSG

Wyle witnessed a machine volume test and a suite of negative tests on-site at ES&S. There were no issues found during the execution of the test cases during this period. The test cases which were performed by ES&S and witnessed by Wyle will be provided as required for reference. 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 Unity 3.4.0.0 System, as taken from the ES&S technical documentation.

1.5.1   System Overview

The ES&S Unity 3.4.0.0 Election System is a comprehensive suite of vote tabulation equipment and software solutions providing end-to-end election management. The Unity 3.4.0.0 Voting System includes the following core system components detailed in Tables 1-2 and 1-3.

Table 1-2 Unity 3.4.0.0 System Hardware Components

Component	Hardware Version	Firmware Version
Model 100	1.3	5.4.4.5
DS200	1.2	1.6.0.0
Model 650	1.1, 1.2	2.2.2.0
AutoMARK	1.0, 1.1, 1.3	1.3.2907
DS850	1.0	2.2.0.0

Table 1-3 Unity 3.4.0.0 System Software Components

Component	Version
Audit Manager (AM)	7.5.2.0
Election Data Manager (EDM)	7.8.1.0
ES&S Ballot Image Manager (ESSIM)	7.7.1.0
Hardware Programming Manager (HPM)	5.8.0.0
Election Reporting Manager (ERM)	7.8.0.0
Log Monitor Service	1.0.0.0
AIMS	1.3.257
VAT Previewer	1.3.2907

1.5.2   System Hardware

The ES&S Unity 3.4.0.0 System can be set up to support one or more of the following hardware components:

- Model 100 Precinct Tabulator

- DS200 Precinct Tabulator

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1.0   INTRODUCTION (Continued)

1.5   Target of Evaluation Description (Continued)

1.5.2   System Hardware (Continued)

- Model 650 Central Tabulator

- AutoMARK Voting Assist Terminal

- DS850 Central Tabulator

Each of these components is described in the paragraphs that follow.

Model 100

The Model 100 is a precinct-based, voter-activated paper ballot tabulator that uses Intelligent Mark Recognition (IMR) visible light scanning technology to detect completed ballot targets. The Model 100 is designed to alert voters of overvotes, undervotes and blank ballots. It accepts ballots inserted in any orientation. Once the ballot is scanned by the Model 100, it is passed to the integrated ballot box.

Photograph 1: Model 100 (on plastic ballot box)

1.0   INTRODUCTION (Continued)

1.5.2   System Hardware (Continued)

Precinct Ballot Tabulator: 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 2: DS200 (on plastic ballot box)

1.0   INTRODUCTION (Continued)

1.5   Target of Evaluation Description (Continued)

1.5.2   System Hardware (Continued)
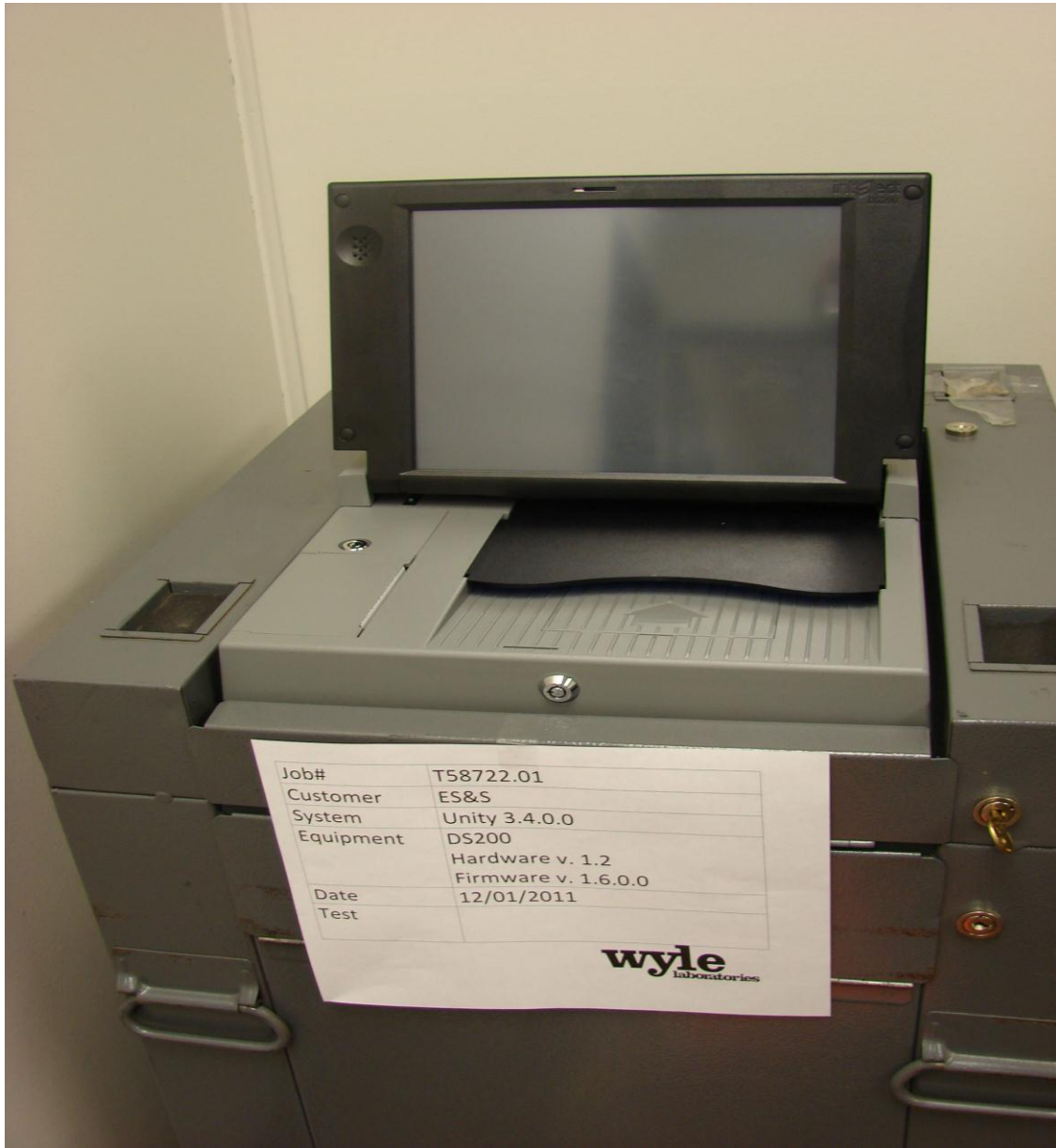
Photograph 3: DS200 (on metal ballot box)

1.0 INTRODUCTION (Continued)

1.5 Target of Evaluation Description (Continued)

1.5.2 System Hardware (Continued)

Tabulator: Model 650

The Model 650 is a high-speed, optical scan central ballot counter. During scanning, the Model 650 prints a continuous audit log to a dedicated printer and can print results directly from the scanner to another printer. The M650 can transfer results to a Zip Disk that officials use to generate results using Election Reporting Manager. The M650 is capable of sorting write-ins, blanks, overvotes and illegal ballots.

Photograph 4: Model 650

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 and A200 both 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.
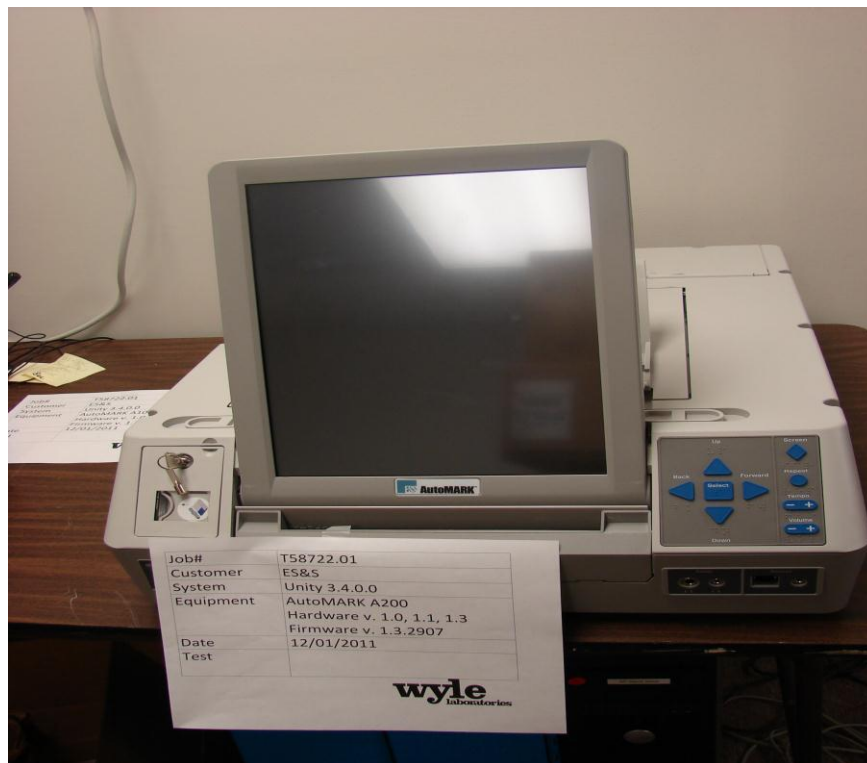
Photograph 5: AutoMARK A200 VAT

1.0 INTRODUCTION (Continued)

1.5 Target of Evaluation Description (Continued)

1.5.2 System Hardware (Continued)
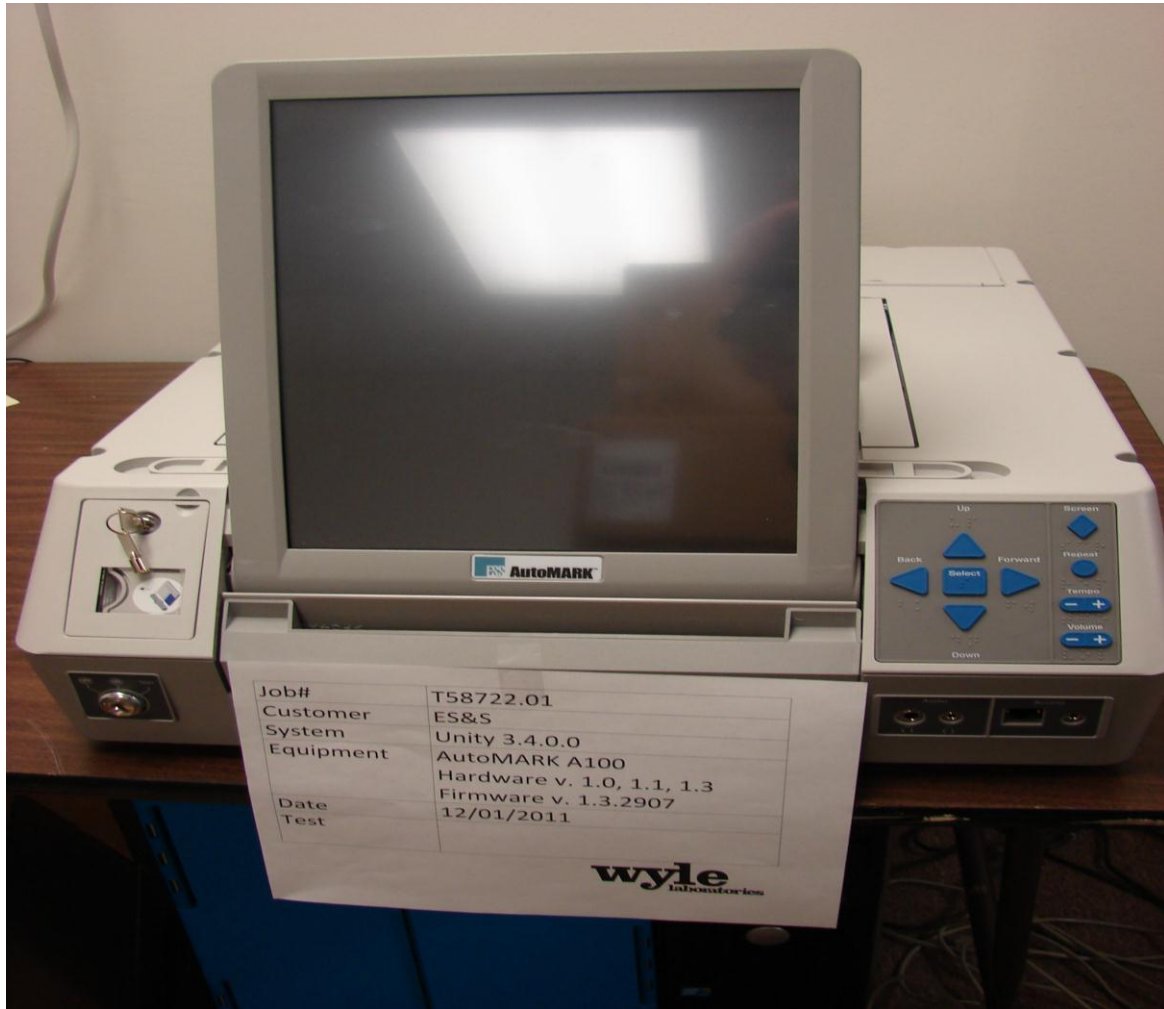
Photograph 6: AutoMARK A100 VAT

Tabulator: DS850

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.

1.0   INTRODUCTION (Continued)

1.5   Target of Evaluation Description (Continued)

1.5.2   System Hardware (Continued)

Photograph 7: DS850

Cisco ASA 5505

The Cisco ASA 5505 Adaptive Security Appliance is a next-generation, full-featured security appliance. The Cisco ASA 5505 features a flexible 8-port 10/100 Fast Ethernet switch only two of which are active. The Cisco ASA 5505 as configured supports 2 VLANS i.e. a DMZ and an Inside LAN. The RAS and SFTP Server reside on the DMZ. The SFTP Client and EMS reside on the Inside LAN. The DMZ is required to isolate the Inside LAN from any connectivity with the outside e.g. the dial-up connections through the RAS. The Cisco ASA 5505 Adaptive Security Appliance is further configured to only allow SSH traffic i.e. traffic on port 22.

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1.0   INTRODUCTION (Continued)

1.5   Target of Evaluation Description (Continued)

1.5.2   System Hardware (Continued)

Photograph 8: Cisco Router Top View
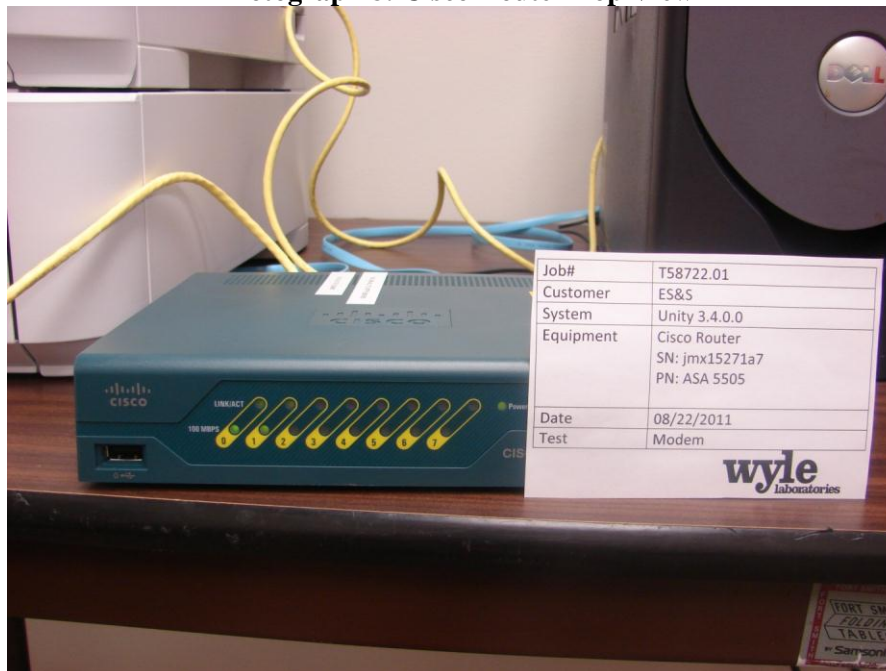
Photograph 9: Cisco Router Front View

1.0   INTRODUCTION (Continued)

1.5   Target of Evaluation Description (Continued)

1.5.2   System Hardware (Continued)

Remote Access Service (RAS)

The RAS server, which is part of the Windows 2003 R2 operating system, allows incoming DS200 remote access dial-up connections to the SFTP server.

Photograph 10: SFTP Server Configuration

1.5.3   System Software

The Unity 3.4.0.0 Election Management System is an application suite comprised of eight components: AutoMark Information Management System, Audit Manager, Election Data Manager, ES&S Ballot Image Manager, Hardware Programming Manager, Election Reporting Manager, Log Monitor Service, and VAT Previewer.

AutoMark Information Management System (AIMS)

AIMS is a windows-based election management system software application used to define election parameters for the VAT, including functionality to import election definition files produced by the Unity EMS and create VAT flash memory cards.

1.0 INTRODUCTION (Continued)

1.5 Target of Evaluation Description (Continued)

1.5.3 System Software (Continued)

VAT Previewer

The VAT Previewer is an application within the AIMS program that allows the user to preview audio text and screen layout prior to downloading election-day media for the AutoMARK.

Audit Manager (AM)

The Audit Manager (AM) utility provides security and user tracking for Election Data Manager and ES&S Ballot Image Manager. Audit Manager runs in the background of the other Unity programs and provides password security and a real-time audit log of all user inputs and system outputs. Election coders use Audit Manager to set Unity system passwords and track user activity.

Election Data Manager (EDM)

The Election Data Manager (EDM) is the entry point for the Unity Election Management System. Election Data Manager is a single-entry database that stores precinct, office, and candidate information. Data entered for an initial election is stored to a re-useable database to be recalled and edited for all elections that follow. Election Data Manager is used in conjunction with other Unity software to format and print ballots, program ballot scanning equipment, and produce Election Day reports.

ES&S Ballot Image Manager (ESSIM)

The ES&S Ballot Image Manager (ESSIM) uses ballot style information created by Unity Election Data Manager to display the ballots in a WYSIWIG design interface. Users can apply typographic formatting (font, size, attributes, etc.) to individual components of the ballot. Text and graphic frames can also be added to the ballot.

Hardware Programming Manager (HPM)

The Hardware Programming Manager (HPM) uses the election specific database created with Election Data Manager and ES&S Ballot Image Manager to program the appropriate media for ES&S tabulation devices. Hardware Programming Manager converts the ballot layout data into the format required for each ES&S tabulator. HPM then writes this data to the appropriate media required; a USB flash drive for the DS200 and DS850, a PCMCIA card for the Model 100, a CF card for the AutoMark or a Zip disk for Model 650 tabulators.

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 results reports directly to media outlets. ERM supports accumulation and combination of ballot results data from all ES&S tabulators. Precinct and accumulated totals 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.

1.0   INTRODUCTION (Continued))

1.5   Target of Evaluation Description (Continued)

1.5.3   System Software (Continued)

Log Monitor Service

The Log Monitor 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 Log Monitor Service closes any active ES&S software application if the system detects the improper deactivation of the Windows Event Viewer.

1.5.4   System Operational Concept

The operational flow and low-level system interfaces for the ES&S Unity 3.4.0.0 Voting System are illustrated in Figures 1-1 and 1-2.
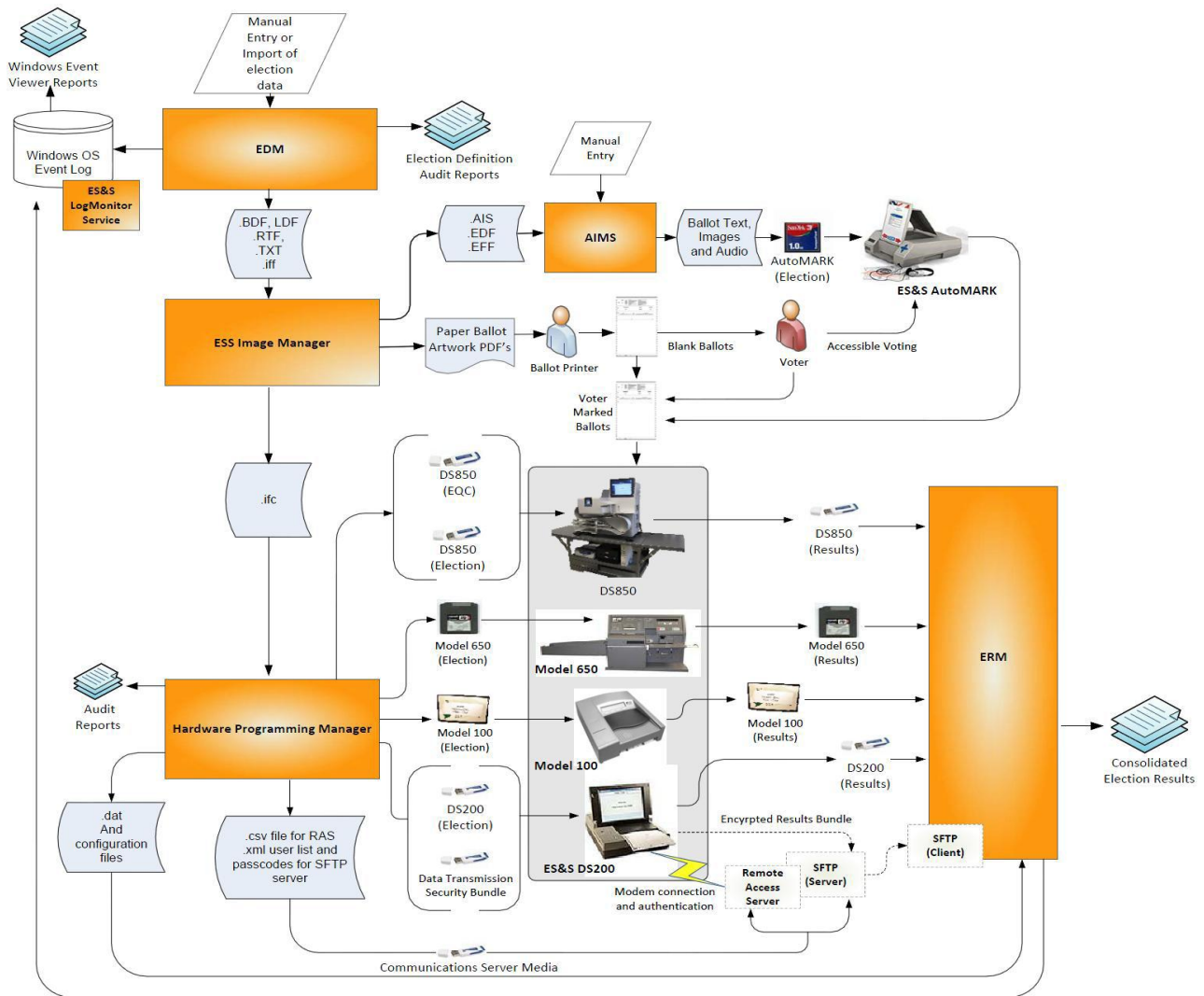
Figure 1-1 System Overview Diagram

1.0 INTRODUCTION (Continued))

1.5 Target of Evaluation Description (Continued)

1.5.4 System Operational Concept (Continued)
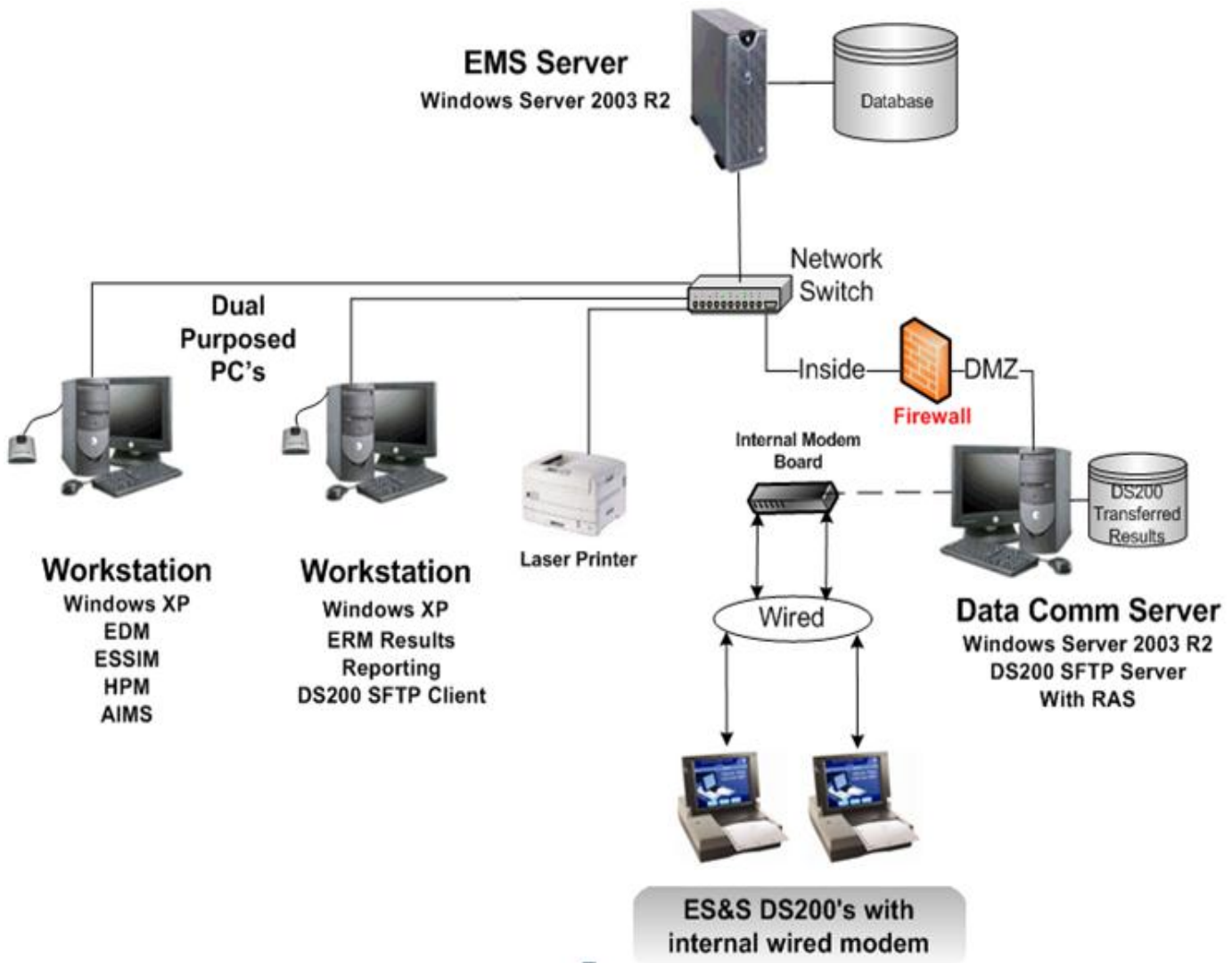
Figure 1-2 Secure File Transfer Configuration Guide

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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 Unity 3.4.0.0 System are compiled in Tables 1-4 and 1-5.

Table 1-4 Unity 3.4.0.0 System Limits

Limit Description (Maximum)	Limit Value	Limiting Factor
Precincts allowed in an election	2900(1639 if using paper ballot coded by precinct)	HPM/ERM (ballot sequence code)
Precinct included per poll (reporting limit)	1900	ERM
Candidate/counters per election	21000	ERM
Maximum candidates	9900	HPM
Contest allowed in an election	Depends on election(limited by 21,000 maximum counters)	ERM
Candidates/Counters allowed per precinct	1,000	ERM Import
Ballot styles allowed per election	5500 (1639 if using paper ballot coded by style)	HPM (ballot sequence code)
Contests allowed per ballot style	200 or number of positions on a ballot	HPM
Precincts allowed per ballot style	1500	HPM
Candidates (ballot choices) allowed per contest	175	HPM
Count for any precinct element	500,000 (65,550 from any tabulator media)	ERM report (ERM results Import)
Number of parties allowed	18	HPM
'Vote for' per contest	90	HPM

Table 1-5 Unity 3.4.0.0 Ballot Target Limits

Ballot Size (ovals per inch Left or Right)	Positions per Column x Row
8½ x 11" (4 ovals per inch)	36 rows x 3 columns = 108/side
8 ½ x 14" (3 ovals per inch)	36 rows x 3 columns = 108/side
8 ½ x 14" (4 ovals per inch)	48 rows x 3 columns = 144/side
8 ½ x 17" (3 ovals per inch)	41 rows x 3 columns = 123/side
8 ½ x 17" (3 ovals per inch)	45 rows x 3 columns = 135/side
8 ½ x 17" (4 ovals per inch)	60 rows x 3 columns = 180/side
8 ½ x 19" (3 ovals per inch)	51 rows x 3 columns = 153/side
8 ½ x 19" (4 ovals per inch)	68 rows x 3 columns = 204/side

1.0   INTRODUCTION (Continued))

1.5   Target of Evaluation Description (Continued)

1.5.6   Supported Languages

The following languages have been stated by ES&S to be supported by the Unity 3.4.0.0 System:

- English
- Spanish

1.5.7   Supported Functionality

The Unity 3.4.0.0 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
- Recall Issue with Options
- Provisional or Challenged Ballots
- Vote for N of M
- Audio Ballot

The Unity 3.4.0.0 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

ES&S began the test campaign for the Unity 3.2.1.0 (a predecessor to the Unity 3.4.0.0 System) at iBeta Quality Assurance. iBeta performed an initial baseline high-level TDP review, source code review for AutoMark, AIMS, DS200, HPM, ERM and COTS source verification. Wyle was provided a summary report from iBeta (iBeta Report Number (V) 2010-17SEP-001(A)) detailing what was performed and the discrepancies discovered during testing. Wyle then tested the system as documented in Wyle Test Report No. T58200.01-01, Rev. B.

Wyle will reutilize the hardware testing only from the approved test campaigns listed in Table 2-1.

Table 2-1 Unity 3.2.00 Approved Test Campaign

Component	Hardware Version	Reviewed in Test Report
DS200	1.2	3.2.0.0 (iBeta Test Report)
DS850	1.0	Unity 5.0.0.0 (iBeta/Criterion Test Report

The DS200 firmware in this campaign contains the 3200 Rev 3 code as its baseline. ES&S then modified the code to include landline modeming. These updates and all changes to DS200 firmware in Unity 3.4.0.0 were reviewed by Wyle. All testing on the DS200 was completed in prior programs (which included Unity 3.2.0.0 and Unity 3.2.0.0 Rev 3) except for the modifications to include landline modeming which will be tested in this test campaign.

Wyle will reutilize the components in Tables 2-2 and 2-3 from previously-certified systems. These systems have not been modified or changed since Unity 3.2.1.0 approved test campaign. These reports can be found on the EAC website at http://www.eac.gov/testing_and certification/certified_voting systems.aspx.

Table 2-2 Hardware Table

Component	Hardware Version	*Reviewed in Test Report*	Firmware Version	Reviewed in Test Report
Model 100	1.3	*3.2.1.0 (iBeta Test Report)*	5.4.4.5	3.2.1.0 (Wyle Test Report)
Model 650	1.1, 1.2	*3.2.1.0 (iBeta Test Report)*	2.2.2.0	3.2.1.0 (iBeta Test Report)
AutoMARK	1.0, 1.1, 1.3	*3.2.1.0 (iBeta Test Report)*	1.3.2907	3.2.1.0 (iBeta Test Report)

Table 2-3 Software Table

Component	Version	Reviewed in Test Report
Audit Manager (AM)	7.5.2.0	3.2.1.0 (iBeta Test Report)
Election Data Manager (EDM)	7.8.1.0	3.2.1.0 (iBeta Test Report)
ES&S Ballot Image Manager (ESSIM)	7.7.1.0	3.2.1.0 (iBeta Test Report)
Log Monitor Service	1.0.0.0	3.2.1.0 (iBeta Test Report)
AIMS	1.3.257	3.2.1.0 (iBeta Test Report)
VAT Previewer	1.3.2907	3.2.1.0 (iBeta Test Report)

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

2.0 PRE-CERTIFICATION TESTING AND ISSUES (Continued)

2.1 Evaluation of Prior VSTL Testing (Continued)

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. Wyle is accepting the stated tests based on a review of the test reports. Wyle will be performing all other testing on the DS850 cited in Section 4.4 of this document.

2.2 Known Field Issues

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

Two technical advisories have been issues by the EAC concerning known field issue of the DS200, each of which is summarized below:

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.

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.

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

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3.0 MATERIALS REQUIRED FOR TESTING

The materials required for certification testing of the ES&S Unity 3.4.0.0, which include software, hardware, test materials, and deliverable materials were shipped directly to Wyle by ES&S. Some of the equipment to be used during this test effort is the same equipment used during other certification campaigns performed by Wyle.

3.1 Software

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 Unity 3.4.0.0 System software and firmware submitted for review is identified in Appendix C, Table 3-1, Unity 3.4.0.0 System Software and Firmware. Wyle will only be reviewing and building the source code pertaining to the DS200, DS850, HPM, and ERM. The other components for EMS will be retrieved from the "Trusted Builds" archive at Wyle. Wyle will have a SHA1 hash made of the resulting software files or disc images.

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 and communications equipment, and any required test instrumentation.

Every effort is made to verify that equipment purported to be COTS, is in fact COTS, as defined by the VVSG, and 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. An external and internal physical analysis is also performed to the best of Wyle's abilities when the equipment is easily accessible without the possibility of damage. Hard drives, RAM memory, and other components are examined to verify that the components match the information found on the COTS equipment manufacturers' websites.

The equipment that the manufacturer submitted for testing is listed in Table 3-1. 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.

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3.0   MATERIALS REQUIRED FOR TESTING (Continued)

3.2   Equipment (Continued)

Table 3-1 Unity 3.4.0.0 Voting System Equipment Description

Equipment	Description	Serial Numbers
Model 100 • Hardware v. 1.3 • Firmware v. 5.4.4.5	A precinct-based, voter-activated paper ballot tabulator that uses a proprietary recognition engine to detect completed ballot targets.	205071
DS200 • Hardware v. 1.2 • Firmware v. 1.6.0.0	A digital scan paper ballot tabulator designed for use at the polling place level.	ES0108340178, ES0107380927, DS0110340837
Model 650 • Hardware v. 1.1 and 1.2 • Firmware v. 2.2.2.0	A high-speed, optical scan central ballot counter. During scanning, the Model 650 prints a continuous audit log to a dedicated audit log printer and can print results directly from the scanner to a second connected printer.	2406 8013
AutoMARK A100 • Hardware v. 1.0 • Firmware v. 1.3.2907	ADA Ballot Marking Device	AM0105490825
AutoMARK A200 • Hardware v.1.1, and 1.3 • Firmware v. 1.3.2907	ADA Ballot Marking Device	AM0208470644
DS850 • Hardware v. 1.0 • Firmware v. 2.2.0.0	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
Ballot Box Hardware v. 1.2 & 1.3	Plastic Ballot Box	E076, E089, E099
Ballot Box Hardware v. 1.0, 1.1, & 1.2	Metal Box with/without Diverter	E015, E017
Server PC	Dell OptiPlex GX260	7DOWL21
Server PC	Dell Precision T3500	15TPMN1
Client PC	Dell OptiPlex 760	2HF3CK1
Router/Firewall	Cisco ASA 5505	JMX152741AT
Modem Board	Equinox 8-port	VW10648
Modem Board	Digi	V70957956
Modem Board	Perle	6602983-10
Ballot on Demand Printer	OKI C9650	AF85027113A0
Report Printer	HP LaserJet 4050N	USQX074394
Headphones	Avid FV 60	HP-57936-1- 9,

3.0   MATERIALS REQUIRED FOR TESTING (Continued)

3.2   Equipment (Continued)

Table 3-2 Unity 3.4.0.0 Voting System Build Machine Description
(Equipment use: software witness and trusted builds)

Description of Equipment	Serial Number	Operating System
Dell OptiPlex 760	6DCKJG1	Windows XP SP3 or Vista
Dell Keyboard – Model L100	CN0RH659735716B402JS	N/A
Dell Mouse – Model XN966	HS847130DLE	N/A
ACER Monitor – Model AL1716 P/N: ET 1716B.012	ETL460C005609012DCPY11	N/A
Dell Precision T3500	15TNMN1	Windows 7
Dell Keyboard – Model L100	CN0RH65965890660029T	N/A
Dell Mouse – Model DHY933	F0N002Y1	N/A
Dell OptiPlex GX110	20PW10B	QNX 4.22A
CPU Intel inside Xenon DELL	Dell 0T7570	Linux 6.2.5
Logitec keyboard (white) - Y-ST39	BTD40203069	---
Microsoft Intellimouse 1.3A PS/2 compatible	63618-OEM-3189502-1	---
Corsair Orbit PC	1112719 (D72500343200710)	---
WhiteSanport 17" Monitor model: H996 BBM	GK0M03C317000657	---
Logitec keyboard (white) - Y-SG13	MCT02201651	---
Microsoft Intellimouse 1.2A PS/2 compatible	63618-OEM-4593581-6	---
Acer LCD Monitor AL1716 P/N: ET 1716B.012	ETL 480C00580900290PY11	---
CPU Intel inside Xenon DELL	Dell 0T7570	Linux
Dell Monitor	8176324	N/A
Keyboard	CN-OW7658-37172-584-06MV	None
Mouse	HCD45048365	None
Dell PC Monitor	500120	None
Dell Precision T3500	15TNMN1	Linux

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3.0 MATERIALS REQUIRED FOR TESTING (Continued)

3.3 Test Support Materials

This subsection lists 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 following test materials are required to support the Unity 3.4.0.0 System certification testing.

Table 3-3 Unity 3.4.0.0 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
	50	A. Rifkin	RIFSI
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	---	---
Headphone Covers	30	---	---
Paddles (yes/no)	3	---	---
Transport Media (USB Flash Drives)	Delkin	512 MB 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
	SanDisk	2.0 GB Capacity	Wyle-assigned numbers: TM-XXX
Compact Flash	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
PCMCIA	Vikant	512 KB Capacity	Wyle-assigned numbers: PCMCIA-XXX

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3.0   MATERIALS REQUIRED FOR TESTING (Continued)

3.4   Deliverable Materials

The materials listed in Table 3-4 are to be delivered as part of the Unity 3.4.0.0 System to the users.

Table 3-4 Deliverable Materials for Unity 3.4.0.0 Testing Purposes

Deliverable Material	Version	Description
AM	7.5.2.0	EMS
EDM	7.8.1.0	EMS
ESSIM	7.7.1.0	EMS
HPM	5.8.0.0	EMS
ERM	7.8.0.0	EMS
Log Monitor Service	1.0.0.0	EMS
AIMS	1.3.257	EMS
VAT Previewer	1.3.2907	EMS
Model 100	Firmware 5.4.4.5; Hardware 1.3	Optical scan precinct scanner
DS200	Firmware 1.6.0.0; Hardware 1.2	Precinct ballot scanner
AutoMARK	Firmware 1.3.2907; Hardware 1.0, 1.1 and 1.3	Voter Assist Terminal
Model 650	Firmware 2.2.2.0; Hardware 1.1 and 1.2	Central ballot scanner
DS850	Firmware 2.2.0.0; Hardware 1.0	Central ballot scanner
Headphones	Avid FV 60	Stereo headphones
Voting System Overview Unity 3.4.0.0	7.0	TDP Document
ES&S DS200 System Operations Procedures	Firmware 1.6.0.0 HV 1.2.1	TDP Document
ES&S DS850 System Operations Procedures	8.0	TDP Document
ES&S AM System Operations Procedures	7.5.2.0	TDP Document
ES&S EDM System Operations Procedures	7.8.1.0	TDP Document
ES&S ERM System Operations Procedures	7.8.0.0	TDP Document
ES&S ESSIM System Operations Procedures	7.7.1.0	TDP Document
ES&S HPM System Operations Procedures	5.8.0.0	TDP Document
ES&S Log Monitor System Operations Procedures	1.0.0.0	TDP Document
ES&S M100 System Operations Procedures	Firmware 5.4.4.5; Hardware 1.3	TDP Document
ES&S M650 System Operations Procedures	Firmware 2.2.2.0; Hardware 1.1 and 1.2	TDP Document
Voting System Security Specification Unity 3.4.0.0	3.4.0.0	TDP Document
Jurisdiction Security Practices Template	1.0.0.1	TDP Document
Hardening the EMS PC Guide	3.0	TDP Document

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4.0   TEST SPECIFICATIONS

The certification testing of the Unity 3.4.0.0 System is to the configuration submitted in the EAC application ESS1103.

Wyle qualified personnel involved with certification testing performed on the manufacturer's voting system will follow Wyle's procedures for testing. Results are used to determine if the system has met and passed the specific test cases associated with those procedures based on EAC 2005 VVSG and EAC Testing and Certification Program Manual.

This test campaign is based on the previous test campaign conducted for the ES&S Unity 3.2.1.0 System, the results of which are documented in Wyle Report No. T58200.01-01, Rev. B. During this test campaign, the ES&S Unity 3.2.1.0 System was tested to, and found to be in conformance with, the United States Federal Election Commission (FEC) 2002 Voting System Standards (VSS) and all applicable EAC 2005 Voluntary Voting Systems Guidelines (VVSG). Per section 4.4.2.3 of the EAC Testing and Certification Program Manual, all testing on the modifications to the system will be tested to the 2005 VVSG; however, pending successful completion of this test campaign, the system will only be granted a 2002 VSS certification since the system, as a whole, will not be tested to the 2005 VVSG.

The following list contains EAC Request for Interpretations (RFI) and Notice of Clarifications (NOC) that will be incorporated in the test campaign:

Request for Interpretations

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

4.0   TEST SPECIFICATIONS (Continued)

Request for Interpretations (Continued)

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

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 2012-01 – 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 08-002 - 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

4.0   TEST SPECIFICATIONS (Continued)

4.1   Requirements (Strategy of Evaluation)

The strategy for evaluating ES&S Unity 3.4.0.0 will be based on the 2 modifications to the system.

1.   To add a Landline Modem solution to the DS200. This function enables jurisdictions to modem results from a precinct to a central location. In addition to modeming, the Hardware Programming Manager (HPM) and Election Reporting Manager (ERM) applications were modified to support the addition of modem functionality.

2.   To add the DS850, a high-speed digital scan central counter to the Unity 3.4.0.0 System. The DS850 provides jurisdictions an option for a high-speed central counter. In addition to the DS850, the Hardware Programming Manager (HPM) and Election Reporting Manager (ERM) applications were modified to support the addition to the DS850

The first modification is to test the additional hardware and EMS modifications to support Landline Modems on the DS200. The second modification is to test all software modifications and peripheral devices to support the inclusion of the DS850 to the Unity 3.4.0.0 System.

To evaluate the system test requirements, each section of the EAC 2005 VVSG will 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 will be tested during the FCA utilizing the "Wyle Baseline Test Cases" along with test cases specially designed for the ES&S Unity 3.4.0.0 System. The data input during these tests will be based on the predefined election definitions submitted as part of the Test Plan Package.

- **Section 3: Usability and Accessibility** – The requirements in this section will not be tested during this test campaign because the only new equipment is the DS850, which is a central scan component and the Usability and Accessibility requirements are for in-precinct components.

- **Section 4: Hardware Requirements** – The requirements in this section will be evaluated utilizing data obtained during prior VSTL test campaigns.

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

- **Section 6: Telecommunication** – The requirements in this section will be tested utilizing the Wyle Telecommunications Test Cases along with test cases specially designed for the Unity 3.4.0.0 system.

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

- **Section 8: Quality Assurance (QA) Requirements** – The requirements in this section will be tested throughout the test campaign via various methods. TDP review will 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 will be checked to ensure that proper QA documentation has been completed. All equipment received for initial testing and follow up testing will 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.

4.0   TEST SPECIFICATIONS (Continued)

4.1   Requirements (Strategy of Evaluation) (Continued)

- **Section 9: Configuration Management (CM) Requirements** – The requirements in this section will be tested throughout the test campaign. TDP review will 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 will 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

Wyle personnel shall maintain a test log of the procedure(s) employed. This log identifies the system and equipment by model and serial number. 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.)

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 the test include the following:

- WoP 1 Operations Status Checks

- WoP 2 Receipt Inspection

- WoP 3 Technical Data Package Review (limited)

- WoP 4 Test Plan Preparation *(This document)*

- WoP 5a-d Source Code Review

- WoP 6 Security

- WoP 7 Trusted Build

- Wop 21 Environmental OperatingAccuracyReliability (Temp/Power)

- 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 40 System Level Stress Test

- WoP 41 Logic & Accuracy

4.0   TEST SPECIFICATIONS (Continued)

4.2   Hardware Configuration and Design

The ES&S Unity 3.4.0.0 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 ES&S Unity 3.4.0.0 System consists of an election management system (an application suite consisting of AM, AIMS, EDM, ESSIM, HPM, ERM, Log Monitor Service, and VAT Previewer); the M100 and the DS200 are voting devices that scan, validate and tabulate voter ballots at the precinct level; either the AutoMARK Model A100 or A200 are voter assisted terminal to facilitate special needs voters; the DS850 and M650, both are high-speed scanners to process large batches of ballots at a central location.

In the ES&S Unity 3.4.0.0 System all EMS functions are handled by proprietary software running 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.

4.3   Software System Functions

The strategy for evaluating ES&S Unity 3.4.0.0 will be based on the two modifications to the system.

1.   Test the new components and software changes required for a Landline Modem which includes the DS200 with modem, RAS Server, and Firewall. Wyle will also verify that all components interface correctly with the EMS.

2.   Test the functionally of the DS850 and the interface with the previously certified EMS. The DS850 consists of three components packaged together to function as the firmware: UI (C++), MCP (C++), CoNG (C++)

4.4   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: Component, Integration, System, and Acceptance. Wyle will be evaluating the ES&S Unity 3.4.0.0 to all four levels.

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4.0   TEST SPECIFICATIONS (Continued)

4.4   Test Case Design (Continued)

4.4.1   Hardware Qualitative Examination Design

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

- 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 validated that the iBeta testing was performed under the guidelines of EAC 2005 VVSG. Comparative analyses of the changes in the hardware implemented since test performance were then evaluated. In addition to the analysis Wyle performed the following tests on the DS850: Temp Power, Maintainability, and Electrical Supply as part of a state campaign.

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.

Table 4-1 Hardware Test Examination Results

Test/EAC 2005 VVSG Section	Procedure/Description	DS850
Electromagnetic Radiation/4.1.2.9	FCC Part 15 Class B for both radiated and conducted emissions	Accept
Low Temperature/4.1.2.14	MIL-STD-810D minimum temperature shall be -4 degrees F	N/A
Vibration/4.1.2.14	MIL-STD-810D, Meth0d 514.3 physical shock and vibration during handling and transport	N/A
Lightning Surge/4.1.2.7	IEC 61000-4-5 (1995-02)	Accept
High Temperature/4.1.2.14	MIL-STD-810D, Method 501.2 maximum temperature shall be 140 degrees F	N/A
Bench Handling	MIL-STD-810D, Method 516.3 Procedure VI six 4" drops on each edge totaling 24 drops	N/A
Electrical Fast Transient/4.1.2.6	IEC 61000-4-4	Accept
Humidity Test/4.1.2.14	MIL-STD-810D, Method 501.2 ten 24 hour humidity cycles	N/A
Electrostatic Disruption/4.1.2.8	IEC 61000-4-2 (1995-01) 15kV air discharge and 8kV contact discharge	Accept
Electromagnetic Susceptibility/4.1.2.10	IEC 61000-4-3 electromagnetic field of 10V/m modulated by a 1kHZ, 80% AM modulation at 80MHz to 1000MHz frequency	Accept

4.0 TEST SPECIFICATIONS (Continued)

4.4 Test Case Design (Continued)

4.4.1 Hardware Qualitative Examination Design (Continued)

Table 4-1 Hardware Test Examination Results (Continued)

Test/EAC 2005 VVSG Section	Procedure/Description	DS850
Conducted RF Immunity/4.1.2.11	IEC 61000-4-6 (1996-04) conducted radio frequency energy	Accept
Magnetic Fields Immunity/4.1.2.12	IEC 61000-4-8 (1993-06) AC magnetic fields of 30 A/m at 60Hz	Accept
Electrical Power Disturbance/4.1.2.5	IEC 61000-4-11 (1994-06) power surges and dips	Accept
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	11/23/11 Wyle Labs
Safety/4.3.8	UL 60950-1 product safety review	Accept
Maintainability/4.3.4	The ease with which preventive maintenance actions can be performed	11/8/11 Wyle Labs
Electrical Supply/4.1.2.4	Meets voltage and power requirements of EAC 2005 VVSG Vol. 1 Section 4.1.2.4	11/8/11 Wyle Labs

4.4.1.1 Mapping of Requirements to Specific Interfaces

Please refer to the EAC online program requirements matrix.

4.4.2 Hardware Environmental Test Case Design

Hardware testing on the components of the ES&S Unity 3.4.0.0 System has been performed in previous test campaigns. Based on a review of the data, Wyle has accepted the results of the previous hardware testing for all required hardware tests.

4.4.3 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, Security Testing and TPD 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 ES&S Unity 3.4.0.0 System during the software testing portion of testing will be "equivalence partitioning" and "boundary value testing".

- "Equivalence Partitioning" is a technique to select a value within a given range and at least one value outside the given range as applied to a software function. This technique will be used for numeric ranges as well as non-numeric ranges throughout FCA to test for normal and abnormal conditions.

4.0   TEST SPECIFICATIONS (Continued)

4.4   Test Case Design (Continued)

4.4.3   Software Module Test Case Design and Data (Continued)

- "Boundary Value Testing" is a techniques used to identify minimum and maximum boundary errors as applied to software functions. This technique will be used for numeric ranges as well as non-numeric ranges throughout FCA to test for normal and abnormal conditions.

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 results would be determined to not be repeatable and the test would continue. 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. 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.

4.4.4   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 ES&S Unity 3.4.0.0 System will be a bottom-up approach where the lower level components will 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 ES&S Unity 3.4.0.0 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, M100, M650, 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, M100, M650, 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" will be used during the FCA with a single pass through each component using only valid data. This pass will 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.

4.0 TEST SPECIFICATIONS (Continued)

4.4 Test Case Design (Continued)

4.4.4 Software Functional Test Case Design and Data (Continued)

If an error occurs between data interfaces or in the process flow, an engineering analysis will 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 will be made whether regression testing will be sufficient or a complete re-test is necessary.

4.4.5 System Level Test Case Design

During System Level Testing, Wyle will test the ability of proprietary software, hardware, and peripherals in addition to the COTS software, hardware, and peripherals as a complete system in a configuration of the systems for intended use. The ES&S Unity 3.4.0.0 System is intended to support both large and small jurisdictions. Wyle's approach for the ES&S Unity 3.4.0.0 System will be to execute System Level Testing with a variety of elections that include various combinations of jurisdictions, parties and ballot styles.

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 ES&S Unity 3.4.0.0 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 will be combined to ensure all requirements that are supported by the ES&S Unity 3.4.0.0 System in the EAC 2005 VVSG have been tested. All requirements will be checked against the test data to ensure the EAC 2005 VVSG requirements are met. Items not supported by the ES&S Unity 3.4.0.0 System will be documented. Any issues documented during testing will be resolved or annotated in the test report.

Wyle will test every EAC 2005 VVSG requirement supported by the ES&S Unity 3.4.0.0 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.

4.0   TEST SPECIFICATIONS (Continued)

4.5   Security Functions

The strategy for evaluating ES&S Unity 3.4.0.0 will be based on the 2 modifications to the system. The level of threat monitoring on the integrated system will be based on verification of the documents provided by ES&S.

Wyle personnel will evaluate the effectiveness of the DS200 modem capabilities of the Unity 3.4.0.0 System in detecting, preventing, logging, and recovering from any security risks identified by simulating attacks on the system. To accomplish this, Wyle will utilize internal operating procedures (WoP 6 series) and designed special test cases to evaluate the modem to the security requirements set forth in the EAC 2005 VVSG. These procedures have been specifically tailored to assess the modem to the applicable requirements. Wyle will attempt to defeat the access controls and physical security measures documented in the ES&S technical data package. Wyle personnel shall review ES&S documentation on monitoring and responding to threats on networks to ensure that ample information is provided to meet the VVSG requirements. A threat matrix will be created to determine the risks and vulnerabilities.

Wyle personnel will evaluate the effectiveness of the DS850 component and changes to the EMS of the Unity 3.4.0.0 System in detecting, preventing, logging, 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 DS850 and EMS to the security requirements set forth in the EAC 2005 VVSG. These procedures have been specifically tailored to assess the DS850 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 will be created to determine the risks and vulnerabilities.

Wyle will utilize a combination of functional testing, system integration testing and source code review to evaluate the DS850 and EMS. The following areas are not applicable to the DS850 and are not included in the scope of security testing:

- Use of Public Networks

- Wireless Communication

In addition to security testing by Wyle personnel, a qualified security expert will further test for any vulnerability. Wyle will report all findings to ES&S for comment and/or resolution. A report containing all findings will be issued to the EAC as an addendum to the final test report.

4.6   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. The focus of this review will be on any modifications made to the TDP documents due to the changes in firmware from 3.2.1.0 and 3.4.0.0.

During the TDP review process, each document will be reviewed for completeness, clarity, and correctness as well as continuity between the TDP documents. The findings will be communicated to ES&S for resolution on a regular basis to keep current. All revised documents received will be checked for corrections. The TDP will be continuously reviewed during the entire testing process as these documents will 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 will be issued listing all non-compliance on an individual basis. A listing of all documents contained in the ES&S Unity 3.4.0.0 System TDP is provided in Table 4-2.

4.0   TEST SPECIFICATIONS (Continued)

4.6   TDP Evaluation (Continued)

Table 4-2 Unity 3.4.0.0 TDP Documents

Unity 3.4.0.0 TDP Documents	Version	Doc #	Document Code
Voting System Overview	7.0	01-01	U3400R1_OVR00
System Functionality Description			
System Functionality Description – Audit Manager	1.0	02-01	U3400R1_SFD00_AM
System Functionality Description – Election Data Manager	1.0	02-02	U3400R1_SFD00_EDM
System Functionality Description – ES&S Ballot Image Manager	1.0	02-03	U3400R1_SFD00_ESSIM
System Functionality Description – Hardware Programming Manager	1.0	02-04	U3400R1_SFD00_HPM
System Functionality Description – Election Reporting Manager	1.0	02-05	U3400R1_SFD00_ERM
System Functionality Description – DS200	4.0	02-06	U3400R1_SFD00_DS200
System Functionality Description – Model 650	1.0	02-07	U3400R1_SFD00_M650
System Functionality Description – Log Monitor Service	1.0	02-08	U3400R1_SFD00_Log Monitor Service
System Functionality Description – Model 100	3.0	02-09	U3400R1_SFD00_M100
System Functionality Description – DS850	1.0	02-10	U3400R1_SFD00_DS850
System Hardware Specification			
System Hardware Specification – DS200	1.0	03-01	U3400R1_SHS00_DS200
System Hardware Specification – Model 650	1.0	03-02	U3400R1_SHS00_M650
System Hardware Specification – Model 100	1.0	03-03	U3400R1_SHS00_M100
System Hardware Specification – DS850	1.0	03-04	U3400R1_SHS00_DS850

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4.0   TEST SPECIFICATIONS (Continued)

4.6   TDP Evaluation (Continued)

Table 4-2 Unity 3.4.0.0 TDP Documents (Continued)

Unity 3.4.0.0 TDP Documents	Version	Doc #	Document Code
Software Design and Specification			
Software Design and Specification – Audit Manager	1.0	04-01	U3400R1_SDS00_AM
Software Design and Specification – Election Data Manager	1.0	04-02	U3400R1_SDS00_EDM
Software Design and Specification – ES&S Ballot Image Manager	1.0	04-03	U3400R1_SDS00_ESSIM
Software Design and Specification – Hardware Programming Manager	2.0	04-04	U3400R1_SDS00_HPM
Software Design and Specification – Election Reporting Manager	2.0	04-05	U3400R1_SDS00_ERM
Software Design and Specification – DS200	3.0	04-06	U3400R1_SDS00_DS200
Software Design and Specification – Model 650	1.0	04-07	U3400R1_SDS00_M650
Software Design and Specification – Model 100	1.0	04-08	U3400R1_SDS00_M100
Software Design and Specification – Log Monitor Service	1.0	04-09	U3400R1_SDS00_LogMonitor
Software Design and Specification – DS850	2.0	04-10	U3400R1_SDS00_DS850
SDS Appendix	---	04-11	File Specifications: BDF, BSC, EDMXML, EL80, ESSCRYPT, ESSML, IFC, LDF, M650 OUTPUT
System Security Specification			
System Security Specification	6.30.2011	05-01	U3400R1_SSS00
SS Appendix – Jurisdiction Security Procedures Template	1.0.0.1	05-02	U3400R1_SSS01_JSP Template
SSS Appendix – Validation Guide – DS200	1.0	05-02	U3400R1_SSS02.02_DS200 Validation Guide
SSS Appendix – Validation Guide – Model 650	1.0	05-02	U3400R1_SSS02.03_Model 650 Validation Guide
SSS Appendix – Validation Guide – AutoMARK	1.0	05-02	U3400R1_SSS02.04_AutoMARK Validation Guide
SSS Appendix – Validation Guide – Unity Workstation	1.0	05-02	U3400R1_SSS02.05_Unity Workstation Validation Guide
SSS Appendix – System Hardening Procedures	3.0	05-02	U3400R1_SSS08_Hardening Procedures

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4.0 TEST SPECIFICATIONS (Continued)

4.6 TDP Evaluation (Continued)

Table 4-2 Unity 3.4.0.0 TDP Documents (Continued)

System Test/Verification Specification			
Unity 3.4.0.0 System Test Plan	1.0	06-01	U3400R1_STP00
System Test Cases – Audit Manager	3.13.2009	06-02	U3400R1_TC00_AM
System Test Cases – Election Data Manager	5.4.2011	06-03	U3400R1_TC00_EDM
System Test Cases – ES&S Ballot Image Manager	6.21.2011	06-04	U3400R1_TC00_ESSIM
System Test Cases – Hardware Programming Manager	9.19.2011	06-05	U3400R1_TC00_HPM
System Test/Verification Specification (continued)			
System Test Cases – Election Reporting Manager	9.19.2011	06-06	U3400R1_TC00_ERM
System Test Cases – DS200	10.27.2011	06-07	U3400R1_TC00_DS200
System Test Cases – Model 650	10.17.2011	06-08	U3400R1_TC00_M650
System Test Cases – Model 100	6.4.2010	06-09	U3400R1_TC00_M100
System Test Cases – DS850	9.15.2011	06-10	U3400R1_TC00_DS850
Systems Operations Procedures			
System Operations Procedures – Audit Manager	5.31.2011	07-01	U3400R1_SOP00_AM
System Operations Procedures – Election Data Manager	5.31.2011	07-02	U3400R1_SOP00_EDM
System Operations Procedures – ES&S Ballot Image Manager	5.31.2011	07-03	U3400R1_SOP00_ESSIM
System Operations Procedures – Hardware Programming Manager	6.30.2011	07-04	U3400R1_SOP00_HPM
System Operations Procedures – Election Reporting Manager	6.30.2011	07-05	U3400R1_SOP00_ERM
System Operations Procedures – DS200	12.12.2011	07-06	U3400R1_SOP00_DS200
System Operations Procedures – Model 650	5.31.2011	07-07	U3400R1_SOP00_M650
SOP Appendix- Sample Deliverable Timeline	N/A	07-08	U3400R1_SOP01_Sample Deliverable Timeline
SOP Appendix- Adobe Install Reference	N/A	07-08	U3400R1_SOP02_Adobe Install Reference
SOP Appendix- Omni Drive USB	N/A	07-08	U3400R1_SOP00_LogMonitor
Systems Operations Procedures- Log Monitor Service	5.31.2011	07-09	U3400R1_SOP00_OmniDrive USB
Systems Operations Procedures- Model 100	5.31.2011	07-10	U3400R1_SOP00_M100
System Operations Procedures – DS850	8.0	07-11	U3400R1_SOP00_DS850

4.0   TEST SPECIFICATIONS (Continued)

4.6   TDP Evaluation (Continued)

Table 4-2 Unity 3.4.0.0 TDP Documents (Continued)

System Maintenance Manuals			
System Maintenance Manual – DS200	8.12.2011	08-01	U3400R1_SMM00_DS200
System Maintenance Manual – Model 650	5.31.2011	08-02	U3400R1_SMM00_M650
System Maintenance Manual – Model 100	5.31.2011	08-03	U3400R1_SMM00_M100
System Maintenance Manual – DS850	3.0	08-04	U3400R1_SMM00_DS850
Personnel Deployment			
Personnel Deployment and Training Recommendations	1.0	09-01	U3400R1_TRN00_ESSTraining Requirements
Training Manual – Election Data Manager	6.28.2011	09-02	U3400R1_TRN00_EDM_TrainingManual
Training Manual – ES&S Ballot Image Manager	6.22.2011	09-03	U3400R1_TRN00_ESSIM_Training Manual
Training Manual – Hardware Programming Manager	6.30.2011	09-04	U3400R1_TRN00_HPM_TrainingManual
Training Manual – Election Reporting Manager	6.30.2011	09-05	U3400R1_TRN00_ERM_ PreElection
Training Checklists	---	09-06	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 - Manufacturing	1.0	11-01	U3400R1_QAP00_MNF
Quality Assurance Program – Software and Firmware	1.0	11-02	U3400R1_QAP00_SWF
QAP Program Appendices	---	11-03	Multiple Documents
System Change Notes			
Unity 3.4.0.0 System Change Notes	29.0	---	---
Other VSTL Reports			
ES&S Ballot Production Guide	10.31.2011	13-01	U3400R1_ORPT02_BallotProduction Guide

4.7   Source Code Review

The strategy for evaluating ES&S Unity 3.4.0.0 will be based on the two previously identified modifications to the system. All changes from Unity 3.2.1.0 (ESSUnity3210) will be reviewed to the EAC 2005 VVSG coding standards and the manufacturer-supplied coding standards.

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4.0 TEST SPECIFICATIONS (Continued)

4.7 Source Code Review (Continued)

The source code for the DS200 with modem component and the EMS components of the ES&S Unity 3.4.0.0 System will be reviewed to the EAC 2005 VVSG coding standards and the manufacturer-supplied coding standards. Specifically, a functional source code review will be performed to verify that the new software interface modules do not conflict with the existing software interface modules in HPM and ERM. The source code for the DS850 component and the EMS components of the ES&S Unity 3.4.0.0 System will be reviewed to the EAC 2005 VVSG coding standards and the manufacturer-supplied coding standards. Specifically, a functional source code review will be performed to verify that the new software interface modules do not conflict with the existing software interface modules in HPM and ERM.

This verification shall examine all functionality performed by the new modules; all functions performed by modified modules; functionality that is accomplished by using any interfaces to new modules or that shares inputs or outputs from new modules; all functionality related to vote tabulation and election results reporting; and all functionality related to audit trail maintenance. Wyle's senior level Project Engineer will then determine based upon the significance of any noted issues (individually or cumulatively) with existing software interfaces modules whether system integration testing with all components of the ES&S Unity 3.4.0.0 System may be required.

As the source code is received, a SHA1 hash value will be created for each source code file. The source code team will conduct a visual scan of each line of source code for an initial review and every line of modified source code for acceptance of 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. This is done to verify compliance of EAC 2005 VVSG coding standards or manufacturer -supplied coding standards.

All identified violations will be recorded by making notes of the standards violation along with the directory name, file name, and line number. A technical report of all identified violations will be sent to ES&S for resolution on a regular basis. All revised source code will be checked for corrections until the final issue is resolved. At the end of the Source Code review process, an Anomaly Report will be issued listing all non-compliance on an individual basis to the EAC and ES&S. The results will be included in the final test report.

A "Compliance Build" will 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 a manufacturer representative will not be required to be present or on-site for these builds. The next step in the source code review will be to create a "Trusted Build" from the approved source code.

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4.0   TEST SPECIFICATIONS (Continued)

4.7   Source Code Review (Continued)

Trusted Build Process

- 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 an EAC Approved Repository.

The "Trusted Build" for the ES&S Unity 3.4.0.0 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 will be built. The final step is installing the applications on the hardware.

4.8   QA and CM System Review

Both the ES&S QA Plan and CM Plan will 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 will be reviewed to determine if the ES&S QA Plan and the CM Plan are being followed. The results of the TDP review will be entered on a spreadsheet as previously described in Section 4.6 of this test plan. The Final Test Report will include the TDP review, including QA and CM compliance, all test results and any anomalies or issues.

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5.0   TEST DATA

5.1   Test Data Recording

All equipment involved in testing shall be identified in the Test Data Package. For hardware environmental and operational testing, the equipment will be listed on the Instrumentation Equipment Sheet for each test. The output test data will be recorded in an appropriate manner as to allow for data analysis. System logs will be analyzed during the test campaign to determine if any issues were recorded on the system that were not observed during the testing process.   Specific test plans will also be created to validate the System Logs record all transactions on the system in order to validate correct recordings or the absence of any transactions. Source code and TDP reviews will be compiled in output reports and submitted to ES&S for resolution.

Additionally, all test results, including functional test data, will 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 will 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 and performance against the ES&S-provided technical documentation for the Unity 3.4.0.0 System and the requirements set forth in the EAC 2005 VVSG.   The acceptable range for system performance and the expected results for each test case shall be derived from the Unity 3.4.0.0 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 manually 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 will be conducted at the Wyle Huntsville, AL facility unless otherwise annotated. The Hardware environmental non-operating (storage) and operating testing will 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 will 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 will 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

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6.0 TEST PROCEDURES AND CONDITIONS (Continued)

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 QA personnel. With Wyle QA personnel present, each test article will 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 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. All TDP and source code modules received will be inventoried and maintained by the Wyle Project Engineer assigned to testing.

For test setup, the system will 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 Unity 3.4.0.0 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 shall 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.

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. For telecommunications the test must exercise that the DS200 can transmit results accurately to Election Reporting Manager (ERM). The results from a variety of elections with different data and size will be used to test the telecommunications capabilities from the DS200 to the ERM. This will verify that the DS200 can transmit results accurately to the ERM. The results from the DS200 paper report and the USB Results for Export will be compared to the ERM results collected by transmission on a landline.

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6.0   TEST PROCEDURES AND CONDITIONS (Continued)

6.2   Test Set-Up (Continued)

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
- 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.

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6.0   TEST PROCEDURES AND CONDITIONS (Continued)

6.2   Test Set-Up (Continued)

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 will be an early voting election with at least one machine running all precincts. Voting options for overvoting and undervoting will 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.

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6.0 TEST PROCEDURES AND CONDITIONS (Continued)

6.2 Test Set-Up (Continued)

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: Yes
- 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 Chinese. 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: 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: 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 select 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: Yes
- Ballot Rotation: No
- Straight Party voting: No
- Cross-Party Endorsement: Yes
- 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: 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 will be an open primary election with one machine running for each precinct. Voting options for Over-voting, Under-voting and write-in voting will 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 closed 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 two 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: Yes
- 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 two languages including an Ideographic based language, support for common voting variations, and audio support for at least two 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 Chinese. 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.

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6.0 TEST PROCEDURES AND CONDITIONS (Continued)

6.3 Test Sequence

The components of the Unity 3.4.0.0 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

All of the hardware tests have previously been performed during prior VSTL test campaigns.

6.3.2 Software Test Description

The software tests include the following:

Source Code Compliance Review – 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.

Compliance Build of the Unity 3.4.0.0 System Software, Firmware, and Utilities– Before testing can begin a compliance build of all the applications will 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.

COTS Source Code Review – 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 confirm the specific version of software being used against the design specification to confirm 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 will 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 has not been modified.

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.

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6.0 TEST PROCEDURES AND CONDITIONS (Continued)

6.3 Test Sequence (Continued)

6.3.2 Software Test Description (Continued)

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 will be performed for completeness, clarity, and consistency.

Error Recovery Test – This will 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 restoration of 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 will be the utilized, which can be augmented by an automated analysis of the source code.

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.

Table 6-1 Unity 3.4.0.0 System Software Test Sequence

Test	Description	Procedure	Test Level	Specimen
Compliance Source Code Review (Pre-testing Activity)	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 augmented by an automated review	WHVS07.2 WOP5d WOP 6a	Component & Integration	Source Code
Trusted Build	Creation and installation of the final system software	WHVS07.6 WoP 7 WoP 7a	Component	System software

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 will be conducted to insure all applicable EAC 2005 VVSG requirements are met.

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.

Telecommunication Test – 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.

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.

Regression Testing - Regression Testing will be performed on all system components to verify all functional and firmware modifications made during the test campaign did not affect the system adversely.

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 in the TDP submitted. During testing, audit log entries will 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 will be performed to introduce such error conditions. The error conditions introduced will be based on the system limits specified within the vendors TDP documentation.

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6.0   TEST PROCEDURES AND CONDITIONS (Continued)

6.3   Test Sequence (Continued)

6.3.3   System Testing (Continued)

Table 6-2 Unity 3.4.0.0 System Testing Sequence

Test	Description	Procedure	Test Level	Specimen	Election Data	Re-Use from Previous VSTL Testing
Technical Data Package (TDP) Review	Documentation review for compliance, correctness, and completeness	WHVS07.1 WoP 3	Document	TDP package	---	N/A
Physical Configuration Audit	Audit hardware and software models and versions	WHVS07.3 WoP 25	Component & System	System hardware and software	---	N/A
Functional Configuration Audit	Functional testing to the system documentation and EAC 2005 VVSG requirements	WHVS07.4 WoP 26 WoP30a	DS850	DS850	Gen-01 Prim-01	11/15/11 Wyle Labs
Telecommunication	Test of telecommunication technology of the system for accuracy and correctness	WHVS07.6 WoP 31	Integration & System	System	Accuracy Election	N/A

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6.0   TEST PROCEDURES AND CONDITIONS (Continued)

6.3   Test Sequence (Continued)

6.3.3   System Testing (Continued)

Table 6-2 Unity 3.4.0.0 System Testing Sequence (Continued)

Test	Description	Procedure	Test Level	Specimen	Election Data	Re-Use from Previous VSTL Testing
Volume, Stress, & Reliability Test	Test to investigate the system's response to larger amounts of data than it is expecting.	WoP 40	DS200 DS850	DS200 DS850	Volume and Stress Election	3/21/12 1/16/12 Wyle Labs
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	DS200 (Modem) & DS850	DS200 (Modem) & DS850	Gen-01 Prim -01	2/17/12 Wyle Labs
Accuracy	Test of accuracy to ~1.6 million ballot positions per component	WHVS07.9 WoP 41	DS200& DS850	DS200& DS850	Accuracy Election	N/A
System Integration Test	Test of all system hardware, software and peripherals.	WoP 30	System	System	Gen-01-03 Prim-01-03	N/A

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7.0   TEST OPERATIONS PROCEDURES

7.1   Proprietary Data

All proprietary data that is marked will 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

TEST PROCEDURE DESCRIPTION

Test Procedure	Test Procedure Description
WoP 1 Operational Status Checks	When all tests, inspections, repairs, and adjustments have been completed, normal operation shall be verified by conducting an operational status check. During this process, all equipment shall be operated in a manner and under environmental conditions that simulate election use to verify the functional status of the system. Prior to the conduct of each of the environmental hardware non-operating tests, a supplemental test shall be made to determine that the operational state of the equipment is within acceptable performance limits.
WoP 2 Receipt Inspection	Documenting the receiving inspection of equipment.
WoP 3 Technical Data Package Review	Track all documentation changes through the technical data package.
WoP 4 Test Plan Preparation – ES&S Unity 3.4.0.0 (*This Document*)	Approval of this document shall fulfill the requirements of this procedure.
WoP 5 a-d Source Code Review	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 Volume I, Section 5.
WoP 6 a-d Security	The objectives of the security standards for voting systems are: • To protect critical elements of the voting system • To establish and maintain controls to minimize errors • To protect the system from intentional manipulation, fraud and malicious mischief • To identify fraudulent or erroneous changes to the voting system • To protect secrecy in the voting process Maintenance of a permanent record of original audit data that cannot be modified or overridden but may be augmented by designated authorized officials in order to adjust for errors or omissions (e.g., during the canvassing process).
WoP 7 a-c Trusted Build	To ensure that the system version tested is the correct version, Wyle Laboratories personnel will witness the build of the executable version of the system immediately prior to or as part of, the physical configuration audit. (Additionally, should components of the system be modified or replaced during the testing process, the accredited test lab shall require the manufacturer to conduct a new "build" of the system to ensure that the certified executable release of the system is built from tested components)
WoP 25 Physical Configuration Audit	The physical configuration audit will be limited to base lining the system to ensure all software and hardware used in testing is the software and hardware that was certified.
WoP 28 Availability	The availability of a voting system is defined as the probability that the equipment (and supporting software) needed to perform designated voting functions will respond to operational commands and accomplish the function.
WoP 30 System Integration Test	Test to ensure the DS200 firmware version 1.6.0.0 and the EMS Unity

Test Procedure	Test Procedure Description
	3.4.0.0 components interface reliably and accurately.
WoP 31 Telecommunications	Telecommunications (telecom) components of the Voting System shall be tested for Durability, Reliability, Maintainability, and Availability as part of the complete Voting System under test. The Accuracy, Integrity, and Confirmation of the following types of transmitted data, where applicable, shall be verified: Voter Authentication, Ballot Definition, Vote Transmission, Vote Count, List of Voters, and additional data transmissions.
WoP 34 Test Report	National Certification Test Report
WoP 41 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.

APPENDIX B

ES&S PROJECT SCHEDULE

To be provided separately at a later date

ID		Task Name	Duration	Start	Finish	Predecessors
1		Technical Data Package Review (Unity 3.4.0.0)	160 days	Fri 11/4/11	Mon 6/18/12	
2	✓	Document Submission from ES&S	1 day	Fri 11/4/11	Mon 11/7/11	
3	✓	TDP Review	142 days	Mon 11/7/11	Wed 5/23/12	2
4		ES&S Review of Report and Correct Documents	5 days	Wed 5/23/12	Thu 5/31/12	3
5		Document Re-Review	5 days	Thu 5/31/12	Thu 6/7/12	4
6		Document Accepted	2 days	Thu 6/7/12	Mon 6/11/12	5
7	✓	Final Report TDP Review	5 days	Mon 6/11/12	Mon 6/18/12	6
8		**Source Code Review**	**109 days**	**Wed 11/9/11**	**Tue 4/10/12**	
9	✓	Submission of ES&S Coding Standards	1 day	Wed 11/9/11	Thu 11/10/11	
10	✓	Review Coding Standards	0 days	Wed 11/9/11	Thu 11/10/11	9
11		Source Code Review	102 days	Thu 11/17/11	Mon 4/9/12	
12	✓	EMS Source Code Review (HPM, ERM)	100 days	Thu 11/17/11	Thu 4/5/12	
13	✓	DS200 Source Code Review	96 days	Wed 11/23/11	Wed 4/4/12	
14	✓	DS850 Source Code Review	84 days	Wed 12/7/11	Tue 4/3/12	
15		Source Code Review Completion	2 days	Thu 4/5/12	Mon 4/9/12	
16	📅	Final Report Source Code Review Test	2 days	Thu 4/5/12	Mon 4/9/12	19
17		Compliance Builds	4 days	Wed 4/4/12	Tue 4/10/12	
18		Compliance Build of HPM and ERM	2 days	Fri 4/6/12	Tue 4/10/12	20
19	✓	Compliance Build of DS850	1 day	Wed 4/4/12	Thu 4/5/12	
20	✓	Compliance Build of D200	1 day	Thu 4/5/12	Fri 4/6/12	19
21		Test Plan Creation	141 days	Fri 11/11/11	Tue 5/29/12	
22	✓	Receive Documentation	1 day	Fri 11/11/11	Mon 11/14/11	
23	✓	Receive Hardware Equipment	0 days	Mon 11/14/11	Mon 11/14/11	22
24	✓	Draft Test Plan	9 days	Mon 11/14/11	Fri 11/25/11	23
25	✓	Draft Test Plan Reviewed by ES&S and Wyle	4 days	Fri 11/25/11	Thu 12/1/11	24
26	✓	Submit to EAC	0 days	Tue 12/6/11	Tue 12/6/11	
27	✓	EAC Review of Test Plan	16 days	Tue 12/6/11	Wed 12/28/11	26
28	✓	**Test Plan on Hold**	62 days	Wed 12/28/11	Fri 3/23/12	27
29	✓	Draft Test Plan	9 days	Fri 3/23/12	Thu 4/5/12	28
30	✓	Draft Test Plan Reviewed by ES&S and Wyle	3 days	Thu 4/5/12	Tue 4/10/12	29
31	📅	Submit to EAC	1 day	Thu 4/12/12	Fri 4/13/12	
32	✓	EAC Review of Test Plan	10 days	Fri 4/13/12	Fri 4/27/12	31
33		Wyle Review EAC Comments	5 days	Fri 4/27/12	Fri 5/4/12	32
34		Create Final Test Plan	5 days	Fri 5/4/12	Fri 5/11/12	33

Project: Certification Revised Schedule
Date: Thu 4/12/12

Task		Milestone	◆	External Milestone	◆	Manual Summary Rollup
Split		Summary		Inactive Task		Manual Summary
Milestone	◆	Project Summary		Inactive Milestone		Start-only
Summary		External Tasks		Inactive Summary		Finish-only
Project Summary		Manual Task		Duration-only		Progress
External Tasks		Duration-only				Deadline

ID	Task Name	Duration	Start	Finish	Predecessors
35	EAC Review	10 days	Fri 5/11/12	Fri 5/25/12	34
36	Test Plan Approved	1 day	Fri 5/25/12	Tue 5/29/12	35
37	Physical Configuration Audit	99 days	Thu 12/1/11	Wed 4/18/12	
38	PCA Complete	4 days	Mon 4/9/12	Fri 4/13/12	
39	PCA	3 days	Mon 4/9/12	Thu 4/12/12	
40	Report PCA Test	1 day	Thu 4/12/12	Fri 4/13/12	39
41	PCA SCAP Checklist (Baseline of OS)	2 days	Thu 12/1/11	Mon 12/5/11	
42	Verify Scap Checklist	2 days	Mon 4/16/12	Wed 4/18/12	
43	Functional Testing	9 days	Fri 4/13/12	Thu 4/26/12	
44	Functional Execution	9 days	Fri 4/13/12	Thu 4/26/12	
45	DS200 Functional Tests	4 days	Fri 4/13/12	Thu 4/19/12	40
46	DS850 Functional Tests	4 days	Thu 4/19/12	Wed 4/25/12	45
47	FCA Completion	1 day	Wed 4/25/12	Thu 4/26/12	
48	Report FCA Test	1 day	Wed 4/25/12	Thu 4/26/12	46
49	Hardware Testing	33 days	Tue 11/8/11	Fri 12/23/11	
50	Other Hardware Tests	11 days	Tue 11/8/11	Wed 11/23/11	
51	Electrical Power Supply (DS850)	0 days	Tue 11/8/11	Tue 11/8/11	
52	Maintainability (DS850)	0 days	Wed 11/9/11	Wed 11/9/11	
53	Temperature Power/Reliability (DS850)	7 days	Mon 11/14/11	Wed 11/23/11	
54	Completion of All Hardware Testing	9 days	Mon 12/12/11	Fri 12/23/11	
55	Hardware Test Report	9 days	Mon 12/12/11	Fri 12/23/11	
56	System Level Performance Testing	17 days	Thu 4/26/12	Mon 5/21/12	
57	Accuracy Test	4 days	Thu 4/26/12	Wed 5/2/12	
58	Accuracy Test DS200	4 days	Thu 4/26/12	Wed 5/2/12	48
59	Accuracy Test DS850	4 days	Thu 4/26/12	Wed 5/2/12	48
60	Security Test	3 days	Thu 4/26/12	Tue 5/1/12	
61	Access Controls Review (WoP 6)	3 days	Thu 4/26/12	Tue 5/1/12	48
62	Completion of Access Control Review	1 day	Thu 4/26/12	Tue 5/1/12	48
63	Completion of Security Test	1 day	Tue 5/1/12	Wed 5/2/12	
64	Final Report Security Assessment	1 day	Tue 5/1/12	Wed 5/2/12	62
65	Telecommunication Testing	8 days	Wed 5/2/12	Mon 5/14/12	
66	Setup Telecom Testing	1 day	Wed 5/2/12	Thu 5/3/12	59
67	Execute Telecom Testing	6 days	Thu 5/3/12	Fri 5/11/12	66
68	Report Telecom Testing	1 day	Fri 5/11/12	Mon 5/14/12	67

Project: Certification Revised Schedule
Date: Thu 4/12/12

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		Progress
External Tasks		Duration-only		Deadline

ID	Task Name	Duration	Start	Finish	Predecessors	T	F
69	System Integration Testing	13 days	Wed 5/2/12	Mon 5/21/12			
70	GEN 01	2 days	Wed 5/2/12	Fri 5/4/12			
71	GEN 01 test	2 days	Wed 5/2/12	Fri 5/4/12	59		
72	GEN 02	2 days	Fri 5/4/12	Tue 5/8/12			
73	GEN 02 test	2 days	Fri 5/4/12	Tue 5/8/12	71		
74	GEN 03	2 days	Tue 5/8/12	Thu 5/10/12			
75	GEN 03 test	2 days	Tue 5/8/12	Thu 5/10/12	73		
76	PRIM 01	2 days	Thu 5/10/12	Mon 5/14/12			
77	PRIM 01 test	2 days	Thu 5/10/12	Mon 5/14/12	75		
78	PRIM 02	2 days	Mon 5/14/12	Wed 5/16/12			
79	PRIM 02 test	2 days	Mon 5/14/12	Wed 5/16/12	77		
80	PRIM 03	2 days	Wed 5/16/12	Fri 5/18/12			
81	PRIM 03 test	2 days	Wed 5/16/12	Fri 5/18/12	79		
82	Completion of System Integration Testing	1 day	Fri 5/18/12	Mon 5/21/12			
83	Final Report System Integration Tests	1 day	Fri 5/18/12	Mon 5/21/12	81		
84	All Testing Activities Completed	2 days	Fri 5/18/12	Tue 5/22/12			
85	Verification and compilation of all test data	2 days	Fri 5/18/12	Tue 5/22/12	81		
86	PCA Completion	6 days	Tue 5/22/12	Thu 5/31/12			
87	Regression All Changes to PCA that Occurred during the Test Campaign	5 days	Tue 5/22/12	Wed 5/30/12	85		
88	Final Report PCA	1 day	Wed 5/30/12	Thu 5/31/12	87		
89	Final Trusted Build	8 days	Tue 5/22/12	Mon 6/4/12			
90	Verify Build Environment	1 day	Tue 5/22/12	Wed 5/23/12	84		
91	Trusted Build	2 days	Wed 5/23/12	Fri 5/25/12	90		
92	Install and Verify System Build	3 days	Fri 5/25/12	Thu 5/31/12	91		
93	Final Trusted Build Complete	1 day	Thu 5/31/12	Fri 6/1/12	92		
94	Delivery of Images to EAC Repository	1 day	Fri 6/1/12	Mon 6/4/12	93		
95	Post Testing Activities	43 days	Tue 5/22/12	Tue 7/24/12			
96	Certification Report	43 days	Tue 5/22/12	Tue 7/24/12			
97	Initial Draft Report	10 days	Tue 5/22/12	Wed 6/6/12	84		
98	Manufacturer Review	2 days	Wed 6/6/12	Fri 6/8/12	97,85		
99	Final Test Report for Submission to EAC for Review	1 day	Fri 6/8/12	Mon 6/11/12	98		
100	EAC Review	20 days	Mon 6/11/12	Tue 7/10/12	99		
101	Address Comments From TRs	6 days	Tue 7/10/12	Wed 7/18/12	100		
102	Submit Final Report	4 days	Wed 7/18/12	Tue 7/24/12	101		

Project: Certification Revised Schedule
Date: Thu 4/12/12

Task		External Milestone	◆
Split		Inactive Task	
Milestone	◆	Inactive Milestone	
Summary		Inactive Summary	
Project Summary		Manual Task	
External Tasks		Duration-only	

Manual Summary Rollup			
Manual Summary			
Start-only	⊏		
Finish-only	⊐		
Progress			
Deadline	⇩		

APPENDIX C

TABLE 3-1 UNITY 3.4.0.0 SYSTEM SOFTWARE AND FIRMWARE

TABLE 3-2 UNITY 3.4.0.0 SYSTEM THIRD PARTY (COTS) SOFTWARE DESCRIPTIONS

TABLE 3-3 UNITY 3.4.0.0 SYSTEM THIRD PARTY BUILD SOFTWARE DESCRIPTIONS

Table 3-1 Unity 3.4.0.0 System Software and Firmware

Software/Firmware	Version	Description
AIMS	1.3.257	A windows-based election management system software application to define election parameters for the VAT, including functionality to import election definition files produced by the Unity EMS and create VAT flash memory cards
Audit Manager (AM)	7.5.2.0	The Audit Manager (AM) utility provides security and user tracking for Election Data Manager and Ballot Image Manager. Audit Manager runs in the background of the other Unity programs and provides password security and a real-time audit log of all user inputs and system outputs.
Log Monitor Service	1.0.0.0	Log Monitor 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.
Election Data Manager (EDM)	7.8.1.0	Election Data Manager (EDM) is the entry point for the Unity Election Management System. Election Data Manager is a single-entry database that stores precinct, office, and candidate information. Data entered for an initial election is stored to a re-useable database to be recalled and edited for all elections that follow.
ES&S Ballot Image Manager (ESSIM)	7.7.1.0	ES&S Ballot Image Manager (ESSIM) uses ballot style information created by Unity Election Data Manager to display the ballots in a WYSIWIG design interface. Users can apply typographic formatting (font, size, attributes, etc.) to individual components of the ballot.
Hardware Programming Manager (HPM)	5.8.0.0	Hardware Programming Manager (HPM) uses the election specific database created with Election Data Manager and Ballot Image Manager to program the appropriate media for ES&S tabulation devices.
Election Reporting Manager (ERM)	7.8.0.0	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 results reports directly to media outlets.
VAT Previewer	1.3.2907	The VAT Previewer is an application within the AIMS program that allows the user to preview audio text, and screen layout prior to burning election day media for the AutoMARK.

Table 3-2 Unity 3.4.0.0 System Third Party (COTS) Software Descriptions

Software Product	Software Version	Filename	Hash Value
Microsoft Windows XP, SP3	5.1	Original Disk	N/A
Microsoft Windows XP Updates	N/A	N/A	N/A
Micro Focus RM/COBOL Runtime	11.01	Original Disc	N/A
Microsoft Server 2003	R2	Original Disc	N/A
Microsoft Server 2003 Updates	N/A	N/A	N/A
Adobe Acrobat Standard	9.0	N/A	N/A
AVG Business Edition	9.0	N/A	N/A
Microsoft Excel 2003	Office 2003	Original Disc	N/A
Cerberus FTP			
WS_FTP Professional			

Table 3-3 Unity 3.4.0.0 System Third Party Build Software Descriptions

Software Product	Software Version	Filename	SHA1 Hash Value (Original CD's will be marked N/A as no hash value is required.)
EMS Build Environment			
Apache Software Foundation Xerces-C++	2.7.0	xerces-c_2_7_0-windows_2000-msvc_60.zip	1887a204bfd208971daf993881e331a99ca89f8f
Avocet ADX-Z180	5.2	Original CD	N/A
Business Objects Crystal Reports	9 Developer	Original CD	N/A
Business Objects Crystal Reports	9 Developer Hot Fix (05/14/2003)	cr90dbexwin_en.zip	6086c0de9072136b263047f40862d22c1b46702b
Business Objects Crystal Reports	9 Developer Hot Fix (05/14/2003)	cr90mainwin_en.zip	3086da615d8178bed4af5c8a7d2500b8b96b50cc
CodeSynthesis XSD (Includes Apache Software Foundation Xerces C++ 2.8.0)	3.1.0	xsd-3.1.msi	aa5f2fb2c815e8e1aa94314c08697751d056690b
CSM PC-Card SDK	2.20	Original CD	N/A
InstallShield Software InstallShield	Professional 7.01	Original CD	N/A
MacroVision InstallShield	2008 Premier Edition	Original CD (two disk set)	N/A
MacroVision InstallShield Standalone Build Script Objects	2008 Premier Edition	installshieldinstallscript objects.exe	N/A
MicroFocus (Liant) RM/COBOL Development System	11.01	setup.exe	b8b2a175511130633d6f10bcb2545f732944caf8
MicroFocus (Liant) WOW Designer	11.01	setup.exe	23a6d81415db51683360dd55e8c11eb091610c4f

Table 3-3 Unity 3.4.0.0 System Software and Firmware (Continued)

Software/Firmware	Version	Description	
Microsoft Visual Studio	Enterprise Edition 6.0	Original CD (three disk set)	N/A
Software Product	**Software Version**	**Filename**	**SHA1 Hash Value**
EMS Build Environment (continued)			
Microsoft Visual Studio	Enterprise Edition 6.0	Original CD (three disk set)	N/A
Microsoft Visual Studio	6.0 Service Pack 6	Vs6sp6.exe	2292437a8967349261c810ae8b456592eeb76620
Microsoft Visual Studio	2005 Professional Edition	Original CD (two disk set)	N/A
Microsoft Visual Studio	2005 Service Pack 1	VS80sp1-KB926601-X86-ENU.exe	d4b5c73253a7a4f5b4b389f41b94fea4a7247b57
Microsoft Windows	XP Professional Service Pack 3	Original CD	N/A
RoboHelp Office	9	Original CD	N/A
RSA BSAFE Crypto-C	Micro Edition (ME) 3	r_unpack.exe	5c48f05c4cf65784f5b129e15a0538361193f015
RSA BSAFE Crypto-C	Micro Edition (ME) 3	cryptocme-3_0_0_1-win32vc8.pkg	30fb23005a0e315a5eecee37cfbf64b3e3f62b20
Sequiter Codebase	6.5 Release 3	cb_setup.exe	797ad01a3297fb36cbf0bd7313d904f1d32714b0
SourceForge Boost C++ Libraries	1.34.1	boost_1_34_1.zip	90a10d2e3591fcaa2b8cd10121980133af3eb2ff
SourceForge Boost C++ Libraries	1.34.1	libboost_filesystem-vc80-mt-s-1_34_1.zip	5bdd6acc0e9aa1894c52cc3a71c0f6f2387f28d0
Young Dynamic Software vbAdvance	3.1	vbAdvance3_1.exe	25d7f60e7f02fb461856b80e45f2cc37c191debb
InfoZip	2.32	unzip.exe	e1652b058195db3f5f754b7ab430652ae04a50b8
	5.52	zip.exe	55c5a72010291fca2275ccfb5b497dd0bac11a60
MarshallSoft	0.0.0.0 Linker Rev. 3	WSC32.DLL	ac0d9b7d7ac30e98af162735bc9e7b1b24c48d23
Microsoft	2.40.4275.1	asycfilt.dll	72fb4f088c6ac02097b55fb267c76fbf5e0fa1f7
	4.71.1460.1	COMCAT.DLL	2a409311853ad4608418e790621f04155e55000
	6.7.0.8988	COMCT332.OCX	398f64c00b026d1c6d94a6efd180f20c010f5ee9
	6.0.84.18	COMDLG32.OCX	34e4213d8bf0e150d3f50ae0bd3f5b328e1105f5
	6.0.8447.0	MFC42D.DLL	4fd93acca2de6c40f40e54ada9e6e17a18688dc9
	6.0.88.4	MSCOMCT2.OCX	c0c55de97f41a24bf50b2d08eb428371bb4a3cce
	6.0.88.62	MSCOMCTL.OCX	d904d2fa7639c38ffb6e69f1ef779ca1001b8c18
	6.4.9.1128	msdxm.ocx	5ec3d82bbf004b82e0232e56fc7105ea26df59b2
Microsoft	6.1.43.19	MSVBVM50.DLL	75d05db7085de3222951eaa5fee2b74feaf88e17
	6.0.89.64	MSVBVM60.DLL	ce82d1ccf593088d09694ef90e44c4ea2761be92
	6.0.8168.0	MSVCP60.DLL	8770ec0910b7cc9a0461a40dfb495ee7f5b4267b
	6.0.8168.0	MSVCP60D.DLL	6de04508e27dd7022a4d4826b0f15d702fdd9f8a

Table 3-3 Unity 3.4.0.0 System Software and Firmware (Continued)

Software Product	Software Version	Filename	SHA1 Hash Value
EMS Build Environment (continued)			
	6.0.8797.0	msvcrt.dll	63a4fcd64ecea975c1b91de04702c68a9f2a3c7d
	5.0.0.7022	MSVCRTD.DLL	d24d0335eae1cfa63c8a68718b54ce223baee9d3
	2.40.4275.1	oleaut32.dll	6b58e20b2538cb308091da838710f6aad933a301
	5.0.4275.1	olepro32.dll	8adff69050d14a57d7f553ca8978439af188c192
	6.4.2600.1221	quartz.dll	607329d446b344209ade8b501ba37893b95f3e2a
	6.0.88.4	RICHTX32.OCX	90fec763edfb0b0924700be6b914292c591a152c
	2.40.4275.1	stdole2.tlb	36f701ccec78a5d218fea23fd05351890f14cf7d
	6.0.81.69	SYSINFO.OCX	fc5cd0599a43faebf9e7e9179defb79999215286
	6.0.90.43	TABCTL32.OCX	e8648d6d69fd5cf900c4bf98b210f6921bed3ef5
Software Product	**Software Version**	**Filename**	**SHA1 Hash Value**
EMS Build Environment (continued)			
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
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
Atmel Flip for Windows	2.4.6	flip-2_4_6.zip	02877cdbd07c74c92b12c7ad14ca22411abc5045
Atmel Microcontroller ISP Software	1.0	Original CD	N/A
Cosmic Software 68HC08 C Compiler	4.1h	Original CD	N/A
InfoZip Zip Utilities	Unknown	zip_utils_src.zip	17d8fc37a477de0c5e3217a2b82245bd3de2fae1
Future Technology Devices Intl. Ltd. D2XX WinCE Driver	Unknown	ARM4D2XXDriver.zip	be6d74e8a9a038af3fadbddd30153609621267a9
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

Table 3-3 Unity 3.4.0.0 System Software and Firmware (Continued)

Software Product	Software Version	Filename	SHA1 Hash Value
AutoMARK Build Environment (continued)			
MacroVision InstallShield Professional	10.5	Original CD	N/A
Microsoft Office	XP Professional 2002	Original CD	N/A
Microsoft SQL Server	2000 Enterprise Edition	Original CD	N/A
Microsoft Visual Studio	.Net 2003	Original CD	N/A
Microsoft Windows	XP Professional with Service Pack 2	Original CD	N/A
Microsoft Windows CE Platform Builder	5.0	Original CD	N/A
Microsoft Windows CE Platform Builder	Cumulative 2004 Update	WinCEPB50-041231-Product-Update-Rollup-Armv4I.msi	2a33a1540e25118e9360e7298af7c96da206006f
Microsoft Windows CE Platform Builder	Cumulative 2005 Update	WinCEPB50-051231-Product-Update-Rollup-Armv4I.msi	331f874c41fd2abe79ddc97ac9a47b91d203bdf9
Microsoft Windows CE Platform Builder	January 2006 Update	WinCEPB50-060131-2006M01-Armv4I.msi	884241dd89bd1fda9683fb6d6ba14f1c82cf9b2c
Microsoft Windows CE Platform Builder	February 2006 Update	WinCEPB50-060228-2006M02-Armv4I.msi	4695c80aff3707a1926ec54d0756af3a426d8e0f
Software Product	**Software Version**	**Filename**	**SHA1 Hash Value**
AutoMARK Build Environment (continued)			
Microsoft Windows CE Platform Builder	March 2006 Update	WinCEPB50-060331-2006M03-Armv4I.msi	39dc323b9736441893322fc1b159bc94dd2ec3b5
Microsoft Windows CE Platform Builder	April 2006 Update	WinCEPB50-060430-2006M04-Armv4I.msi	823c496b554f9d3d29cd491f80ffda9729176b89
Microsoft Windows CE Platform Builder	May 2006 Update	WinCEPB50-060531-2006M05-Armv4I.msi	29df27801c8bd2a3a68567cfa65e1ff54de8ae63
Microsoft Windows CE Platform Builder	June 2006 Update	WinCEPB50-060630-2006M06-Armv4I.msi	7421d73ec31cd1e9250e6c591e14f00a98988f59
Microsoft Windows CE Platform Builder	July 2006 Update	WinCEPB50-060731-2006M07-Armv4I.msi	f8ab5055a648ea23a64e3e89ef01e88ec9836b5c
Microsoft Windows CE Platform Builder	August 2006 Update	WinCEPB50-060831-2006M08-Armv4I.msi	43b5d5a6f1be643e9dd4af970dc1785188bbe622

Table 3-3 Unity 3.4.0.0 System Software and Firmware (Continued)

Software Product	Software Version	Filename	SHA1 Hash Value
AutoMARK Build Environment (continued)			
Microsoft Embedded Visual C++	4.0	Original CD	N/A
Microsoft Embedded Visual C++	4.0 Service Pack 4	evc4sp4.exe	77d2cf961acc96fd78fdaa910f989a41010edd45
P&E Microcomputer Systems PKG08SZ 68HC08 Development Package	2006	Original CD	N/A
SpeechWorks International, Inc. ETI-Eloquence TTS Engine	6.1.0.0	chsrom.dll	f3ae8a1f7d0369d387b8f2ee0a47a76efee2bc2f
		eci.dll	7aa1085174b7bce6016c8074297bc6cb40b823df
		jpnrom.dll	7557c00e8ace29affdabebddb73f466d0877a866
		korrom.dll	76219d7f9f76f021b4815fa796f80e3ca49e3446
		chs.syn	ff7c1873b84256c25da601d70ad280333e5ce167
		enu.syn	3e69875d11e0a53c39c211c484cb6520f8d87f25
		esm.syn	d8037d86e5f677e89eca7834ae47fbd030a043aa
		jpn.syn	99a931e76e6008da9f01b91b4d91c116ece8f7d7
		kor.syn	f32f8ae286ed278320dbb829df338b97a2c846b5
Texas Instruments Code Composer Studio	v2 TMS320C5000 DSP Platform	Original CD	N/A
DS200 Ancillary Devices			
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 Precinct Digital Scanner			
Software Product	**Software Version**	**Filename**	**SHA1 Hash Value**
lfs_cots			
cryptocme	3.0	cryptocme-3.0-rhel30.tar.gz	4fe8c6a6ddbf524cfa88e3e6cf195447afc67977
lfs_kernel			
linux kernel	2.6.24.7	linux-2.6.24.7.tar.bz2	c58a58a3227aa7f91caec1649d9f111d75a96a66
lfs_graphics			
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
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

DS200 Precinct Digital Scanner			
Software Product	**Software Version**	**Filename**	**SHA1 Hash Value**
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
Software Product	**Software Version**	**Filename**	**SHA1 Hash Value**
DS200 Precinct Digital Scanner (continued)			
font-bitstream-type1	1.0.1	font-bitstream-type1-1.0.1.tar.bz2	53800b904fc3ead6b577a34fb7c1f96c1af4423f
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.bz	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	1.0.1	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
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
fontconfig	2.8.0	fontconfig-2.8.0.tar.gz	570fb55eb14f2c92a7b470b941e9d35dbfafa716
fontsproto	2.1.0	fontsproto-2.1.0.tar.bz2	395b300fd5120a7ff90cb8fea4e2356b9632dc3e

Software Product	Software Version	Filename	SHA1 Hash Value
DS200 Precinct Digital Scanner (continued)			
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
glibmm	2.12.10	glibmm-2.12.10.tar.bz2	361466df6302ec5626a87e75786da4c7c39ffe14
glproto	1.4.11	glproto-1.4.11.tar.bz2	7c2a723d488dc0e09e7e0e28bde838502d774b16
gtk+	2.10.13	gtk+-2.10.13.tar.bz2	8d00b928a8788ff86d97197c20c18d41f9a1b1cd
gtkmm	2.8.12	gtkmm-2.8.12.tar.bz2	38d11d72ac242178703b81f6d2ed6ddec78867b9
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
Software Product	**Software Version**	**Filename**	**SHA1 Hash Value**
DS200 Precinct Digital Scanner (continued)			
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	libdmx	libdmx-1.1.0.tar.bz2	8719434f167d476d53fca57c5be516c153354d60
libdrm	2.4.14	libdrm-2.4.14.tar.bz2	a18cc2cdfd02b8ba1c91c3e9ac609521ad3e2fe9
librsvg	2.14.4	librsvg-2.14.4.tar.bz2	9314f0d44dbfe672dc1f1a65b66821593c3bf1ce
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
libsigc	2.0.18	libsigc2.0.18.tar.bz2	75df46c977a3418bda4d5ae7e21c9ede28993835
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

Software Product	Software Version	Filename	SHA1 Hash Value
DS200 Precinct Digital Scanner (continued)			
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
libXdmcp	1.0.3	libXdmcp-1.0.3.tar.bz2	7efd71d29d6cfba797b8791398e4d81ade677d77
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
Software Product	**Software Version**	**Filename**	**SHA1 Hash Value**
DS200 Precinct Digital Scanner (continued)			
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
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

Software Product	Software Version	Filename	SHA1 Hash Value
DS200 Precinct Digital Scanner (continued)			
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
xcursor-themes	1.0.2	xcursor-themes-1.0.2.tar.bz2	12b865c17c65e70a6bc20300dfa660fe8faaa0a4
xcursorgen	1.0.3	xcursorgen-1.0.3.tar.bz2	7df26b371476654dc191c45e7d20ae3a5e0cad87
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

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DS200 Precinct Digital Scanner (continued)			
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
xf86bigfontproto	1.2.0	xf86bigfontproto-1.2.0.tar.bz2	312a2ea708b257520c1af4393b69d73a393a478f
xf86dgaproto	2.1	xf86dgaproto-2.1.tar.bz2	97a06120e7195c968875e8ba42e82c90ab54948b

Software Product	Software Version	Filename	SHA1 Hash Value
DS200 Precinct Digital Scanner (continued)			
xf86driproto	2.1.0	xf86driproto-2.1.0.tar.bz2	0dfc6616ffc68ca3c3b5decb1e365aaa93be8548
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
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	ff42954442821826092b17248c1ad65e16cd860ef
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_enhanced			

Software Product	Software Version	Filename	SHA1 Hash Value
DS200 Precinct Digital Scanner (continued)			
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
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-zlib-1	1.11.22	cvs-1.11.22-zlib-1.patch	0d20bab8a6b6e419a8c900d082b487ad6a3aec38
cvs	1.11.22	cvs-1.11.22.tar.bz2	5dfa11da84a890d7d61516fd450c001dc24bcc0d
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	2.8.5	fuse-2.8.5.tar.gz	862320b56d6bc4ad5e7be2b1e0b5029166aae09b
fuse-zip	0.2.12	fuse-zip-0.2.12.tar.gz	fe6f1a32d7fbc0d8c8598b8c7f56129fe5ebc173
gnupg	1.4.3	gnupg-1.4.3.tar.bz2	9e96b36e4f4d1e8bc5028c99fac674482cbdb370
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
gpm	1.20.1	gpm-1.20.1.tar.bz2	c48d937e62abb438c2f6439b34ef3332c89af8d1
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

Software Product	Software Version	Filename	SHA1 Hash Value
DS200 Precinct Digital Scanner (continued)			
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	4.5p1	openssh-4.5p1.tar.gz	2eefcbbeb9e4fa16fa4500dec107d1a09d3d02d7
openssh	5.8p1	openssh-5.8p1.tar.gz	adebb2faa9aba2a3a3c8b401b2b19677ab53f0de
openssl	0.9.8r	openssl-0.9.8r.tar.gz	a02411e5f4d463cac4a2a4a357a4a0b93bf65e72

Software Product	Software Version	Filename	SHA1 Hash Value
DS200 Precinct Digital Scanner (continued)			
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
unzip552	5.52	unzip552.tar.gz	1831bd59b9e607a69052f83b263384895e2d4a19
unzip-security_fix-1	5.52	unzip-5.52-security_fix-1.patch	7f6a287c0b480bc4748abdf69429dfc76383e1d6
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
DS850 Central Digital Scanner			
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-2.2.0.0k-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

Software Product	Software Version	Filename	SHA1 Hash Value
DS850 Central Digital Scanner (continued)			
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
Software Product	Software Version	Filename	SHA1 Hash Value
DS850 Central Digital Scanner (continued)			
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

Software Product	Software Version	Filename	SHA1 Hash Value
DS850 Central Digital Scanner (continued)			
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
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-0.9.8n.tar.gz	595f5ebf592568515964f0adc62239e7012ef08b
openssl-fix_manpages-1	0.9.8n	openssl-0.9.8d-fix_manpages-1.patch	afb498051e466131ae90dfc678234e8876af88a4
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	unzip552.tar.gz	1831bd59b9e607a69052f83b263384895e2d4a19
Software Product	**Software Version**	**Filename**	**SHA1 Hash Value**
DS850 Central Digital Scanner (continued)			
unzip-security_fix-1	5.52	unzip-5.52-security_fix-1.patch	7f6a287c0b480bc4748abdf69429dfc76383e1d6
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-i686linux-gnu	xsd-3.1.0-i686-linux-gnu.tar.bz2	a7bf9b26ff5ab577fcfeccc9ea76134da88ec7e2
zip232	232	zip232.tar.gz	5bc562bf95d9aee0cb6625e6038898e1f191a4aa
lfs_graphics-2.2.0.0k-src.tar			
a2ps	4.14	a2ps-4.14.tar.gz	365abbbe4b7128bf70dad16d06e23c5701874852
atk	1.18.0	atk-1.18.0.tar.bz2	d58dfc3dbdad49d8c446e0bd4a0b6260d315ceb0

Software Product	Software Version	Filename	SHA1 Hash Value
DS850 Central Digital Scanner (continued)			
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
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

Software Product	Software Version	Filename	SHA1 Hash Value
DS850 Central Digital Scanner (continued)			
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

Software Product	Software Version	Filename	SHA1 Hash Value
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

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DS850 Central Digital Scanner (continued)			
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

Software Product	Software Version	Filename	SHA1 Hash Value
DS850 Central Digital Scanner (continued)			
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
Software Product	**Software Version**	**Filename**	**SHA1 Hash Value**
DS850 Central Digital Scanner (continued)			
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

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DS850 Central Digital Scanner (continued)			
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
xproto	7.0.16	xproto-7.0.16.tar.bz2	0eda5588d42f2c810d8491da44fe84a4093e12bc
xcursor-themes	1.0.2	xcursor-themes-1.0.2.tar.bz2	12b865c17c65e70a6bc20300dfa660fe8faaa0a4
Software Product	**Software Version**	**Filename**	**SHA1 Hash Value**
DS850 Central Digital Scanner (continued)			
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

Software Product	Software Version	Filename	SHA1 Hash Value
DS850 Central Digital Scanner (continued)			
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
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

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DS850 Central Digital Scanner (continued)			
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	2.6.22.19	linux-2.6.22.19.tar.bz2	fd0767105a5bac3010562692cd53c8506814e9ff
Model 100 Precinct Scanner			
QNX Operating System	4.22A	Original 3-1/2" High-Density Floppy Diskettes (Four Diskettes)	N/A
QNX Operating System	4.22A Manual Patches	gmake	1683c7d6fee0aaf82cf8fa16a3d53e69a861ff39
QNX/Sybase WATCOM C	10.6	Original CD	N/A
QNX Product Suite	May 2001 Upgrade	Original CD	Original CD
QNX Embedded Kit	1.0	Original 3-1/2" High-Density Floppy Diskette	N/A
QNX Embedded Kit	1.0 Manual Patches	Efsys.386ex	b0e0e35d9feb036d9b0b6f8260f18d9eb3b4c877
		Efsys.cirrus	5aa5510925cdb0cd2d6fcefb3ae4d4f8d03b4dea
		boot.386expc	708590c7feec1ba8db6dd4a503dc49a88d0818cb
		commons.lib	6bb7f353ce429c9e35551a7f0d806c48adac19bd
		compress.o	c317315d9f58a9d3c25349e2b18110712395e3ff
		cstart_copy.o	761182fffb4ab2f2932a2b9be21dee4ea4ee2488
		cstart_ram.o	9fbf727c32521c631196f220a592bb5c8a404bd7
		nocis.o	bd56005d8d7c510dfc8296ffc3c89ea98f232f07
		sss.lib	c4fd16198dffca3a33b14022cf100a68cbde93a6
		xip.o	bc729655ef6851fd1f711844dd198b02b6638fde
Model 650 Central Scanner			
QNX Product Suite	May 2001 Upgrade	Original CD	N/A
QNX Operating System	4.25 Patch G	qnx-4.25-01G.tarx	a7b88ce9674e6bdf48f8edd1600f2b15b31d5e1d
QNX TCP/IP Runtime	4.25 Patch D	tcprt-4.25-01D.tarx	77fe7148af16a7a5685e19bc91f732d5b12907e6
QNX TCP/IP Runtime Documentation	4.2.5 Patch D	tcprt-4.25-02D.tarx	99ef2f21e37beaea69a1f9d509c981fbc80ad570
QNX TCP/IP Development Kit	4.25 Patch C	tcptk-4.25-01C.tarx	2f04519b314d991361b9be78c30f61c1d75e9be5
QNX TCP/IP Development Kit Documentation	4.25 Patch C	tcptk-4.25-02C.tarx	e7daea43f69384900931203c47c4748555f5a8ec