

**John Gardner**

**From:** John Gardner  
**Sent:** Friday, June 08, 2007 2:15 PM  
**To:** 'jgarcia@Systest.com'  
**Cc:** 'Kerrigan, Kevin'  
**Subject:** Spreadsheet of trusted build  
**Attachments:** hash2hash.xls

Jen, from Kevin's phone call, here are the discrepancy files.

On the excel spreadsheet, "bldhash" is the sheet containing the hash values from the trusted build (Systest disk), "fishcomp" is the sheet containing values from the AutoMARK, and "sheet 1" is the sheet containing the exception files. The files highlighted in yellow are the txt output files from the hash generation software. Since these are known exceptions we can ignore them. The others however are the current issue.

We also have a multitude of questions on what we have received. For example:

- X1) Hash exception listed above; (SYSTEMST TO RESEARCH)
- 2) Systest provided 2400+ files, yet we've only found 770 on the AutoMARK. Why the discrepancy?
- 3) Files are found in the AutoMARK in folders other than what is in the trusted build. This leads us to believe we have a discrepancy. This needs explanation. (SYSTEMST TO RESEARCH)
- 4) Systest provided instructions for creating the CAB files, yet the directory structure does not match the instructions. What is the expectation? Is the direction we are receiving to create this CAB File? (SYSTEMST TO RESEARCH)

Clearly the first item is the most critical on our plate at the moment, putting us in a holding position at this time with the AutoMARK.

Please advise on how we should proceed.

Thank you for your assistance,

John Gardner  
 Voting Systems Program Manager  
 Colorado Department of State  
 1700 Broadway, Suite 270  
 Denver, CO 80290  
 (o) 303-894-2200 ext. 6318  
 (c) 719-243-6344  
 (f) 303-869-4861

Meeting on 6/21

- PROVIDED SYSTEMST A COPY OF THEIR CD
- PROVIDED (AFTER DISCUSSION) OF DIRECTORY STRUCTURE & TRUSTED BUILD INSTRUCTIONS FROM HP.
- BUT & SYSTEMST TO RESEARCH & REPORT BACK TO CDDOS.

6/21/2007

**Michael Chadwell**

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**From:** John Gardner  
**Sent:** Monday, June 25, 2007 9:10 AM  
**To:** Flowers, Darwin; Pearson, Steve; Kevin Keelan; Sascha Davis  
**Cc:** Tim Bishop; Geneice Mathews; Michael Chadwell  
**Subject:** RE: Colorado Questions

Darwin, I did not receive Paul Holly's e-mail address with this, but I am forwarding my response to Systest labs and my team on these issues as there is still discrepancies in what the state is being told for this device.

Item #1 – Systest Response: After speaking with Paul Holly from ATS, he confirmed that when an install or upgrade is preformed on

a system, all necessary and/or upgraded files are moved off of the compact flash card onto the hardware memory. All other files that are not needed or haven't changed remain on the flash card.

Unfortunately there is no documentation that specifically states this but he assures us that this is what happens during an install or upgrade

AutoMARK Response: Trusted build files are copied (not moved) off the Compact Flash card during the upgrade process. The files that are used to update the files on the internal memory of the AutoMARK are compressed and stored in the .CAB file on the Compact Flash card. During the upgrade process, files are not moved off the compact flash card, but rather uncompressed and copied to the internal memory of the AutoMARK.

State Comments: We are witnessing the device respond in the same fashion as the Systest response. This causes some concern hearing a different story from the manufacturer – particularly since this is one that we cannot reproduce. We also questioned AutoMARK on the addition of the "nonvolatilelibrary.dll" file to the compact flash after upgrade, which did not originate with the trusted build files. This will still need to be addressed.

Item #2 to AutoMARK – this was not a request for information on the COTS OS files, this was a request to receive the OS files. Since Systest has no documentation of the events that are taking place being expected, and AutoMARK is reporting a different result should be observed all together, the test board would like to receive the OS files on the device and ALL AutoMARK specific files to load onto the device.

Item #3 to AutoMARK – this still has to be observed. Our information so far leads us to believe that the AutoMARK cannot operate without the AutoMARK and AutoMARK Service folders (containing the firmware).

Item #4 – still needs to be addressed through the response of item #1.

I anticipate that you will be working with Paul and his staff on this during the next few days. We are available to discuss this, but since we are on the third attempt with the AutoMARK device, I would propose that a developer from AutoMARK be brought on-site with all of the programs and files that the state needs to complete this trusted build process. As I mentioned on Friday, we are drawing close to a point where we must begin functional testing and move on. This issue will need to be resolved for this to happen. When is the next opportunity for you to make this happen with our office?

In the interim, we have received your OS and COTS disks and are beginning the installation process of those. If all goes well we will have this portion completed today.

Please let me know how you plan to proceed as soon as possible.

Thanks,  
John G.

*5bc  
single  
board  
computer*

*Give them a  
image of before +  
after of CF.*

6/27/2007

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**From:** Flowers, Darwin [mailto:dflowers@essvote.com]  
**Sent:** Friday, June 22, 2007 2:25 PM  
**To:** John Gardner  
**Subject:** FW: Colorado Questions

**Darwin W. Flowers**  
**State Certification Manager**  
**Election Systems & Software, Inc.**  
**11208 John Galt Blvd.**  
**Omaha, NE, 68132**  
**direct:402-970-1129**  
**toll-free:800-247-8683**  
**fax:402-970-1276**

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**From:** Paul Holly  
**Sent:** Friday, June 22, 2007 2:16 PM  
**To:** Sean Brockhouse  
**Subject:** RE: Colorado Questions

Hi Sean,  
Darwin is in a huge hurry to get these questions answered. Please forward my answers to Darwin, Steve Pearson, and John Gardner from the state after review.

Thanks

-----  
Hi Darwin,

1) The files that are used to update the files on the internal memory of the AutoMARK are compressed and stored in the .CAB file on the Compact Flash card. These files were created during an observed compile conducted in the presence of SysTest. The files were then compressed into the .CAB file also in the presence of SysTest. During the upgrade process, files are not moved off the compact flash card, but rather uncompressed and copied to the internal memory of the AutoMARK. The upgrade contains the files that have changed in the system between 1.0.168 and 1.1.2258. The .cab file is not altered during this process and the same CF card can be used to upgrade additional units. Nonvolatilelibrary.dll is one of the files that changed between the 1.0.168 and 1.1.2258 versions. The version of that DLL in 1.0.168 was 1.0.106, and the version in 1.1.2258 is 1.0.111.

2) There are Operating System files and COTS (Commercial off the shelf) application files that will not be affected by the upgrade process.

3) Once the upgrade is complete, all application files are located in the internal memory of the AutoMARK. During operation of the unit, only election data is located in the Compact Flash card. The application runs from internal memory and uses the election data from the flash card. No applications run from the Compact Flash card.

4 c) Trusted build files are copied (not moved) off the Compact Flash card during the upgrade process. The upgrade files are unaffected, and can be used to update another unit.

Thanks,  
Paul Holly

6/27/2007

AutoMARK Technical Systems

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**From:** Flowers, Darwin [mailto:dflowers@essvote.com]  
**Sent:** Fri 6/22/2007 12:01 PM  
**To:** Paul Holly  
**Cc:** Pearson, Steve  
**Subject:** Colorado Questions

Paul,

Below is the list of questions from John Gardner from the CO SOS office concerning the AutoMARK discrepancies. These questions were generated after he read the email from Sascha Davis (SysTest) containing your answers to their original questions:

- 1) We need to understand comment #1 from Sascha stating "files are moved off compact flash card" – one file "nonvolatilelibrary.dll" was added to the flash compare. Why is this?
- 2) Without supporting documentation, the test board needs certain operating system files to load and compare results to the machine.
- 3) We need to understand the relationship of the operating system, application and election data. What is running from the hardware memory and what is running from the compact flash memory?
- 4) If the trusted build files are moved off compact flash, how does this impact uploading other devices with the same compact flash card?

If you can answer these questions ASAP I would appreciate it as I have a feeling more questions are going to be generated. Paul, I really appreciate your help with this situation.

Thanks,

**Darwin W. Flowers**  
**State Certification Manager**  
**Election Systems & Software, Inc.**  
**402-970-1129**  
**800-247-8683**  
**Fax:402-970-1275**

View a Flash demonstration featuring the *intElect Electronic PollBook* delivered through the PS100:

<http://www.essvote.com/HTML/products/intElect.html>

6/27/2007

## Michael Chadwell

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**From:** John Gardner  
**Sent:** Monday, June 25, 2007 11:34 AM  
**To:** Flowers, Darwin  
**Cc:** Tim Bishop; Geneice Mathews; Michael Chadwell; Melanie Stuart  
**Subject:** FW: ES&S Missing COTS/Driver Items

Darwin, can you arrange to have the additional items needed sent to our office, and arrange a time when you would like to move forward with the election management software install.

Thanks,  
John G.

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**From:** Geneice Mathews  
**Sent:** Monday, June 25, 2007 11:27 AM  
**To:** John Gardner  
**Subject:** ES&S Missing COTS/Driver Items

John,

I have reinstalled Windows XP, SP2, Adobe Type Manager, COBOL WOW, Omni Drive and Office 2003. I cannot install Acrobat Standard 7.0 and RM COBOL Runtime System v7.50.01 given that there are no security keys supplied for those items. In regards to the ES&S system requirements doc it lists that we need the following items which are missing from the COTS cd we received this morning: Acrobat Distiller 6.0, PC Card Manager/PCM v.1.3 (1.60), Crystal Reports v.9.0, Java 2 Runtime Environment SE, MYSQL 4.1.10a, Pro Ethernet Adapter and Software. I am also missing drivers for the Ethernet Controller, Network Controller, 02 Micro Smart Card Bus Reader, PCI Modem and Video Controller.

Thank you,  
Geneice

Geneice Mathews  
Voting Systems Technician  
Colorado Department of State  
1700 Broadway, Ste 270  
Denver, CO 80290

### 3 SYSTEM IDENTIFICATION

The ES&S Unity 3.0.1.1 Voting System was submitted for qualification testing with the hardware and software listed below.

The ES&S Unity 3.0.1.1 Voting System TDP User/Owner manuals that would be part of the certified system delivered to a purchaser of the system are as follows:

**System Maintenance Procedures:**

- The iVotronic Voting System Maintenance Manual
- Model 650 Preventative Maintenance Manual v2.1
- Model 100 Precinct Count Preventative Maintenance Manual

**System Operation Procedures:**

- The iVotronic Voting System Operator's Manual, Version 1.0
- ES&S Model 100 Precinct Ballot Counter Operator's Manual, Version 1.0
- ES&S Model 650 Central Ballot Scanner Operator's Manual, Version 1.0
- Unity Election Data Manager User's Guide, Version 1.0
- ES&S Image Manager User's Guide, Version 7.4 3/2
- Unity iVotronic Image Manager User's Guide, Version 1.0
- Unity Ballot On Line User's Guide, Version 1.2 12/15/2005
- Unity Hardware Programming Manager User's Guide, Version 1.0
- Unity Data Acquisition Manager User's Guide, Version 1.0
- Unity Election Reporting Manager User's Guide, Version 1.0
- Optech Image Manager User's Guide, Version 4.0 3/21
- Limitations of Unity 3.0.1.1 System, 1.0 6/15/2006
- ES&S Compact Flash Multi-Card Reader/Writer Operator's Manual, Version 1.0

The ES&S AutoMARK Voting System TDP User/Owner manuals that would be part of the certified system delivered to a purchaser are as follows:

- AIMS 3010 Sect05 Election Officials Guide AQS-31-500
- AutoMARK Jurisdiction Guide AQS-31-5061-003-R
- AutoMARK Poll Workers Guide AQS-31-5061-002-R
- AutoMARK System Installation and Maintenance Guide AQS-31-5061-004-R
- AutoMARK Voters Guide AQS-31-5061-001-R



State of Colorado Voting System Certification Program  
**TRUSTED BUILD**  
 2007-CDOS-ESS-001-0403

v1.1 Dated 6/10/2005  
 dated 12/15/2005  
 dated 12/15/2005

106  
 1.5.2 11/20/2005  
 2.1 12/15/2005

2006

2005

12/13/2005

part of the certified

F

### 3.4 TDP Documents Used to Support Testing

The vendor documents used to support Qualification Testing are listed in Attachment E.

State of Colorado  
Department of State  
1700 Broadway  
Suite 250  
Denver, CO 80290



Mike Coffman  
Secretary of State

Holly Lowder  
Director of Elections

*CDOS Certification Number:* **2007-CDOS-ESS-001-0403**

*Manufacturer:* *ESS*

*Application Date:* *04/03/2007*

*Test Number*

AD1-P3 - 101

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Rule or Statute	2007-CDOS-ESS-001-0403	Test Number
45.4.7	If the EAC does not have a trusted build for the voting system submitted for certification, the voting system provider shall coordinate with the Secretary of State for the establishment of the trusted build. At a minimum this shall include a compilation of files placed on write-once media for which the Secretary of State has observed the chain of custody from time of source code compilation through delivery, and an established hash file distributed from a VSTL or the National Software Reference Library to compare federally certified versions against. All or any part of the Trusted Build disks may be encrypted. They should all be labeled as Proprietary Information if applicable and with identification of the vendor and release version based on the vendor's release instructions.	AD1-P3-101
<i>Cross Reference 1</i>		<i>Test Date</i>
		6/21/2007
<i>Cross Reference 2</i>		<i>Test End Date/Time</i>
		9/10/2007
<i>Cross Reference 3</i>		<i>Test Type (D-R-B)</i>
		Document
		<i>Eq Type</i>
		DRE
		<i>Equipment Model</i>
		iVotronic
		<i>Serial number</i>
		N/A
		<i>Manufacturer</i>
		ES & S

**Purpose:**

The Purpose of this test is to document and note the verification of the submittal of the trusted build software for the voting device.

**Prerequisites:**

Instructions for voting system vendors; AD3-P3-301

**Test Procedures:**

Record, secure and document the receipt of the trusted build from the VSTL/ITA's. Document the steps taken to install and verify the trusted build files.

**Variations Used During Testing:**

N/A

**Test Expected Outcome**

The voting system provider shall submit all items necessary for the creation and installation of files contained in the "trusted build" that is received from the VSTL or other source if applicable.





# Additional Observations and Findings

## Observations:

AD1 103  
 See notes on ~~AD1-P3-307~~. Also, refer to extensive video collection and attachments in binders 8a-8c. The testing board received the software necessary for the voting system component.

## Findings:

The voting system meets the test requirements.

1st Review

2nd Review

Supervisor Approval

Geneice Mathews

*Michael D. Chadwell*

John Gardner

Printed name

Printed name

Printed name

*Geneice Mathews*  
Signature

9-12-07  
Date

*Michael D. Chadwell*  
Signature

9-15-07  
Date

*John Gardner*  
Signature

9/17/07  
Date

State of Colorado  
Department of State  
1700 Broadway  
Suite 250  
Denver, CO 80290



Mike Coffman  
Secretary of State

Holly Lowder  
Director of Elections

*CDOS Certification Number:* **2007-CDOS-ESS-001-0403**

*Manufacturer:* *ESS*

*Application Date:* *04/03/2007*

*Test Number*

AD1-P3 - 102

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Rule or Statute	2007-CDOS-ESS-001-0403	Test Number
45.5.2.3.11	The trusted build of the voting system software, installation programs, and third party software (such as operating systems, drivers, etc.) used to install or to be installed on voting system devices shall be distributed on a write-once media.	AD1-P3-102
		<i>Test Date</i>
		6/21/2007
		<i>Test End Date/Time</i>
		9/10/2007
		<i>Test Type (D, F, B)</i>
		Functional
		<i>Eq Type</i>
		DRE
		<i>Equipment Model</i>
		iVotronic
		<i>Serial number</i>
		N/A
		<i>Manufacturer</i>
		ES & S

<p><b><u>Purpose:</u></b></p> <p>The Purpose of this test is to document and note the verification of the submittal of the trusted build software for the voting device.</p>	<p><b><u>Prerequisites:</u></b></p> <p>Instructions for voting system vendors.</p>
<p><b><u>Test Procedures:</u></b></p> <p>Record, secure and document the receipt of the trusted build from the VSTL/ITA's. Document the steps taken to install and verify the trusted build files.</p>	<p><b><u>Variances Used During Testing:</u></b></p> <p>N/A</p>

**Test Expected Outcome**

Any distribution of media used specifically for installing voting system is write-once only.





### Additional Observations and Findings

**Observations:**

See notes on ~~AD1-P3-301~~<sup>AD1 103</sup>. Also, refer to extensive video collection and attachments in binders 8a-8c. The testing board received the software on write-once media for the trusted build.

**Findings:**

The voting system meets the test requirements.

1st Review

2nd Review

Supervisor Approval

Geneice Mathews

Michael L. Crowder

John Gardner

Printed name

Printed name

Printed name



7-12-07  
Date

Michael O. Phadwell  
Signature

7-15-07  
Date



9/17/07  
Date

State of Colorado  
Department of State  
1700 Broadway  
Suite 250  
Denver, CO 80290



Mike Coffman  
Secretary of State

Holly Lowder  
Director of Elections

*CDOS Certification Number:* **2007-CDOS-ESS-001-0403**

*Manufacturer:* *ESS*

*Application Date:* *04/03/2007*

*Test Number*

AD1-P3 - 103

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<i>Rule or Statute</i>	<b>2007-CDOS-ESS-001-0403</b>	<i>Test Number</i>
45.5.2.3.12	The voting system shall allow the system administrative account to verify that the software installed is the certified software by comparing it to the trusted build or other reference information.	AD1-P3-103
<i>Gross Reference 1</i>		<i>Test Date</i> 6/21/2007
<i>Gross Reference 2</i>		<i>Test End Date/Time</i> 9/10/2007
<i>Gross Reference 3</i>		<i>Test Type (D/A/B)</i> Functional
		<i>Eq. Type</i> DRE
	<i>Equipment Model</i> iVotronic	
	<i>Serial number</i> N/A	
	<i>Manufacturer</i> ES & S	

<p><b><u>Purpose:</u></b></p> <p>The Purpose of this test is to verify the version of the trusted build once the installation process is complete.</p>	<p><b><u>Prerequisites:</u></b></p> <p>Instructions from voting system vendors.</p>
<p><b><u>Test Procedures:</u></b></p> <p>Document the process and findings of installation and verification of the trusted build software.</p>	<p><b><u>Variances Used During Testing:</u></b></p> <p>N/A</p>

*Test Expected Outcome*

System Administrative account has permissions to allow verification of trusted build against installed build.

SUPPORTED FILE TYPES  
.HEX  
.S  
.BIN  
.POF

Test Log  
Activities and Entries

IVOTRONIC.

9.1.6.2

firm - 2 files on trusted BOLD.

AR - Have to use for Recovery.

~~NO COMMANDS NECESSARY IF YOU CAN VERIFY BINARY OF~~

verified hash values of both files.

used CF. - first downgrade to 9.1.6.0  
verified no had 9162 first.

P  
↓ (CF, then PER)

~~ESC ESC~~  
Service/Setup. → SVC SVC - Setup & Config  
- CLEAR & test. → erase votes.

CLEAR & TEST → CLR CLR

AFTER CLEARING, FIRMWARE IS AVAILABLE.

FIRMWARE → UCF UCF (UP LOAD FIRMWARE)

MULTIPLE FIRMWARE IS ON EACH CARD.

Verify - Hold Vote button & Red PER  
Remove PER  
CLEAR ERROR

(NO METHOD OF VERIFYING FIRMWARE THINGS TO LOAD NEW FIRMWARE (ERS) TRUSTED BOLD COPY)

Verify firmware date & time stamp.

7/7/06 08:30AM - (CREATED DATE)

TURN ON RTA

FIRMWARE SER. ALWAYS 6 DIGITS

OVERWRITE → ESS ESS

COMPACT FLASH W/ FIRMWARE DOES NOT STAY IN IVOTRONIC - SLOT MUST BE SEARCHED HOWEVER

↑ PROGRAM IN EDM.

Test Log

The test log shall contain procedural steps used to conduct and evaluate the tests. At a minimum, these procedural steps shall include any items related to the setup, start, process, measurements, shut down, retarting, stop and restoring the system as necessary.

Date	Time	Operator	Activities or Comments	Incident Report
			1. Power on system	
			2. Check system status	
			3. Perform test procedures	
			4. Record test results	
			5. Shut down system	
			6. Restore system	
			7. Verify system operation	
			8. Complete test log	
			9. Sign test log	
			10. Review test log	
			11. Submit test log	
			12. End of test	

Continue to next page...

MOS in progress

Test Log

The test log shall contain procedural steps used to conduct and evaluate the tests. At a minimum, these procedural steps shall include any items related to the setup, start, process, measurements, shut down, retarding, stop and restoring the system as necessary.

Date	Time	Operator	Activities and Entries	Incident Reports
		NON ADA	3 button 15"	4 button 15"
		ONE	ONE	ONE
		4WD		TWO
		L	ser#: V5133649 2	Supervisor ONE
			HAS screen issues - LEFT SIDE DARKER THAN RIGHT SIDE.	
6/21	9:25		LOADING: V5148460 WITH AR FIRMWARE. ONE RAW FILE MAKES UP THE TOASTED BREAD FOR THE VOTRONIC.	
			* Refresher * - HAVE to downgrade first because firmware gets transferred from CF to EPROM. (SOLDERED MEMORY BANK ON MB OF DEVICE.)	
			<pre> graph LR     CF[CF] &lt;--&gt; TRANSFER  EPROM[EPROM]     EPROM --- Note[STAYS INSIDE]             </pre>	
			CAN BE REMOVED.	
			- TEST BOARD to verify through testing & SCHEMATICS the DATA on the three removable chips.	
			<p>HAD to use paperclip to press (or wire screw) to Reboot machine. (Photo Attached)</p> <p>IF CONTACT flash not fully inserted machine freeze on boot up. HAD to use "Reset button" to Reboot machine. (Photo Attached)</p> <p>Press firmware &amp; sys service</p> <p>U/F, U/F</p> <p>LOAD from COMPACT flash.</p> <p>Downgraded to 9140-AR firm. (PLACES IN TEMP STORAGE) ?</p>	
			<p>FIRST ATTEMPT FAILED AFTER 3 minutes - started over &amp; worked fine.</p> <p>THEN removed PCB &amp; Machine copied. FIRMWARE files to ONBOARD MEMORY.</p>	

Continue to next page...

Test Log			
Date	Time	Operator	Activities and Events
6/21	7:55A		"UPON BOOT UP WITH FDS (ONLY) Compact flash is Required. IF, upon error messages you insert CF, machine will lock up & require reset.
			Compact flash - possibly + require reset.
			Compact download version.
			Verified hash have & uploaded trusted BOLD 9162-AR - copy to RAM copy to perm. storage
			Booted to verify firmware & sealed machine.
6/21	10:15A		This finished TB for Wotonic.
9.17.07		Abad	For a listing of system passwords see evidence log 0915-ESS-0-08 or insert in binder 30

**Attachments**

Documents (list all documents)	No <input type="checkbox"/> Yes <input type="checkbox"/>	Videos (list all videos)	No <input type="checkbox"/> Yes <input type="checkbox"/>	Photos (list all photos)	No <input type="checkbox"/> Yes <input type="checkbox"/>
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**Acceptable Compensating Controls**

**Results Summary**

	<b>Final Test Status</b>
--	--------------------------

<b>1st Review</b>	<b>2nd Review</b>	<b>Supervisor Approval</b>
_____ Printed name	_____ Printed name	_____ Printed name
_____ Signature	_____ Signature	_____ Signature
_____ Date	_____ Date	_____ Date





## Additional Observations and Findings

### Observations:

See notes in test log. The voting system provider supplied the firmware for installation and the load requires an administrative level password. The testing board was unable to satisfactorily verify the installed software and was only able to perform a load of the trusted build.

### Findings:

The voting system failed to meet the requirements.

#### 1st Review

Geneice Mathews

Printed name

  
Signature

9-12-07  
Date

#### 2nd Review

Michael L. Caldwell

Printed name

  
Signature

9-12-07  
Date

#### Supervisor Approval

John Gardner

Printed name

  
Signature

9/17/07  
Date

F.B. ES+S 6-21-07

AD1 P3 103



Compact Flash

AND00000000808 MADE IN CHINA

Reset

V5148460->



State of Colorado  
Department of State  
1700 Broadway  
Suite 250  
Denver, CO 80290



Mike Coffman  
Secretary of State

Holly Lowder  
Director of Elections

*CDOS Certification Number:* **2007-CDOS-ESS-001-0403**

*Manufacturer:* *ESS*

*Application Date:* *04/03/2007*

*Test Number*

AD1-P3 - 104

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Rule or Statute	2007-CDOS-ESS-001-0403	Test Number
45.6.2.1.3	The proprietary software shall be installed on the workstation/server and all applicable voting system components by the testing board following the verification of the trusted build, and using the procedures provided by the voting system provider. After installation, the software and firmware shall be verified to the trusted build hash values.	AD1-P3-104
<i>Gross Reference 1</i>		<i>Test Date</i>
		6/21/2007
<i>Gross Reference 2</i>		<i>Test End Date/Time</i>
		9/10/2007
<i>Gross Reference 3</i>		<i>Test Type (D/F/B)</i>
		Functional
		<i>Eq Type</i>
	DRE	
	<i>Equipment/Model</i>	
	iVotronic	
	<i>Serial number</i>	
	N/A	
	<i>Manufacturer</i>	
	ES & S	

**Purpose:**

The Purpose of this test is to verify the version of the trusted build once the installation process is complete.

**Prerequisites:**

Instructions from voting system vendors.

**Test Procedures:**

Document the process and findings of installation and verification of the trusted build software.

**Variances Used During Testing:**

N/A

**Test Expected Outcome**

The testing board members successfully installed the "Trusted Build".





# Additional Observations and Findings

## Observations:

See notes in test log. The voting system provider supplied the firmware for installation and the load requires an administrative level password. The testing board was unable to satisfactorily verify the installed software and was only able to perform a load of the trusted build.

## Findings:

The voting system failed to meet the requirements.

1st Review

2nd Review

Supervisor Approval

Geneice Mathews

Michael L. Chadwell

John Gardner

Printed name

Printed name

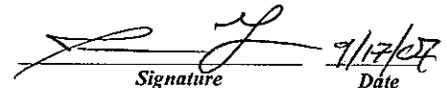
Printed name

  
Signature

9-12-07  
Date

  
Signature

9.15.07  
Date

  
Signature

9/17/07  
Date

State of Colorado  
Department of State  
1700 Broadway  
Suite 250  
Denver, CO 80290



Mike Coffman  
Secretary of State

Holly Lowder  
Director of Elections

*CDOS Certification Number:* **2007-CDOS-ESS-001-0403**

*Manufacturer:* *ESS*

*Application Date:* *04/03/2007*

*Test Number*

AD1-P3 - 105

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<b>2007-CDOS-ESS-001-0403</b>		<i>Test Number</i>
<i>Rule or Statute</i> 45.4.6	If the EAC has established a trusted build for the system submitted for certification, the trusted build shall be provided by the EAC. The voting system provider shall execute and submit to the EAC any necessary releases for the EAC to provide the same, and shall provide the Secretary of State's Office with a copy of such executed releases. In addition, the voting system provider shall submit all documentation and instructions necessary for the creation of and guided installation of files contained in the "trusted build" which will be created at the start of functional testing and will be the model tested against. The Secretary of State reserves the right to add additional instructions or guidance for the use of the trusted build when initiating the chain of custody process for a jurisdiction using the specified equipment.	AD1-P3-105
<i>Cross Reference 1</i>		<i>Test Date</i> 6/21/2007
<i>Cross Reference 2</i>		<i>Test End Date/Time</i> 9/10/2007
<i>Cross Reference 3</i>		<i>Test Type (D/F/B)</i> Document
		<i>Eq Type</i> DRE
		<i>Equipment Model</i> iVotronic
		<i>Serial number</i> N/A
		<i>Manufacturer</i> ES & S

<u><b>Purpose:</b></u> N/A	<u><b>Prerequisites:</b></u> N/A
<u><b>Test Procedures:</b></u> N/A	<u><b>Variances Used During Testing:</b></u> N/A
<i>Test Expected Outcome</i>	

The voting system provider shall submit all items necessary for the creation and installation of files contained in the "trusted build" that is received from the EAC if applicable.





# Additional Observations and Findings

Observations:

N/A

Findings:

The test is not applicable for the voting device, as the EAC does not yet have a trusted build developed for the system.

1st Review

2nd Review

Supervisor Approval

Geneice Mathews

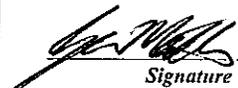
Michelle L. Chadwell

John Gardner

Printed name

Printed name

Printed name

  
Signature

9-12-07  
Date

  
Signature

9-12-07  
Date

  
Signature

9/17/07  
Date

State of Colorado  
Department of State  
1700 Broadway  
Suite 250  
Denver, CO 80290



Mike Coffman  
Secretary of State

Holly Lowder  
Director of Elections

*CDOS Certification Number:* **2007-CDOS-ESS-001-0403**

*Manufacturer:* *ESS*

*Application Date:* *04/03/2007*

*Test Number*

AD2-P3 - 201

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<b>Rule or Statute</b>	<b>2007-CDOS-ESS-001-0403</b>	<b>Test Number</b>
45.5.2.3.12	The voting system shall allow the system administrative account to verify that the software installed is the certified software by comparing it to the trusted build or other reference information.	AD2-P3-201
<b>Cross Reference 1</b>		<b>Test Date</b>
<b>Cross Reference 2</b>		6/21/2007
<b>Cross Reference 3</b>		<b>Test End Date/Time</b>
		9/10/2007
		<b>Test Type (D/F/B)</b>
		Functional
		<b>Eq Type</b>
		PCOS
		<b>Equipment Model</b>
		M100
		<b>Serial number</b>
		N/A
		<b>Manufacturer</b>
		ES & S

<p><b><u>Purpose:</u></b></p> <p>The Purpose of this test is to verify the version of the trusted build once the installation process is complete.</p> <p><b><u>Test Procedures:</u></b></p> <p>Document the process and findings of installation and verification of the trusted build software.</p>	<p><b><u>Prerequisites:</u></b></p> <p>Instructions for voting system vendors.</p> <p><b><u>Variations Used During Testing:</u></b></p> <p>N/A</p>
<p style="text-align: center;"><b><u>Test Expected Outcome</u></b></p> <p>System Administrative account has permissions to allow verification of trusted build against installed build.</p>	

# Additional Observations and Findings

## Observations:

One - CD PROVIDED BY SYSTEM LABS - UNENCRYPTED.

- ONE FILE WITH ALL HASH VALUES PROVIDED BY ITA

MICO - 3 FILES - PCM/HEX - VERIFIED HASH.

PC CARD MANAGER (SHAREWARE/FREEMWARE) 1.30 (FROM DOCUMENTATION).

PCM CIA FLASH TO UPGRADE MACHINE.

ATTEMPT - USED 30S BLANK PCMCIA CARD - COPIED HASH FILES ON TO CARD.

## Findings:

MICO HAS NO WAY TO VERIFY FIRMWARE, CAN ONLY LOAD FIRMWARE. (HASH OR CHECKSUM)

- Received Downgraded firmware (1 file) to verify install of new version.

• Hex (serial conversion.)

• PCM (PCMCIA) - USE PART ON FRONT.

File to check

(USE PC CARD MANAGER; check two boxes)

① Downgrade device - insert flash card w/ 5.2.0.0,

② upgrade to trusted build version 5.2.1.0

USE PCM FILE

(see notes in 202)

ALSO, HAVE TO USE OMNI-DRIVE

1st Review

2nd Review

Supervisor Approval

Printed name

Printed name

Printed name

Signature

Date

Signature

Date

Signature

Date

... (mirrored text) ...









# Additional Observations and Findings

## Observations:

See notes on test logs, the voting system prevented the testing board from verifying the version of the firmware installed on the system. The testing board can only load the trusted build on a device.

(BY WAY OF HASH OR CHECKSUM VALUES) *done*

## Findings:

The voting system does not meet the test requirements.

### 1st Review

Geneice Mathews

Printed name

*Gene Mathews*  
Signature

9-12-07  
Date

### 2nd Review

*Michael L. Chadwell*  
Printed name

*Michael L. Chadwell*  
Signature

9-15-07  
Date

### Supervisor Approval

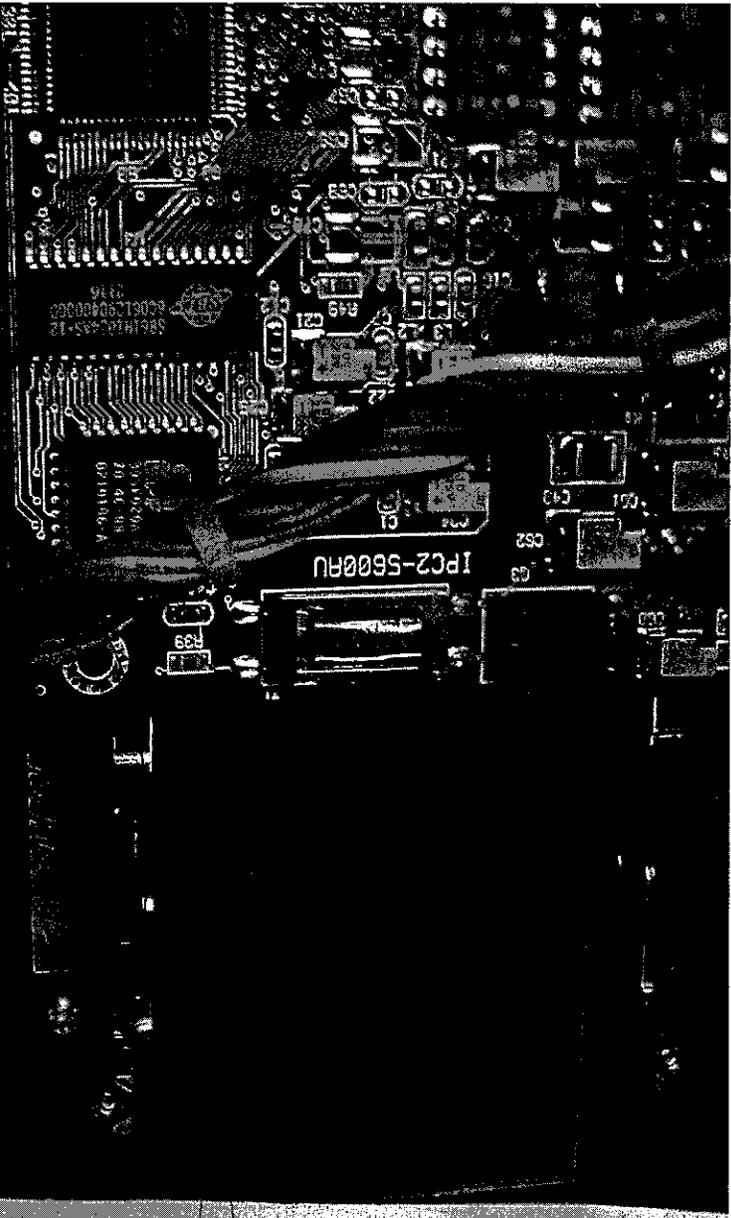
John Gardner

Printed name

*John Gardner*  
Signature

9/17/07  
Date

ESTS I.B. 6-7-2007

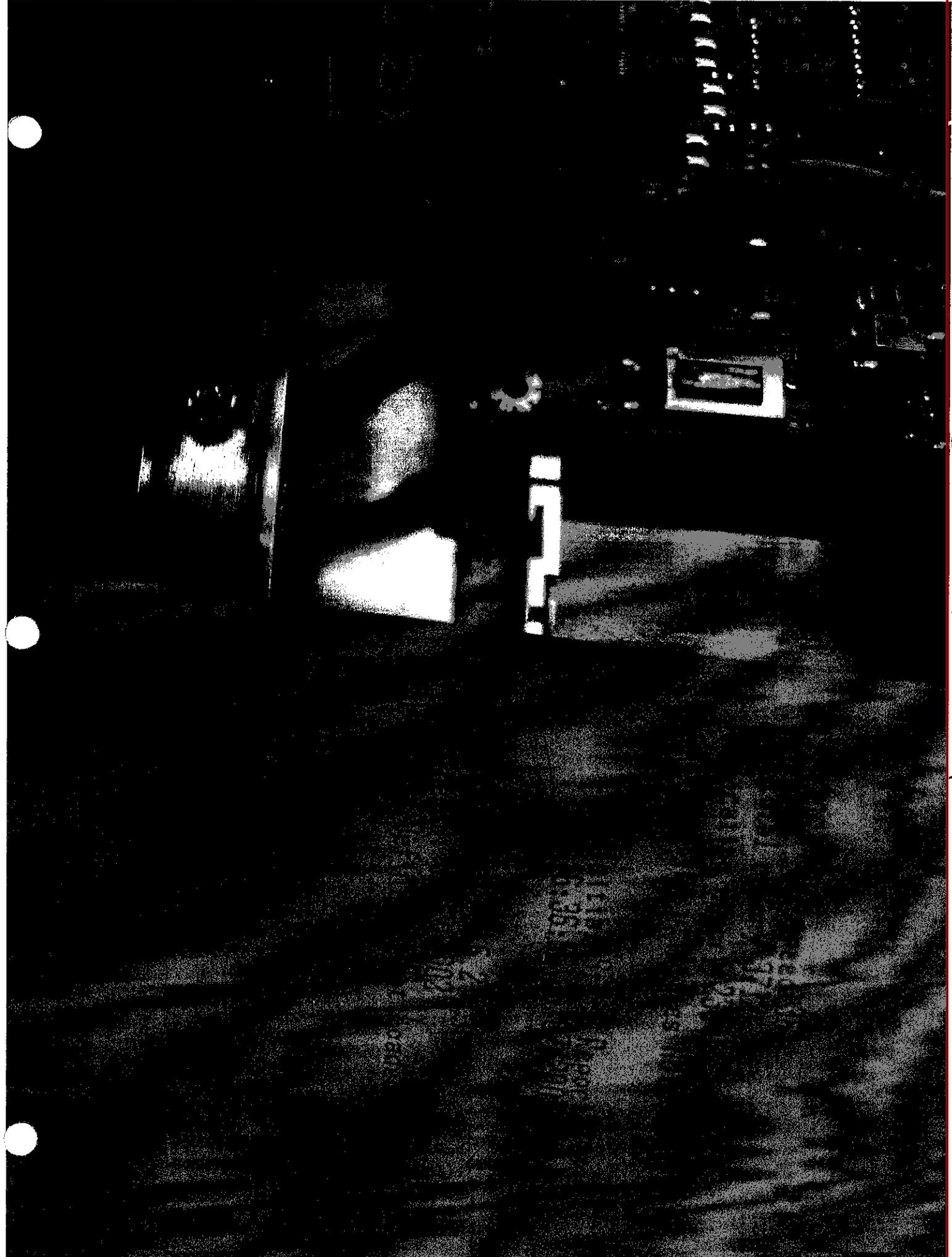


CPU 386 CPU speed 361  
CPU total memory 3112K  
Application memory 2384K  
Communication utilities N/A available

\*\*\* Initial State Report \*\*\*  
16:36:50 06/07/2007

Firmware Version: 5.2.0.0  
Machine ID: 3075998002  
Election Definition Not Loaded

CPU 386 CPU speed 361  
CPU total memory 3112K  
Application memory 2384K  
Communication utilities N/A available



ES+S T.B. 6-7-07

State of Colorado  
Department of State  
1700 Broadway  
Suite 250  
Denver, CO 80290



Mike Coffman  
Secretary of State

Holly Lowder  
Director of Elections

*CDOS Certification Number:* **2007-CDOS-ESS-001-0403**

*Manufacturer:* **ESS**

*Application Date:* **04/03/2007**

*Test Number*

AD2-P3 - 202

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Rule or Statute	2007-CDOS-ESS-001-0403	Test Number
45.5.2.3.11	The trusted build of the voting system software, installation programs, and third party software (such as operating systems, drivers, etc.) used to install or to be installed on voting system devices shall be distributed on a write-once media.	AD2-P3-202
		Test Date 6/21/2007
		Test End Date/Time 9/10/2007
Cross Reference 1		Test Type (D/F/B) Functional
Cross Reference 2		Eq Type PCOS
Cross Reference 3		Equipment Model M100
		Serial number N/A
		Manufacturer ES & S

**Purpose:**

The Purpose of this test is to document and note the verification of the submittal of the trusted build software for the voting device.

**Prerequisites:**

Instructions for voting system vendors.

**Test Procedures:**

Record, secure and document the receipt of the trusted build from the VSTL/ITA's. Document the steps taken to install and verify the trusted build files.

**Variances Used During Testing:**

N/A

**Test Expected Outcome**

Any distribution of media used specifically for installing voting system is write-once only.





## Additional Observations and Findings

**Observations:**

See notes on Ad2-P3-201. The voting system providers submitted the trusted build files as required.

**Findings:**

The voting system meets the test requirements.

**1st Review**

**2nd Review**

**Supervisor Approval**

Geneice Mathews

Printed name

Michael L. Chadwell

Printed name

John Gardner

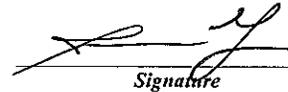
Printed name

  
Signature

9-12-07  
Date

  
Signature

9.15.07  
Date

  
Signature

9/17/07  
Date

State of Colorado  
Department of State  
1700 Broadway  
Suite 250  
Denver, CO 80290



Mike Coffman  
Secretary of State

Holly Lowder  
Director of Elections

*CDOS Certification Number:* **2007-CDOS-ESS-001-0403**

*Manufacturer:* **ESS**

*Application Date:* **04/03/2007**

*Test Number*

AD2-P3 - 203

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<b>Rule or Statute</b>	<b>2007-CDOS-ESS-001-0403</b>	<b>Test Number</b>
45.4.7	If the EAC does not have a trusted build for the voting system submitted for certification, the voting system provider shall coordinate with the Secretary of State for the establishment of the trusted build. At a minimum this shall include a compilation of files placed on write-once media for which the Secretary of State has observed the chain of custody from time of source code compilation through delivery, and an established hash file distributed from a VSTL or the National Software Reference Library to compare federally certified versions against. All or any part of the Trusted Build disks may be encrypted. They should all be labeled as Proprietary Information if applicable and with identification of the vendor and release version based on the vendor's release instructions.	AD2-P3-203
<b>Cross Reference 1</b>		<b>Test Date</b>
<b>Cross Reference 2</b>		6/21/2007
<b>Cross Reference 3</b>		<b>Test End Date/Time</b>
		9/10/2007
		<b>Test Type (D, F, B)</b>
		Document
		<b>Eq Type</b>
		PCOS
		<b>Equipment Model</b>
		M100
		<b>Serial number</b>
		N/A
		<b>Manufacturer</b>
		ES & S

**Purpose:**

The Purpose of this test is to document and note the verification of the submittal of the trusted build software for the voting device.

**Prerequisites:**

Instructions for voting system vendors.

**Test Procedures:**

Record, secure and document the receipt of the trusted build from the VSTL/ITA's. Document the steps taken to install and verify the trusted build files.

**Variances Used During Testing:**

N/A

**Test Expected Outcome**

The voting system provider shall submit all items necessary for the creation and installation of files contained in the "trusted build" that is received from the VSTL or other source if applicable.





# Additional Observations and Findings

Observations:

See notes on Ad2-P3-201. The voting system providers submitted the trusted build files as required.

Findings:

The voting system meets the test requirements.

1st Review

2nd Review

Supervisor Approval

Geneice Mathews

Michael L. Chadwell

John Gardner

Printed name

Printed name

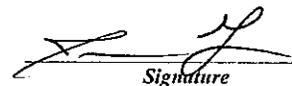
Printed name



9.12.07  
Date



9.15.07  
Date



9/17/07  
Date

State of Colorado  
Department of State  
1700 Broadway  
Suite 250  
Denver, CO 80290



Mike Coffman  
Secretary of State

Holly Lowder  
Director of Elections

*CDOS Certification Number:* **2007-CDOS-ESS-001-0403**

*Manufacturer:* *ESS*

*Application Date:* *04/03/2007*

*Test Number*

AD2-P3 - 204

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Rule or Statute	2007-CDOS-ESS-001-0403	Test Number
45.6.2.1.3	The proprietary software shall be installed on the workstation/server and all applicable voting system components by the testing board following the verification of the trusted build, and using the procedures provided by the voting system provider. After installation, the software and firmware shall be verified to the trusted build hash values.	AD2-P3-204
		Test Date
		6/21/2007
		Test End Date/Time
		9/10/2007
Cross Reference 1		Test Type (D/F/B)
		Functional
Cross Reference 2		Eq Type
		PCOS
Cross Reference 3		Equipment Model
	M100	
	Serial number	
	N/A	
	Manufacturer	
	ES & S	

**Purpose:**

The Purpose of this test is to verify the version of the trusted build once the installation process is complete.

**Prerequisites:**

Instructions for voting system vendors.

**Test Procedures:**

Document the process and findings of installation and verification of the trusted build software.

**Variations Used During Testing:**

N/A

**Test Expected Outcome**

The testing board members successfully installed the "Trusted Build".





## Additional Observations and Findings

### Observations:

See notes on test logs for AD2-P3-201, the voting system prevented the testing board from verifying the version of the firmware installed on the system. The testing board can only load the trusted build on a device.

(BY WAY OF HASH OR CHECKSUM VALUES) *loed*

### Findings:

The voting system does not meet the test requirements.

#### 1st Review

Geneice Mathews

Printed name

#### 2nd Review

*Michael L. Chowell*

Printed name

#### Supervisor Approval

John Gardner

Printed name

*Geneice Mathews*  
Signature

9/12/07  
Date

*Michael L. Chowell*  
Signature

9.15.07  
Date

*John Gardner*  
Signature

9/17/07  
Date

State of Colorado  
Department of State  
1700 Broadway  
Suite 250  
Denver, CO 80290



Mike Coffman  
Secretary of State

Holly Lowder  
Director of Elections

*CDOS Certification Number:* **2007-CDOS-ESS-001-0403**

*Manufacturer:* *ESS*

*Application Date:* *04/03/2007*

*Test Number*

AD2-P3 - 205

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Rule or Statute	2007-CDOS-ESS-001-0403	Test Number
45.4.6	If the EAC has established a trusted build for the system submitted for certification, the trusted build shall be provided by the EAC. The voting system provider shall execute and submit to the EAC any necessary releases for the EAC to provide the same, and shall provide the Secretary of State's Office with a copy of such executed releases. In addition, the voting system provider shall submit all documentation and instructions necessary for the creation and guided installation of files contained in the "trusted build" which will be created at the start of functional testing and will be the model tested against. The Secretary of State reserves the right to add additional instructions or guidance for the use of the trusted build when initiating the chain of custody process for a jurisdiction using the specified equipment.	AD2-P3-205
		<i>Test Date</i>
		6/7/2007
		<i>Test End Date/Time</i>
		9/10/2007
<i>Cross Reference 1</i>		<i>Test Type (D,F,B)</i>
		Document
<i>Cross Reference 2</i>		<i>Eq Type</i>
		PCOS
<i>Cross Reference 3</i>		<i>Equipment Model</i>
		M100
		<i>Serial number</i>
		N/A
		<i>Manufacturer</i>
		ES & S

<p><u>Purpose:</u></p> <p>N/A</p>	<p><u>Prerequisites:</u></p> <p>N/A</p>
<p><u>Test Procedures:</u></p> <p>N/A</p>	<p><u>Variations Used During Testing:</u></p> <p>N/A</p>

*Test Expected Outcome*

The voting system provider shall submit all items necessary for the creation and installation of files contained in the "trusted build" that is received from the EAC if applicable.





## Additional Observations and Findings

Observations:

N/A

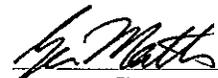
Findings:

The test is not applicable for the voting device, as the EAC does not yet have a trusted build developed for the system.

1st Review

Geneice Mathews

Printed name

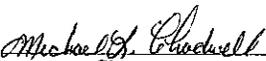
  
Signature

9/12/07  
Date

2nd Review

Michael L. Crowell

Printed name

  
Signature

9.15.07  
Date

Supervisor Approval

John Gardner

Printed name

  
Signature

9/17/07  
Date

State of Colorado  
Department of State  
1700 Broadway  
Suite 250  
Denver, CO 80290



Mike Coffman  
Secretary of State

Holly Lowder  
Director of Elections

*CDOS Certification Number:* **2007-CDOS-ESS-001-0403**

*Manufacturer:* *ESS*

*Application Date:* *04/03/2007*

*Test Number*

AD3-P3 - 301

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<i>Rule or Statute</i>	<b>2007-CDOS-ESS-001-0403</b>	<i>Test Number</i>
45.5.2.3.12	The voting system shall allow the system administrative account to verify that the software installed is the certified software by comparing it to the trusted build or other reference information.	AD3-P3-301
		<i>Test Date</i>
		6/21/2007
		<i>Test End Date/Time</i>
		9/10/2007
		<i>Test Type (D/R/B)</i>
		Functional
<i>Cross Reference 1</i>		<i>Eq Type</i>
		CCOS
<i>Cross Reference 2</i>		<i>Equipment Model</i>
		M650
<i>Cross Reference 3</i>		<i>Serial Number</i>
		N/A
		<i>Manufacturer</i>
		ES & S

**Purpose:**

The Purpose of this test is to verify the version of the trusted build once the installation process is complete.

**Prerequisites:**

Instructions for voting system vendors.

**Test Procedures:**

Document the process and findings of installation and verification of the trusted build software.

**Variances Used During Testing:**

N/A

**Test Expected Outcome**

System Administrative account has permissions to allow verification of trusted build against installed build.

Test Log

Date	Time	Operator	Activities and Entries	Incident Reports
6/6	11:20		<p>INSTALL WINZIP ZIP DISK. 10MB/A ZIP 250 (FORMAT TO FAT) ZIP 10/250</p> <p>Take files from HA - 4 files + folders. → (14 files total)</p> <p>"TGZ" file (compression format.)</p> <p><del>22008</del> 22008 DOWNGRADE/UPGRADE FOR 650 PRIOR TO CORDING TESTED BUILD.</p> <p>PLACE FILES ON ZIP DISK</p> <p>① TURN ON 650 - START. - VERIFY CURRENT VERSION (needs election files)</p> <p>② INSERT FLOPPY W/ DOWNGRADE/UPGRADE FIRMWARE VERSION NUMBER - MUST REBOOT W/ ELECTION DATA - CAN USE MIX USED ELECTION DATA. 2.2.0.A</p> <p>③ REBOOT MACHINE AFTER VERIFYING PRINTOUT OF WIRELESS #</p> <p>④ INSERT TESTED BUILD ZIP DISK. REBOOT INSERT ELECTION DATA FILES TO VERIFY. SEE ATTACHED NOTES</p>	











## Additional Observations and Findings

### Observations:

See notes in test log. Aside from not having an "administrative account" on the device, the voting system did not allow the testing board to satisfactorily verify the firmware that was loaded on the voting device. The testing board was able to load the firmware; however.

(BY WAY OF HASH OR CHECKSUM VALUES) elad

### Findings:

The voting system fails to meet this requirement.

#### 1st Review

Geneice Mathews

Printed name

  
Signature

9-12-07  
Date

#### 2nd Review

Michael L. Conrad

Printed name

  
Signature

9-15-07  
Date

#### Supervisor Approval

John Gardner

Printed name

  
Signature

9/17/07  
Date

State of Colorado  
Department of State  
1700 Broadway  
Suite 250  
Denver, CO 80290



Mike Coffman  
Secretary of State

Holly Lowder  
Director of Elections

*CDOS Certification Number:* **2007-CDOS-ESS-001-0403**

*Manufacturer:* *ESS*

*Application Date:* *04/03/2007*

*Test Number*

AD3-P3 - 302

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Rule or Statute	2007-CDOS-ESS-001-0403	Test Number			
45.6.2.1.3	The proprietary software shall be installed on the workstation/server and all applicable voting system components by the testing board following the verification of the trusted build, and using the procedures provided by the voting system provider. After installation, the software and firmware shall be verified to the trusted build hash values.	AD3-P3-302			
		<th data-bbox="1300 149 1507 184">Test Date</th> <td data-bbox="1300 184 1507 239">6/21/2007</td>	Test Date	6/21/2007	
		<th data-bbox="1300 239 1507 275">Test End Date/Time</th> <td data-bbox="1300 275 1507 329">9/10/2007</td>	Test End Date/Time	9/10/2007	
<th data-bbox="86 470 313 506">Cross Reference 1</th> <td data-bbox="1300 329 1507 420"> <th data-bbox="1300 329 1507 365">Test Type (D/R/B)</th> <td data-bbox="1300 365 1507 420">Functional</td> </td>		Cross Reference 1	<th data-bbox="1300 329 1507 365">Test Type (D/R/B)</th> <td data-bbox="1300 365 1507 420">Functional</td>	Test Type (D/R/B)	Functional
<th data-bbox="86 560 313 596">Cross Reference 2</th> <td data-bbox="1300 420 1507 510"> <th data-bbox="1300 420 1507 455">Eq Type</th> <td data-bbox="1300 455 1507 510">CCOS</td> </td>		Cross Reference 2	<th data-bbox="1300 420 1507 455">Eq Type</th> <td data-bbox="1300 455 1507 510">CCOS</td>	Eq Type	CCOS
<th data-bbox="86 651 313 686">Cross Reference 3</th> <td data-bbox="1300 510 1507 600"> <th data-bbox="1300 510 1507 546">Equipment Model</th> <td data-bbox="1300 546 1507 600">M650</td> </td>		Cross Reference 3	<th data-bbox="1300 510 1507 546">Equipment Model</th> <td data-bbox="1300 546 1507 600">M650</td>	Equipment Model	M650
		<th data-bbox="1300 600 1507 636">Serial number</th> <td data-bbox="1300 636 1507 690">N/A</td>	Serial number	N/A	
		<th data-bbox="1300 690 1507 726">Manufacturer</th> <td data-bbox="1300 726 1507 709">ES &amp; S</td>	Manufacturer	ES & S	

**Purpose:**

The Purpose of this test is to verify the version of the trusted build once the installation process is complete.

**Prerequisites:**

Instructions for voting system vendors.

**Test Procedures:**

Document the process and findings of installation and verification of the trusted build software.

**Variances Used During Testing:**

N/A

**Test Expected Outcome**

The testing board members successfully installed the "Trusted Build".





## Additional Observations and Findings

### Observations:

See notes in test log. Aside from not having an "administrative account" on the device, the voting system did not allow the testing board to satisfactorily verify the firmware that was loaded on the voting device. The testing board was able to load the firmware; however.

(BY WAY OF HASH OR CHECKSUM VALUES) *clad*

### Findings:

The voting system fails to meet this requirement.

#### 1st Review

Geneice Mathews

Printed name

*Geneice Mathews*  
Signature

9-12-07  
Date

#### 2nd Review

Michael H. Cusack

Printed name

*Michael H. Cusack*  
Signature

9.15.07  
Date

#### Supervisor Approval

John Gardner

Printed name

*John Gardner*  
Signature

9/17/07  
Date

State of Colorado  
Department of State  
1700 Broadway  
Suite 250  
Denver, CO 80290



Mike Coffman  
Secretary of State

Holly Lowder  
Director of Elections

*CDOS Certification Number:* **2007-CDOS-ESS-001-0403**

*Manufacturer:* *ESS*

*Application Date:* *04/03/2007*

*Test Number*

AD3-P3 - 303

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Rule or Statute	2007-CDOS-ESS-001-0403	Test Number
45.4.6	If the EAC has established a trusted build for the system submitted for certification, the trusted build shall be provided by the EAC. The voting system provider shall execute and submit to the EAC any necessary releases for the EAC to provide the same, and shall provide the Secretary of State's Office with a copy of such executed releases. In addition, the voting system provider shall submit all documentation and instructions necessary for the creation of and guided installation of files contained in the "trusted build" which will be created at the start of functional testing and will be the model tested against. The Secretary of State reserves the right to add additional instructions or guidance for the use of the trusted build when initiating the chain of custody process for a jurisdiction using the specified equipment.	AD3-P3-303
<i>Cross Reference 1</i>		<i>Test Date</i>
<i>Cross Reference 2</i>		6/7/2007
<i>Cross Reference 3</i>		<i>Test End Date/Time</i>
		9/10/2007
		<i>Test Type (D/F/B)</i>
		Document
	<i>Eq Type</i>	
	CCOS	
	<i>Equipment Model</i>	
	M650	
	<i>Serial number</i>	
	N/A	
	<i>Manufacturer</i>	
	ES & S	

<p><b><u>Purpose:</u></b></p> <p>N/A</p>	<p><b><u>Prerequisites:</u></b></p> <p>N/A</p>
<p><b><u>Test Procedures:</u></b></p> <p>N/A</p>	<p><b><u>Variances Used During Testing:</u></b></p> <p>N/A</p>

**Test Expected Outcome**

The voting system provider shall submit all items necessary for the creation and installation of files contained in the "trusted build" that is received from the EAC if applicable.





## Additional Observations and Findings

Observations:

N/A

Findings:

The test is not applicable for the voting device, as the EAC does not yet have a trusted build developed for the system.

1st Review

Geneice Mathews

Printed name

  
Signature

9-12-07  
Date

2nd Review

Michael L. Chadwell

Printed name

  
Signature

9-15-07  
Date

Supervisor Approval

John Gardner

Printed name

  
Signature

9/17/07  
Date

State of Colorado  
Department of State  
1700 Broadway  
Suite 250  
Denver, CO 80290



Mike Coffman  
Secretary of State

Holly Lowder  
Director of Elections

*CDOS Certification Number:* **2007-CDOS-ESS-001-0403**

*Manufacturer:* *ESS*

*Application Date:* *04/03/2007*

*Test Number*

AD3-P3 - 304

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Rule or Statute	2007-CDOS-ESS-001-0403	Test Number
45.4.7	If the EAC does not have a trusted build for the voting system submitted for certification, the voting system provider shall coordinate with the Secretary of State for the establishment of the trusted build. At a minimum this shall include a compilation of files placed on write-once media for which the Secretary of State has observed the chain of custody from time of source code compilation through delivery, and an established hash file distributed from a VSTL or the National Software Reference Library to compare federally certified versions against. All or any part of the Trusted Build disks may be encrypted. They should all be labeled as Proprietary Information if applicable and with identification of the vendor and release version based on the vendor's release instructions.	AD3-P3-304
		<i>Test Date</i>
		6/21/2007
		<i>Test End Date/Time</i>
		9/10/2007
<i>Cross Reference 1</i>		<i>Test Type (D,F,B)</i>
		Document
		<i>Eq Type</i>
<i>Cross Reference 2</i>		CCOS
		<i>Equipment Model</i>
		M650
		<i>Serial number</i>
<i>Cross Reference 3</i>		N/A
		<i>Manufacturer</i>
		ES & S

**Purpose:**

The Purpose of this test is to document and note the verification of the submittal of the trusted build software for the voting device.

**Prerequisites:**

Instructions for voting system vendors.

**Test Procedures:**

Record, secure and document the receipt of the trusted build from the VSTL/ITA's. Document the steps taken to install and verify the trusted build files.

**Variances Used During Testing:**

N/A

**Test Expected Outcome**

The voting system provider shall submit all items necessary for the creation and installation of files contained in the "trusted build" that is received from the VSTL or other source if applicable.





## Additional Observations and Findings

### Observations:

See notes in test log for AD3-P3-301. The voting system provider supplied the secured trusted build from the VSTL to the testing board.

### Findings:

The voting system meets the test requirements.

#### 1st Review

Geneice Mathews

Printed name

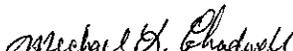
  
Signature

7/12/07  
Date

#### 2nd Review

Michael H. Chadwell

Printed name

  
Signature

9.15.07  
Date

#### Supervisor Approval

John Gardner

Printed name

  
Signature

9/17/07  
Date

State of Colorado  
Department of State  
1700 Broadway  
Suite 250  
Denver, CO 80290



Mike Coffman  
Secretary of State

Holly Lowder  
Director of Elections

*CDOS Certification Number:* **2007-CDOS-ESS-001-0403**

*Manufacturer:* *ESS*

*Application Date:* *04/03/2007*

*Test Number*

AD3-P3 - 305

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Rule or Statute	2007-CDOS-ESS-001-0403	Test Number
45.5.2.3.11	The trusted build of the voting system software, installation programs, and third party software (such as operating systems, drivers, etc.) used to install or to be installed on voting system devices shall be distributed on a write-once media.	AD3-P3-305
		<i>Test Date</i>
		6/21/2007
<i>Cross Reference 1</i>		<i>Test End Date/Time</i>
		9/10/2007
<i>Cross Reference 2</i>		<i>Test Type (D/F/B)</i>
		Functional
<i>Cross Reference 3</i>		<i>Eq Type</i>
		CCOS
		<i>Equipment Model</i>
		M650
		<i>Serial number</i>
		N/A
		<i>Manufacturer</i>
		ES & S

**Purpose:**

The Purpose of this test is to document and note the verification of the submittal of the trusted build software for the voting device.

**Prerequisites:**

Instructions for voting system vendors.

**Test Procedures:**

Record, secure and document the receipt of the trusted build from the VSTL/ITA's. Document the steps taken to install and verify the trusted build files.

**Variances Used During Testing:**

N/A

**Test Expected Outcome**

Any distribution of media used specifically for installing voting system is write-once only.





## Additional Observations and Findings

Observations:

The voting system provider supplied the trusted build on write-once media.

Findings:

The voting system meets the test requirements.

1st Review

Geneice Mathews

Printed name



Signature

9-12-07

Date

2nd Review

Michael L. Chadwell

Printed name



Signature

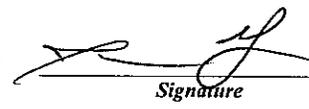
9.15.07

Date

Supervisor Approval

John Gardner

Printed name



Signature

9/17/07

Date

State of Colorado  
Department of State  
1700 Broadway  
Suite 250  
Denver, CO 80290



Mike Coffman  
Secretary of State

Holly Lowder  
Director of Elections

*CDOS Certification Number:* **2007-CDOS-ESS-001-0403**

*Manufacturer:* *ESS*

*Application Date:* *04/03/2007*

*Test Number*

AD4-P3 - 401

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Rule or Statute	2007-CDOS-ESS-001-0403	Test Number
45.6.2.1.3	The proprietary software shall be installed on the workstation/server and all applicable voting system components by the testing board following the verification of the trusted build, and using the procedures provided by the voting system provider. After installation, the software and firmware shall be verified to the trusted build hash values.	AD4-P3-401
		Test Date
		6/21/2007
		Test End Date/Time
		9/10/2007
Cross Reference 1		Test Type (D,F,B)
		Functional
Cross Reference 2		Eq Type
		Software
Cross Reference 3		Equipment Model
	Unity	
	Serial number	
	N/A	
	Manufacturer	
	ES & S	

**Purpose:**

The Purpose of this test is to verify the version of the trusted build once the installation process is complete.

**Prerequisites:**

Instructions for voting system vendors.

**Test Procedures:**

Document the process and findings of installation and verification of the trusted build software.

**Variations Used During Testing:**

N/A

**Test Expected Outcome**

The testing board members successfully installed the "Trusted Build".

Test Log			
Date	Time	Operator	Activities and Entries
10/25/07	8:50	Genevieve	Formatting Drive to install a new fresh install of operating system. Computer name: < ES-FS16851506BA
	10AM		Loaded new install of Windows XP Professional Version 2002 Service pack 2 INSTALL COTS PROGRAMS
	10:05		<ul style="list-style-type: none"> <li>• Install Adobe 7.0 <del>failed</del> need security key</li> <li>• Adobe Type Manager Added Fonts v4.1 Received error cannot load word fonts, have not installed Office yet.</li> <li>• Office 2003 (have product key)</li> <li>• <del>RM COBOL RT v 7.501 failed need security key</del></li> <li>• COBOL NOW RT v 3.12 installed</li> <li>• RM COBOL RT v 7.501 failed need security key</li> <li>• Omni Drive USB Professional</li> </ul>
01/29/07	09:00	Genevieve/Citro	To reestablish baseline of EMS SERVICE/WORKSTATION, the laptop is reformatted and the OS/COTS reinstalled. Windows XP: KEY: MW83T-MTYHT-6DTGT-PWT2J-K3WUWJ
	10:21		<ul style="list-style-type: none"> <li>- Adobe 7.0 Install, Complete install gives in directions, Activate via telephone received the following activation key after calling: 5857-2760-4345-0121-5933</li> <li>- Loading Office <sup>2003</sup> using key MKG74-BJ37J-3WZPK-VG9RF-QW5H0W</li> <li>- ADOBE TYPE MGR Lite 4.1 - INCOMPLETE ON FONTS (FONTS IN DIFFERENT FOLDER NAME - FONTS ADOBE)</li> <li>- RM COBOL: REQUIRES CHANGING SYSTEM DATE TO ALIGN WITH DATE IN LICENSING FILE.</li> <li>- COBOL NOW: ok</li> <li>- OMNIDRIVE: (PRO?) 1.72 (MUST DISABLE IN DEVICE MGR FIRST)</li> <li>- PC CARD MGR 1.30</li> </ul>
	11:25		<del>All OS/COTS installed, new HASH system for baseline not yet completed to SYSTEST list</del> <span style="float: right;">Chod</span>
	15:50		ISSUE OF ADOBE DISTILLER V.4.0 VS 7.0 resolved. SYSTEST will reissue docs to reflect 7.0. Performed baseline HASH on workstation pre-EMS load. "HASHCDRIVE.TXT"
07/02/07	09:30		Compare of module hashes: BAVOT ON LINO: OK, (v 1.2.0.0) (1 FILE) EDM: 7.4.4.0: OK, ERM 7.1.2.1: (13 FILE) = OK  ↑ (2 FILES)

The test log shall contain procedural steps used to conduct and evaluate the tests. At a minimum, these procedural steps shall include any items related to the setup, start, process, measurements, shut down, retarding, stop and restoring the system as necessary.

Date	Time	Operator	Activities and Entries	Incident Report
7.02.07	09:45	Genevieve/Alan	Performing compare of TB to ITA HASH: ESSIM 7.4.2.0 (2 FILES): OK, WDAM 6 WHPM 5.2.4.0 (13 FILES): OK	ADORE to Ad. 800-772-3628
	10:30	Genevieve/Alan	Performing software install: HPM - Hardware Program Manager: 1) SETUP.EXE → C:\APPS\ESS\HPM On the process of running HASHCMP, An exam of the hashed files showed the warehouse hash (OS + COTS) file was incomplete. Now the next step is to reformat and start over.	7348-5460- 1385-2542- 9501
	13:00	Genevieve/Alan	Laptop has OS and ADOBE Now loading MS OFFICE. Installing ADOBE TYPE MGR (NO INSTALL DOCUMENT FOR COTS.) HAVE TO ADD additional fonts. INSTALLED ALL POSSIBLE FONTS Received error trying to locate fonts after adding. <del>MS</del> Type Manager is looking for FONTS to be located in a different folder Used SKIP COMMAND - FORWARDED - they don't NEED ALL THE FONTS. SKIPPED NORTON ANTI-VIRUS INSTALL. MS OFFICE 2003 MEGAN - RIZZI - SWZTK - VDFRF - ANTHONY OFFICE S SUCCESSFUL Installing <del>the</del> OMNI DRIVE SOFTWARE. PROFESSIONAL PCM-SETUP HAD to be installed first (DISABLE DRIVE so it will work) LOADED PC CARD MANAGER	
	2:00		INSTALL RM COBOL - CHANGED the date to JULY 2, 2004. SYSTEM ASKED for activation CODES. CHANGED to September 24, 2004 - SYSTEM ALLOWED to go FORWARD.	

Continue to next page...

ESS

Environment  
ction - Voting - Post

2007-CDOS-~~9~~001-0403

Test Number  
AD4-P3 - 401

Date		Time	Operator	Test Log	Activities and Entries	Incident Reports
7-2		2:15 PM	John/TIM	COBOL WOLW		
				Reboot Prior to Hash		
				Hash C:\	1041 Directories 13,563 files	
				Audit Manager = 12 files (4 mms, db, 1s)	from System (INCLUDED IN HASH)	
				Matched * (Circled)		
				Copied to Laptop, compared Hash	ITM files → TRUSTED BUILD	
				(23) files in Copied folder		
				11 files were in ENGINE 32 folder		
				2 files were for the Hash - 9 DISCREPANCIES,	System produced Hash -	
				Matched * (Circled)	ITM of 9 files TRUSTED BUILD	
				Problem = CAB files expanded to:		
				installed to Laptop. (USED ALL DEFAULT SETTINGS)		
					<del>13,641</del> files 13,641	
		4:00 PM		107 mismatches after Audit Manager install.		
				All files		
				7 files could not be recovered - were		
				not included in System Hash Values.		
				(42) (Circled)		
		4:05 PM		Requested PST's to deliver expanded files.		
		10:22 AM				
7-5			Genevieve	Installing EDM - Red Hat		
				installs into C:\Unity folder, contains		
				two files bdm.sys and Schip.exe		
				having a hash on system now that		
				EDM is loaded.		

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Environment  
ction - Voting - Post

2007-CDOS-001-0403

Test Number  
AD4-P3 - 401

Test Log

The test log shall contain procedural steps used to conduct and evaluate the tests. At a minimum, these procedural steps shall include any items related to the setup, start, process, measurements, shut down, retarding, stop and restoring the system as necessary.

Date	Time	Operator	Activities and Entries	Incident Reports
			Files hashed 1077 directories 13809 files	
			Doing a hash compare with both EDM and Audit Manager loaded. 91 mismatched files.	
			EDM <del>not</del> loaded only in the EDM folder under Unity. Did a hash compare.	
			loading ESSIM and Access system	
			1083 directories 13918 files	
			Opened modules loaded at program and re-run hashing drive again and doing a compare with the last C drive hash.	
15-07	12:50	Genevieve	Reinstalling OS. Creating a partition Name CO- <del>at</del> State - Cont ing EPS	
			Addin COTS products to C: Drive ① Adobe ② Adobe Type Manager Light ③ Adobe Type Basics (different name) Added fonts so into Adobe + add browse folders grab fonts from PFM folder ④ MS office ⑤ Omni Drive (USB Pm) Omni Drive Driver Vander says to go into Device manager after its installed and to describe the device.	

Handwritten initials/signature

Continue to next page...

ESS

Environment  
ction - Voting - Post

2007-CDOS-~~001~~001-0403

Test Number  
AD4-P3.- 401

Test Log  
Date Time Operator Activities and Entries Incident Reports

⑥ RM/Cobol  
Needed to change date to license  
date and year. okay to load.

Receive a question "Schip has detected  
your system is currently configured with  
the following parameters enabled:  
Write Behind Optimization and  
Network Redirector File Caching. These  
parameters can cause file corruption or  
record locking problems." Install  
directories set to select <sup>yes</sup> to optimization  
question

⑦ COBOL Wov  
learn date and year the same  
(9-24-04) as <sup>detailed</sup> in installation  
instructions

Need to install Dell Drivers, ~~but~~  
waiting on vendor for CD.

2-D 11:30 JHV/GRACE Received Dell Drivers Disk from  
ES&S - processed my 3 .EXE files.

- R10404 .EXE (MODEM DRIVER)
- R114094 .EXE (PCMLA DRIVER)
- R133052 .EXE (NETWORK INTERFACE CARD)

selects YES on options, EVERYTHING ELSE WAS  
DEFAULT OPTIONS.

Rebooted Machine -

GENERATED BASELINE HASH VALUE.

14638 FILES ) BASELINE.  
1299 DIRECTORIES

12:30

NEW GHOST/IMAGE  
USED KORTIN GHOST -  
HIGHLIGHTED C,  
selected okay,  
Browser to F,  
make new folder.

EST

Test Log

The test log shall contain procedural steps used to conduct and evaluate the tests. At a minimum, these procedural steps shall include any items related to the setup, start, process, measurements, shut down, retarting, stop and restoring the system as necessary.

Date	Time	Operator	Activities and Entries	Incident Reports
7-10	12:20	JMW/CHAD/CHAD	SAVED IMAGE TO EDIAR D:\CDOS	
			(LAUNCHER) W/ DEFAULT SETTINGS - SHOULD TAKE 15 MINUTES TO BUILD BACKUP.	
			HAD TO UN-INSTALL 2003 GHOST DUE TO INCOMPATIBILITY ISSUES, INSTALLED GHOST 10.0	
			BQDK - DFD7 - CBDH - QDCT - R EB YG	
			Y7 J -	
			AFTER REINSTALL, RAN HASH - NEW VALUES =	
			1126 DIRECTORIES 149165 FILES	
			NOW REPERFORM GHOST TO E: DRIVE	
			AFTER ACTIVATION OF GHOST HAD TO INSTALL MICROSOFT .NET FRAMEWORK.	
7-11-07	14:00	GENE/CHAD	<p>Prepping to begin incremental HASH-install-HASH-install...          First HASH <sup>compare</sup> will be laptop baseline to ITA baseline          HASH_C_011007.TXT → I-HASH-WINDOWS-BASELINE.TXT          OUTPUT FILE: I-COMPARE → nope, can't do yet. The          HASH file from SYSTEST has been sorted and rearranged          so that HASHCMP is not able to process the file fields.          So we have to reformat the file in EXCEL then save          as TXT file → I-HASH-WINDOWS-MOD.TXT          Problem: our file is not in the same format as          the ITA file and our file has - ERROR entries among          the record lines and this appears to confuse HASHCMP.          Will begin anew tomorrow</p>	
7-11-07	09:00	GENE/CHAD	<p>Resuming. Given the issues with new HASHCMP.EXE works, the          ITA hash files have to be modified (revised) before comparing          RAN HASH CMP WITH JUST HASH VALUES -          13 - IN BASE, NOT IN AFTER THE BASE          69 - IN THE AUDIT MANAGER LOG FILE.</p>	<p>Continue to next page..</p>

ESS

Environment  
ction - Voting - Post

2007-CDOS-~~550~~-001-0403

Test Number  
AD4-P3 - 401

Date		Time	Operator	Activities and Entries	Incident Reports
7-11-07		12:45	John/James	NEXT STEPS - <del>then</del> install AUDIT MGR & then hash laptop.	
				to 30S system hashes to only have the hash values.	
				ITA Hash files comparing BASELINE TO AUDIT MGR install shows 69 files added.	
		13:15		Now install AUDIT MANAGER 7.3.0.0 on laptop. by running SWUP.exe. Install instruction indicates to accept default choices.	
				HASH C: -> AUDITINSTALL-071107.TXT SYSTEM now shows 15233 (before= 14865 Δ= 368 FILE 1 = C:\BASELINE.HASH FILE 2 = AUDITINSTALL-071107 => output file = COMPARE_1	
		14:55		Since there seems to be some question about file counts on C: at the time the baseline hash was taken (before or after Ghost files were installed), so rebuilding laptop from Ghost image. Hashing -> HASH-C-DRIVE2.TXT. This hash file shows 1247 directories/15233 files.	
				Now installing AUDIT MANAGER 7.3.0.0. Reboot... Hashing to file: AUDITINSTALL- <del>071107</del> <sup>071107</sup> .TXT, system now shows: 1263 dirs/15314 files Δ= 16 dirs/81 files	
		15:45		Now performing HASHCMP of our before/after 265 total mismatches 92 in 1 not in 2 173 in 2 not in 1	
				Now performing EXCEL compare of our after AM install to ITA after AM install.	
7-12-07		8:20	Genice	Discovered that ITA provided SHA1 hash codes rather than MD5. This changes our procedures and we will need to rehash the vendor computer at the baseline level with a SHA1 to do an accurate compare ⓐ Reimaged to baseline ⓑ Hashed ⓐ C drive with SHA1 and hashing ⓐ with MD5 to have both	
		8:50			



ESS

Date		Time	Operator	Activities and Entities	Incident Reports
				settings. Rebooting system and then hashing.	
			SHA1	File name 2-SHA1-EDM.txt files: 15429 and 1269 directories	
			MDS	File name 2-MDS-EDM.txt files 15429 and 1269	
				<del>SHA1</del> Adding ESSIM 7.4.20 instructions are put on one sheet with what to install and the order of the install, directions simply say "leave all items as default,"	
				Reboot, hashing	
			SHA1	File name 3-SHA1-ESSIM.txt files: 15485 and 1275 directories	
			MDS	File name 3-MDS-ESSIM.txt files: 15487 and 1275 directories	
				* Note remove files from <sup>shortcuts</sup> My Recent Documents when there are documents saved there.	
	11:17			Installing IVIM 2.0.10 Receive question on whether I would like to install MySQL it says "you must install MySQL on at least one computer." Select Yes next question "Do you wish to start MySQL db as a service? You must choose "Yes" if you plan on using this computer as a server for other computers." Select Yes next question "Do you wish to modify the Windows Internet Connection Firewall to allow other computers to access your MySQL IVIM database?" Select Yes Request a restart Yes/Okay.	

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Environment  
ction - Voting - Post I

2007-CDOS-~~550~~-001-0403

Test Number  
AD4-P3 - 401

Test Log

The test log shall contain procedural steps used to conduct and evaluate the tests. At a minimum, these procedural steps shall include any items related to the setup, start, process, measurements, shut down, retarding, stop and restoring the system as necessary.

Date	Time	Operator	Activities and Entries	Incident Reports
	12:40	Geneve	Removed F1 drive <del>and</del> / thumb drive doing a reboot received <del>an</del> a boot up (windows) error. Could not recover had to reimage to baseline <del>to</del> Did a refresh <del>to</del> of the c drive to ensure file count and directory count is the same. Counts match previous hash. Will move forward and install programs.	
	<del>13:50</del>		Install <del>EDM</del> Audit Manager	
			Install EDM	
			Install ESDIM	
	13:00		Install IVIM 2.0.10 Reboot machine and hashing SHA1 file name 4-SHA1-IVIM.txt files: 16648 and 1340 directories MDS file name files: 16648 and 1340 directories	
			Install HPM 5.2.40 No <del>for</del> full page document found for install directions, there is a direction page per installing software. <del>So</del> This directs the user to change the Program Group to Unity, and leave all other items as default. Reboot	
			SHA1 file name 5-SHA1-HPM.txt files: 16896 and 1346 directories MDS file name 5-MDS-HPM.txt files: 16896 and 1346 directories	
			Install DAM 6.0.0.0 or (WDAM) There is an install <del>of</del> document provided with the install of DAM. Instructions	

Continue to next page...

Date		Time	Operator	Activities and Entries	Incident/Reports
				are basic. Reboot	
				SHA1 file name 16966 files and 1353 directories 6-SHA1- MDS file name 6-MDA-DAM.txt 16966 files and 1353 dir. DAM.txt	
				Install ERM 7.1.21 / Hashing	
				SHA1 file name 7-SHA1-ERM.txt	
				1771 files and 1353 directories	
				MDS file name <del>6</del> 7-MDS-ERM	
				1771 files and 1353	
7-18		12:00	Genevieve	Vendor has decided to allow install of ITA certified witness build software to be installed in counties. Hash compares are <del>being</del> complete as of now. Able to begin functional testing.	
		14:00	Genevieve/Chris	Configuration of DAM. DAM functions as a module manager for unique laptop access and passwords and receiving/modem data, or sending.  Load election data onto laptop (ES+3). The election data CD provided by the vendor contains many unnecessary files including .EXE's that would replace trusted build programs. The vendor CD needs to be parsed to remove only election data OR the disc needs to be created with ONLY election data files. There are apparently several files/file types required to make up election data. So I have requested the vendor (DARWIN) to provide a listing of the files that make up the election data (for hash purposes and building HAXT exclusion lists).	
		15:15		Now creating ZIP drive to get m650 online. (*Note: must have ZIP disc installed prior to power-up)	
7.20.07			Genevieve/Chris	Uninstalling audio files for Ivotronics system and election sounds. folder (with included audio files) are as follows: all audio files are move into C:\ELEC\DATA\RECALL07 FLASH\ (359 files)	

Test Log

The test log shall contain procedural steps used to conduct and evaluate the tests. At a minimum, these procedural steps shall include any items related to the setup, start, process, measurements, shut down, retarting, stop and restoring the system as necessary.

Date	Time	Operator	Activities and Entries	Incident Reports
			<p>the Recall election and                      C:\ELEC\DATA\PRIMCO\7\FLASH\WAV (365 files)                      C:\ELEC\DATA\COORCO\7\FLASH\WAV (NOT YET REC'D)</p> <p>These are then transferred to a flash card for                      upload to the Intronix</p>	
8.27.07	09:20	Generic Chad	<p>Preparing to install AIMS for AutoMARK.</p> <p>Note: on the SYSTEST disc dated June 5, 2007, even though                      the disc indicates - AutoMARK AIMS 1.2.18, the disc                      does not actually contain program.</p>	
	09:30		<p>Moving AIMS files from CD (SYSTEST) dated June 29, 2007                      Will perform a pre-install HASH for comparison to SYSTEST                      values. 59 FOLDER/1768 (matches SYSTEST counts).                      SOS HASH FILE: AIMS.txt dtd 8/27/2007 @ 10:10</p>	
	10:20		<p>HASH of the install files on the SOS laptop all match                      up. Now moving Trusted BUILD to ESS's working laptop                      The instal process is following along with the provided                      documentation - Election Official's Guide, INSTALLING AIMS.                      During install process received error - SOURCE FILE                      NOT FOUND: D:\AIMS... PROMPTCR2.WAV (SEE SCREENSHOT)                      Choosing "Ignore" to proceed.</p> <p>A search of the working laptop did not show the file                      present but the file was present on the SOS laptop for                      the same version files. Need to determine reason...</p>	
	11:05		<p>Now performing a full systems HASH for future reference. (24959 files)                      SOS HASH FILE: 8-MS5-AIMS.txt 8/27/2007 @ 11:20 a.                      This includes the AIMS trusted build.</p> <p>The PromptCr2.wav file originated from a SYSTEST disc dated                      June 6 that was incomplete and was replaced by the                      June 29 disc.</p>	
9.17.07		Chad	<p>FOR A LISTING OF APPLICATION PASSWORDS, SEE                      EVIDENCE BAG 0915-ESS-C-68</p>	

Continue to next  
page..





## Additional Observations and Findings

### Observations:

See extensive notes in the test log. The testing board documented the attempts and procedures used for installing the trusted build software. All components were capable of being loaded from trusted disks, but the testing board was unable to verify any of the software loaded. - due to inadequate HASH information from DTA. Vendor elected to perform full TRUSTED Build field installs. There was too many install combinations and outcomes, both under lab and field conditions to create a usable HASH matrix. Vendor opted for clean field installs versus field compares to reference values. *Chad*

### Findings:

The voting system does not meet the test requirements.

1st Review

2nd Review

Supervisor Approval

Geneice Mathews

Michael L. Chadwell

John Gardner

Printed name

Printed name

Printed name

*Geneice Mathews*  
Signature

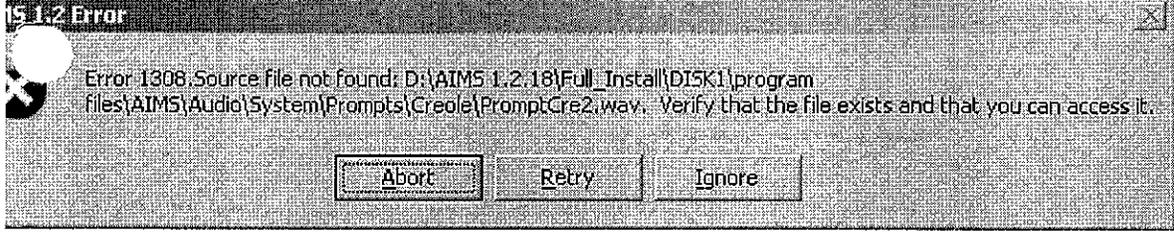
3/12/07  
Date

*Michael L. Chadwell*  
Signature

9.15.07  
Date

*John Gardner*  
Signature

7/17/07  
Date



AD4-P3-401

8.2.207

### 3.1 Software and Firmware

**Table 2 – Matrix of ES&S Unity 3.0.1.1 Voting System Software and Firmware**

Applications	Manufacturer	Version	Type
Audit Manager	ES&S	7.3.0.0	Pre-Voting
Election Data Manager	ES&S	7.4.4.0	Pre-Voting
ES&S Ballot Image Manager	ES&S	7.4.2.0	Pre-Voting
iVotronic Image Manager	ES&S	2.0.1.0	Pre-Voting
Optech Image Manager	ES&S	4.0.0.0	Pre-Voting
Ballot Online	ES&S	1.2.0.0	Pre-Voting
Hardware Programming Manager	ES&S	5.2.4.0	Pre-Voting
Data Acquisition Manager	ES&S	6.0.0.0	Post-Voting
Election Reporting Manager	ES&S	7.1.2.1	Post-Voting
iVotronic Firmware	ES&S	9.1.6.0 & 9.1.6.1	Voting
M100 Firmware	ES&S	5.2.1.0	Voting
M650 Firmware	ES&S	2.1.0.0	Voting
VAT	AutoMARK	1.1.2258	Voting
AIMS	AutoMARK	1.2.18	Voting
COTS Applications	Manufacturer	Version	Unity Application
Acrobat	Adobe	7.0 (Standard)	OPTIM, ESSIM & iVIM
Acrobat Distiller	Adobe	6.0	OPTIM, ESSIM & iVIM
Type Manager	Adobe	4.1	OPTIM, ESSIM & iVIM
Norton Antivirus Protection	Symantec	2005	N/A
RM COBOL Runtime System	Liant Software Corporation	7.50.01	HPM & ERM
COBOL WOW	Liant Software Corporation	3.12.00	HPM & ERM
PC Card Manager / PCM	Magic Ram	1.3(1.60)	HPM & ERM
Omni Drive USB Professional	CSM	1.72	HPM & ERM
Crystal Reports	Business Objects	9.0	EDM
Java 2 Runtime Environment, SE	Sun	1.4.2_08	OPTIM, ESSIM, iVIM, HPM, & ERM
MS Office (Standard Edition)	Microsoft	2003	ERM
MYSQL		4.1.10a or higher	iVIM
PRO Ethernet Adapter and Software	Intel®	-	DAM
RTAL	Future Logic	Firmware v.11	Printer for iVotronic

### 3.2 Equipment (Hardware)

**Table 3 – Matrix of Hardware**

Item	Manufacturer	O/S Version	Type
Election Management System			
Dell Optiplex gx260	Dell	Windows XP, SP2	Personal Computer
s/n # 7B0WL21			
SanDisk – Serial # 387273	CSM		
Omni Drive – Serial #3623-USB EMP11 – Serial # 004806			



D600\_AuditMgr\_Compare.txt

\*\*\*\*\*

Program:

hashcmp d:\ess\d600\_os\_hash-07-02-07.txt d:\ess\d600\_AuditMgr\_hash\_07-02-07.txt -o  
d:\ess\D600\_AuditMgr\_Compare.txt  
Mon Jul 02 22:12:54 2007 GMT, 15:12 Pacific Standard Time (PST/PST:8\*)

\*\*\*\*\* Comparing records in 1 not in 2

- ~~C:\...\Local Settings\History\History.IE5\MSHist012007070220070703\index.dat~~  
75EE2CFB63220457014033E0D5873B5B 32768 07/02/2007 13:45w PST
- ~~C:\...\Protect\S-1-5-21-1343024091-1580818891-1060284298-1003\Preferred~~  
B46385C90DADCAD4E2CC4F610FB33B01 24 07/02/2004 14:02w PST
- ~~C:\...\\_restore{DE017B7C-6CF8-4EF9-B2CA-FB09E1D7E417}\RP2\RestorePointSize~~  
F89E13014EBFAF1AD8622398E738C2FB 8 07/02/2007 13:50w PST
- ~~C:\...\\_restore{DE017B7C-6CF8-4EF9-B2CA-FB09E1D7E417}\RP3\change.log~~  
8D08D7E03C69E4DF3C93FFCF50D233E3 4094 07/02/2007 14:22w PST
- ~~C:\...\\_restore{DE017B7C-6CF8-4EF9-B2CA-FB09E1D7E417}\driver.cfg~~  
47F35E45DA7F9C96C5224DDE96A5877C 24 07/02/2007 14:22w PST
- ~~C:\...\\_restore{DE017B7C-6CF8-4EF9-B2CA-FB09E1D7E417}\drivetable.txt~~  
9F077DB23A9ABD9B7C9C51E4F4ED5B5C 132 07/02/2007 14:22w PST
- ~~C:\Documents and Settings\SOS\Local Settings\History\History.IE5\index.dat~~  
18A6504036A3C6D45E804B266F17B9DF 32768 07/02/2007 14:22w PST
- ~~C:\Documents and Settings\SOS\NTUSER.DAT~~  
- ERROR - FILE POSSIBLY LOCKED - 786432 07/02/2007 14:23w PST
- ~~C:\Documents and Settings\SOS\ntuser.dat.LOG~~  
- ERROR - FILE POSSIBLY LOCKED - 1024 07/02/2007 14:24w PST
- ~~C:\WINDOWS\Prefetch\CMD.EXE-087B4001.pf~~  
F5411E8301004060FA469474780632DD 10168 07/02/2007 14:23w PST
- ~~C:\WINDOWS\Prefetch\IMAPI.EXE-0BF740A4.pf~~  
08B2926EDCA737B0BECB627F526466EA 16060 07/02/2007 14:20w PST
- ~~C:\WINDOWS\Prefetch\LOGON.SCR-151EFAEA.pf~~  
8A0070FB4B6A58B6FDF49939BFFF68B0 5284 07/02/2007 12:04w PST
- ~~C:\WINDOWS\Prefetch\Layout.ini~~  
F98649D88D615EC1B6787C4FAD213A2F 75278 07/02/2007 12:09w PST
- ~~C:\WINDOWS\Prefetch\notepad.exe-336351A9.pf~~  
558222A6F869160277DD21081C8262B7 11452 07/02/2007 13:45w PST

Found the following entry in d:\ess\d600\_os\_hash-07-02-07.txt not in d:\ess  
\*\*\*\*\*

Program:

hashcmp d:\ess\d600\_os\_hash-07-02-07.txt d:\ess\d600\_AuditMgr\_hash\_07-02-07.txt -o  
d:\ess\D600\_AuditMgr\_Compare.txt -h  
Mon Jul 02 22:13:17 2007 GMT, 15:13 Pacific Standard Time (PST/PST:8\*)

\*\*\*\*\* Comparing records in 1 not in 2

D600\_AuditMgr\_Compare.txt

C:\WINDOWS\Prefetch\IMAPI.EXE-0BF740A4.pf  
08B2926EDCA737B0BECB627F526466EA 16060 07/02/2007 14:20w PST

~~C:\WINDOWS\system32\wbem\Logs\wbemess.log  
0D17C8F0976EAC4A032B644FC312F040 20052 07/02/2007 14:22w PST~~

~~C:\Documents and Settings\SOS\Local Settings\History\History.IE5\index.dat  
18A6504036A3C6D45E804B266F17B9DF 32768 07/02/2007 14:22w PST~~

~~C:\...\_restore{DE017B7C-6CF8-4EF9-B2CA-FB09E1D7E417}\\_driver.cfg  
47F35E45DA7F9C96C5224DDE96A5877C 24 07/02/2007 14:22w PST~~

~~C:\WINDOWS\setupapi.log  
5407E88FCC6C1EC1F0A4305E483B31E6 174447 07/02/2007 14:19w PST~~

C:\WINDOWS\Prefetch\NOTEPAD.EXE-336351A9.pf  
558222A6F869160277DD21081C8262B7 11452 07/02/2007 13:45w PST

~~C:\WINDOWS\system32\config\SysEvent.Evt  
58B245696D44F68042E1BF6A67E9E4CC 65536 07/02/2007 14:21w PST~~

C:\WINDOWS\Prefetch\RUNDLL32.EXE-451FC2C0.pf  
61A9F9D2574663C5BCFD4944095CBA6B 10982 07/02/2007 14:19w PST

~~C:\WINDOWS\system32\CatRoot\{F750E6C3-38EE-11D1-85E5-00C04FC295EE}\TimeStamp  
6D4C6D420D6C75DF6EF6E859E3793041 8 07/02/2007 04:16w PST~~

~~C:\WINDOWS\system32\CatRoot2\{F750E6C3-38EE-11D1-85E5-00C04FC295EE}\Timestamp  
6D4C6D420D6C75DF6EF6E859E3793041 8 07/02/2007 04:16w PST~~

C:\WINDOWS\system32\CatRoot2\{F750E6C3-38EE-11D1-85E5-00C04FC295EE}\catdb  
7294B28C2AF4DD509903BEBDEC5EE33D 3153920 07/02/2007 14:21w PST

~~C:\...\Local Settings\History\History.IE5\MSHist012007070220070703\index.dat  
75EE2CFB63220457014033E0D5873B5B 32768 07/02/2007 13:45w PST~~

~~C:\WINDOWS\system32\wbem\Repository\FS\MAPPING1.MAP  
834FCBBBD75300856D82FEFAB77E4BD1E 3108 07/02/2007 14:22w PST~~

C:\WINDOWS\Prefetch\LOGON.SCR-151EFAEA.pf  
8A0070FB4B6A58B6DF49939BFFF68B0 5284 07/02/2007 12:04w PST

~~C:\...\_restore{DE017B7C-6CF8-4EF9-B2CA-FB09E1D7E417}\RP3\change.log  
8D08D7E03C69E4DF3C93FFCF50D233E3 4094 07/02/2007 14:22w PST~~

~~C:\...\_restore{DE017B7C-6CF8-4EF9-B2CA-FB09E1D7E417}\drivetable.txt  
9F077DB23A9ABD9B7C9C51E4F4ED5B5C 132 07/02/2007 14:22w PST~~

D600\_AuditMgr\_Compare.txt

C:\WINDOWS\system32\CatRoot2\edb.chk 8192 07/02/2007 14:21w PST  
B255C2DA3F16C64E80173B1D5799B767

C:\...\Protect\S-1-5-21-1343024091-1580818891-1060284298-1003\Preferred 24 07/02/2004 14:02w PST  
B46385C90DADCAD4E2CC4F610FB33B01

C:\WINDOWS\Prefetch\CMD\_EXE-087B4001.pf 10168 07/02/2007 14:23w PST  
F5411E8301004060FA469474780632DD

~~C:\WINDOWS\system32\CatRoot2\edb.log 131072 07/02/2007 14:21w PST  
F7DAD833FF2F3D944E47B626481C0AAD~~

~~C:\...\\_restore{DE017B7C-6CF8-4EF9-B2CA-FB09E1D7E417}\RP2\RestorePointSize 8 07/02/2007 13:50w PST  
F89E13014EBFAF1AD8622398E738C2FB~~

C:\WINDOWS\Prefetch\Layout.ini 75278 07/02/2007 12:09w PST  
F98649D88D615EC1B6787C4FAD213A2F  
Found 22 mismatches  
End: Compare file records in 1 not in 2  
\*\*\*\*\* Comparing records in 2 not in 1

C:\WINDOWS\system32\MSFLXGRD.OCX 244416 05/22/2000 00:00w PST  
06EE7BB3C681B9FA8AF4280A154EE133

C:\WINDOWS\system32\sqlcnt.rsp 181 02/19/2002 16:18w PST  
07CA86E8C39CBAA5F0A799C276E0E0AB

C:\...\{CB72DB88-EA7E-11D7-9B99-0020ED72F2B0}\setup.ini 487 07/02/2007 14:58w PST  
08A22977E4DF6487BD9FCD175F7571E8

C:\WINDOWS\Prefetch\NOTEPAD\_EXE-336351A9.pf 19706 07/02/2007 14:31w PST  
0A830B30C905EC6ACCE79A1C874E87A0

C:\WINDOWS\system32\SYSTEMEO.OCX 67376 06/24/1998 00:00w PST  
0DB04D84B06F760BE7A852A8CFC20DF2

C:\...\\_restore{DE017B7C-6CF8-4EF9-B2CA-FB09E1D7E417}\drivetable.txt 132 07/02/2007 14:58w PST  
0F0DBB82003C9F459DCF6B3A6FA7D0E9

~~C:\WINDOWS\system32\CatRoot2\{F750E6C3-38EE-11D1-85E5-00C04FC295EE}\TimeStamp 8 07/02/2007 14:58w PST  
0FABA1BA74E499A6ECF6C1EB59053D1E~~

~~C:\WINDOWS\system32\CatRoot2\{F750E6C3-38EE-11D1-85E5-00C04FC295EE}\TimeStamp 8 07/02/2007 14:58w PST  
0FABA1BA74E499A6ECF6C1EB59053D1E~~

D600\_AuditMgr\_Compare.txt

C:\...\Protect\S-1-5-21-1343024091-1580818891-1060284298-1003\Preferred  
12501FC874A0FDE9F3BD04ED1D7D7B82 24 07/02/2007 14:57w PST

C:\...\Common Files\InstallShield\Professional\RunTime\0701\Intel32\igdi.dll  
150F19FFCF1C56E3C5F77EB712D0310B 163972 07/02/2007 14:57w PST

C:\...\{CB72DB88-EA7E-11D7-9B99-0020ED72F2B0}\\_setup.dll  
157884F3B1A35D2DBB09EE8F83A09CE6 155648 07/02/2007 14:57w PST

~~C:\...\InstallShield\Professional\RunTime\0701\Intel32\DotNetInstaller.exe  
19D3DC3C2159C407800D69089BA8CE3D 5632 12/02/2002 15:22w PST~~

C:\WINDOWS\Prefetch\DASETUP.EXE-0532D7BD.pf  
1A895E784AD022BAFF2134AF87BB7354 17060 07/02/2007 14:58w PST

~~C:\WINDOWS\system32\config\sysevent.EVT  
1CccC7470E0184F89257CB51E245EC32 65536 07/02/2007 14:21w PST~~

C:\Program Files\Common Files\DESIGNER\MSCDRUN.DLL  
20DD49575A1DF0C22E1ADFC0BA3EF7D6 49152 06/20/2003 10:54w PST

~~C:\...\Local Settings\History\History.IE5\MSHist012007070220070703\index.dat  
22775AFC433D410FD9478A657672059A 32768 07/02/2007 14:22w PST~~

~~C:\Documents and Settings\SOS\Local Settings\History\History.IE5\index.dat  
2361B09AD6AD9C9A9684204786A6C5D9 32768 07/02/2007 14:22w PST~~

~~C:\...\\_restore{DE017B7C-6CF8-4EF9-B2CA-FB09E1D7E417}\\_driver.cfg  
26C1E7A581E6B2F691E194FDC633865E 24 07/02/2007 14:58w PST~~

~~C:\...\RP4\snapshot\REGISTRY\_MACHINE\_SYSTEM  
26E0B687F3382B801F0D487D26E1356D 3186688 07/02/2007 14:58w PST~~

C:\WINDOWS\Prefetch\RUNDLL32.EXE-24C05E16.pf  
2859A9D18C5756F653F32F7A06A543B1 14832 07/02/2007 14:33w PST

~~C:\...\RP4\snapshot\REGISTRY\_USER\_USRCLASS S-1-5-19  
2ABAE026BF2D3D0D1BF254845B070F9F 8192 07/02/2007 14:58w PST~~

~~C:\WINDOWS\dasetup.log  
2C5C85DB53D07EA207B9206819BB8E68 17460 07/02/2007 14:58w PST~~

~~C:\WINDOWS\system32\wbem\Repository\FS\INDEX.MAP  
2DE86E5DD512688868CF47AC9A4AF47E 520 07/02/2007 15:00w PST~~

C:\Program Files\Uninstall Information\odbc.dat  
352798BE3068186ED0C45163DA3600DA 24 07/02/2007 14:58w PST

D600\_AuditMgr\_Compare.txt

C:\..\{CB72DB88-EA7E-11D7-9B99-0020ED72F2B0}\setup.ilg  
35340C1F3D587C71B8311E9FC808C50B 1033728 07/02/2007 14:58w PST

C:\WINDOWS\Prefetch\Layout.ini  
39FC1559132E836585EA86C24A51E215 142746 07/02/2007 14:48w PST

~~C:\..\{CB72DB88-EA7E-11D7-9B99-0020ED72F2B0}\setup.inx  
3AB4272521333F84C9EB8870C133FC60 172250 07/02/2007 10:45w PST~~

C:\Program Files\Common Files\DESIGNER\MSDERUN.DLL  
3CCF24E43E8E8D802E52E9C9990AE335 136192 06/20/2003 10:54w PST

C:\WINDOWS\system32\CatRoot2\{F750E6C3-38EE-11D1-85E5-00C04FC295EE}\catdb  
3FA9054973627C9444DCBDFD3BAFE7BD 3153920 07/02/2007 15:00w PST

~~C:\..\{CB72DB88-EA7E-11D7-9B99-0020ED72F2B0}\layout.bin  
40E20210BE3B6B3FF454F11968A1FA32 493 07/02/2007 10:45w PST~~

C:\..\{CB72DB88-EA7E-11D7-9B99-0020ED72F2B0}\setup.boot  
436FBDFE6EB92F4A82567A09BE075F5A 89 07/02/2007 14:58w PST

C:\WINDOWS\Prefetch\HASH.EXE-10C80050.pf  
43911951C2DD563199F264619DB80A56 25736 07/02/2007 15:03w PST

C:\..\\_REGISTRY\_USER\_USRCLASS\_S-1-5-21-1343024091-1580818891-1060284298-1003  
461B840E169BE83FB48975AA937B2EA1 8192 07/02/2007 14:58w PST

C:\WINDOWS\system32\VB5DB.DLL  
4C6F2D2CE86330335801F2982B26223E 89360 06/18/1998 01:00w PST

~~C:\Program Files\Common Files\InstallShield\Professional\Runtime\iKernel.rgs  
4DF94A4C0CD342707098E6662325DBF8 25830 12/02/2002 15:28w PST~~

~~C:\..\RP4\snapshot\REGISTRY\_MACHINE\_SOFTWARE  
564A226C1A3D7DA7415F76B4EA6C96BA 13783040 07/02/2007 14:58w PST~~

~~C:\WINDOWS\system32\wbem\Repository\FS\OBJECTS.MAP  
59AB06F2D7F59069B6B8791D0A6720DE 2588 07/02/2007 15:00w PST~~

~~C:\..\{CB72DB88-EA7E-11D7-9B99-0020ED72F2B0}\setup.exe  
5B2065FA6F2EC63FE28BE26FDB7B0480 107512 07/02/2007 10:45w PST~~

~~C:\..\RP4\snapshot\REGISTRY\_USER\_USRCLASS\_S-1-5-20  
5C5D14208739FBA58AB160EE5509CF8D 8192 07/02/2007 14:58w PST~~

C:\WINDOWS\Prefetch\RUNDLL32.EXE-451FC2C0.pf  
5C85B94CDAD4916F5488D98FE3A5DF3A 10982 07/02/2007 15:01w PST

D600\_AuditMgr\_Compare.txt

~~C:\... \{CB72DB88-EA7E-11D7-9B99-0020ED72F2B0}\data1.hdr~~  
60A71B679EDDC202F017F18B5820BD25 64772 07/02/2007 10:45w PST

~~C:\\_restore{DE017B7C-6CF8-4EF9-B2CA-FB09E1D7E417}\RP4\change.log~~  
64EE17AD11639661E39B809DFEE9F10D 8340 07/02/2007 14:58w PST

~~C:\WINDOWS\system32\wbem\Repository\Fs\MAPPING2.MAP~~  
6F0ED09E8ED84B39359DC48B4BCD65B5 3108 07/02/2007 15:00w PST

~~C:\WINDOWS\system32\MSADODC.OCX~~  
71C7C136133299694D21CD508EF88FFD 118976 05/22/2000 00:00w PST

~~..\Common Files\InstallShield\Professional\RunTime\0701\Intel32\iscript.dll~~  
742679327EE56723096EB5AA5928BE26 237568 12/02/2002 13:33w PST

~~C:\\_restore{DE017B7C-6CF8-4EF9-B2CA-FB09E1D7E417}\RP4\RestorePointSize~~  
74FA398BC8FA3A3131FB1398D01585A7 8 07/02/2007 14:58w PST

~~C:\\_restore{DE017B7C-6CF8-4EF9-B2CA-FB09E1D7E417}\RP2\RestorePointSize~~  
7614C2478DC0CC682C40620B11262048 8 07/02/2007 14:49w PST

~~C:\WINDOWS\Prefetch\SETUP.EXE-1D3AC6C5.pf~~  
78146D1613B51462D96ADD5ADAI67665 21368 07/02/2007 14:58w PST

~~C:\... \RP4\snapshot\\_REGISTRY\_MACHINE\_SAM~~  
781666AAE66149EF4A31C9D245A483AD 24576 07/02/2007 14:58w PST

~~C:\... \RP4\snapshot\\_REGISTRY\_MACHINE\_SECURITY~~  
7D3A2F12B11EFC93C4F3AD5231565A40 45056 07/02/2007 14:58w PST

~~C:\Documents and Settings\SOS\Recent\d600\_os\_hash-07-02-07.txt.lnk~~  
7F716949E3925E57AC7CB33CAE200D75 379 07/02/2007 14:31w PST

~~C:\WINDOWS\system32\COMCT332.OCX~~  
821AB1F1CF9904CB9026C686F13F0F05 415176 12/06/2000 00:00w PST

~~C:\... \Common Files\InstallShield\Professional\RunTime\0701\Intel32\ikernel.dll~~  
8230D489547E2F1C0AF852F81D1D63BE 696320 02/27/2003 16:12w PST

~~C:\... \Common Files\InstallShield\Professional\RunTime\0701\Intel32\iuser.dll~~  
85B1375725843284C7987B6BAD170BCC 155648 12/05/2002 14:10w PST

~~C:\\_restore{DE017B7C-6CF8-4EF9-B2CA-FB09E1D7E417}\RP4\rp.log~~  
8B21F1F24143ABF63E953DCE1AF8EF24 536 07/02/2007 14:58w PST

~~C:\WINDOWS\system32\wbem\Logs\wbemess.log~~

D600\_AuditMgr\_Compare.txt

8C8E78C46BAC5E9D3530CE74FF4DDA94 20244 07/02/2007 14:57w PST

C:\UNITY\AuditManager\AuditManager.exe  
8CEC56E5A03E7F67C55BC349097DE4C2 282624 09/07/2004 09:41w PST

C:\... \f2df30e7-134a-4395-9cb1-e9997ced839b  
8CF92BC5715280C41B7B3B872B220827 388 07/02/2007 14:57w PST

C:\WINDOWS\system32\MSSTDFMT.DLL  
92B712DF390367BFA4252A48D9D71D51 118784 07/15/2000 00:00w PST

C:\Program Files\Common Files\InstallShield\Professional\Runtime\IsProBE.tlb  
A1200142FFC51C3DDF558EE2A97F559F 85240 12/02/2002 13:23w PST

C:\WINDOWS\Prefetch\IMAPI.EXE-0BF740A4.pf  
AA7C2839A6816D7127A4919126A5DA55 16060 07/02/2007 14:57w PST

C:\... \RP4\snapshot\REGISTRY\_USER\_NTUSER\_S-1-5-19  
AAF4928D5BB9DFAB6000CCE081377F35 229376 07/02/2007 14:58w PST

C:\... \\_restore{DE017B7C-6CF8-4EF9-B2CA-FB09E1D7E417}\RP3\change.log.2  
AF0E380CB1BF2B5E0B07D876B59DE035 11566 07/02/2007 14:58w PST

C:\WINDOWS\setupapi.log  
B1804900FD6F322686991A715D75BA8C 176061 07/02/2007 14:58w PST

C:\Program Files\Common Files\Microsoft Shared\dasetup\rspfiles.inf  
B7EFFB18DC29BA1111B826E368218B96 1114 02/19/2002 16:41w PST

C:\WINDOWS\system32\MSCOMCT2.OCX  
C1B4AF41A0370E4081D59AC99BCC929D 647872 05/22/2000 01:00w PST

C:\Documents and Settings\SOS\Recent\ESS.Ink  
C360A85C700B6CA794FE6BC1A31D988F 237 07/02/2007 14:31w PST

C:\... \RP4\snapshot\REGISTRY\_USER\_NTUSER\_S-1-5-18  
D275FB7630E4516E56A26AA096D51220 237568 07/02/2007 14:58w PST

C:\... \RP4\snapshot\REGISTRY\_USER\_.DEFAULT  
D275FB7630E4516E56A26AA096D51220 237568 07/02/2007 14:58w PST

C:\WINDOWS\system32\mdacore.rsp  
D33E4CD06489CCCF6C716D3980B131AB 253 02/19/2002 16:18w PST

C:\Documents and Settings\All Users\Start Menu\Programs\Unity\Audit Manager.Ink  
D5592E855EAD0490C6A45FC4270CD174 1534 07/02/2007 14:58w PST

C:\WINDOWS\Prefetch\LOGON.SCR-151EFAEA.pf [redacted]\_Compare.txt  
D5A125F47654D729EC6AAB0CF92589DD 6866 07/02/2007 14:43w PST

C:\WINDOWS\Prefetch\MDAC\_TYP.EXE-04E75489.pf [redacted]  
D753E3AA42ACDFC9E1AD9EF71AB4C296 25846 07/02/2007 14:58w PST

C:\WINDOWS\system32\cmdlg32.ocx [redacted]  
D76F0EAB36F83A31D411AEAF70DA7396 140288 05/07/1999 01:00w PST

C:\UNITY\AuditManager\ea\sys.mde [redacted]  
D7A943D4ACEA7B55351D863C96C88AC0 233472 06/03/2004 14:36w PST

C:\WINDOWS\system32\MSBIND.DLL [redacted]  
D83ACAC0E10B2F3E67A047A64098CC3A 77824 07/15/2000 00:00w PST

~~C:\[CB72DB88-EA7E-11D7-9B99-0020ED72F2B0]data1.cab [redacted]  
DC0B670F32267D04FFC94460D9AEAC3A 598513 07/02/2007 10:45w PST~~

C:\..\Common Files\InstallShield\Professional\RunTime\0701\Intel32\setup.dll [redacted]  
E148C1132A32CCD424DE346F2FFEAD1F 282756 07/02/2007 14:57w PST

~~C:\..\Common Files\InstallShield\Professional\RunTime\0701\Intel32\ctor.dll [redacted]  
E3DB818ACA6889A18FEE5EBEF336D305 57344 12/02/2002 13:33w PST~~

~~C:\..\RP4\snapshot\REGISTRY\_USER\_NTUSER\_S-1-5-20 [redacted]  
E84BC13C9504C03E45F0694391068F73 225280 07/02/2007 14:58w PST~~

C:\WINDOWS\system32\CatRoot2\edb.chk [redacted]  
E87EE57135D7C85E87C6052916D94115 8192 07/02/2007 15:01w PST

C:\WINDOWS\system32\redist.rsp [redacted]  
EBD6A149652C0BFB110B41835333E44A 28 02/19/2002 16:18w PST

C:\WINDOWS\Prefetch\CMD.EXE-087B4001.pf [redacted]  
EFC547E3390C7D8DF3849886EDB8FD46 10168 07/02/2007 15:02w PST

~~C:\..\REGISTRY\_USER\_NTUSER\_S-1-5-21-1343024091-1580818891-1060284298-1003 [redacted]  
F55A4ED76442E7B9C44E0DD87B3CFF28 573440 07/02/2007 14:58w PST~~

~~C:\Program Files\Common Files\InstallShield\Professional\RunTime\Objectps.dll [redacted]  
F68BA4725D1AAF180FF33CF18D262C5E 32768 12/02/2002 13:33w PST~~

Found 85 mismatches  
End: Compare file records in 2 not in 1

Found 107 mismatches

\*\*\*\*\*

State of Colorado  
Department of State  
1700 Broadway  
Suite 250  
Denver, CO 80290



Mike Coffman  
Secretary of State

Holly Lowder  
Director of Elections

*CDOS Certification Number:* **2007-CDOS-ESS-001-0403**

*Manufacturer:* *ESS*

*Application Date:* *04/03/2007*

*Test Number*

AD4-P3 - 402

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<b>2007-CDOS-ESS-001-0403</b>		<i>Test Number</i>
<i>Rule or Statute</i> 45.5.2.3.12	The voting system shall allow the system administrative account to verify that the software installed is the certified software by comparing it to the trusted build or other reference information.	AD4-P3-402
		<i>Test Date</i> 6/21/2007
		<i>Test End Date/Time</i> 9/10/2007
<i>Cross Reference 1</i>		<i>Test Type (D,F,B)</i> Functional
		<i>Eq Type</i> Software
<i>Cross Reference 2</i>		<i>Equipment Model</i> Unity
		<i>Serial number</i> N/A
<i>Cross Reference 3</i>		<i>Manufacturer</i> ES & S

**Purpose:**

The Purpose of this test is to verify the version of the trusted build once the installation process is complete.

**Prerequisites:**

Instructions for voting system vendors.  
AD4-P3-401

**Test Procedures:**

Document the process and findings of installation and verification of the trusted build software.

**Variances Used During Testing:**

N/A

**Test Expected Outcome**

System Administrative account has permissions to allow verification of trusted build against installed build.





# Additional Observations and Findings

## Observations:

REF AD4-P3-401

See extensive notes in the test log. The testing board documented the attempts and procedures used for installing the trusted build software. All components were capable of being loaded from trusted disks, but the testing board was unable to verify any of the software loaded.

## Findings:

The voting system does not meet the test requirements.

1st Review

Geneice Mathews

Printed name

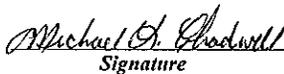
  
Signature

9/12/07  
Date

2nd Review

Michael H. Chadwell

Printed name

  
Signature

9.15.07  
Date

Supervisor Approval

John Gardner

Printed name

  
Signature

9/17/07  
Date

State of Colorado  
Department of State  
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Suite 250  
Denver, CO 80290



Mike Coffman  
Secretary of State

Holly Lowder  
Director of Elections

*CDOS Certification Number:* **2007-CDOS-ESS-001-0403**

*Manufacturer:* **ESS**

*Application Date:* **04/03/2007**

*Test Number*

AD4-P3 - 403

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Rule or Statute	2007-CDOS-ESS-001-0403	Test Number
45.5.2.3.11	The trusted build of the voting system software, installation programs, and third party software (such as operating systems, drivers, etc.) used to install or to be installed on voting system devices shall be distributed on a write-once media.	AD4-P3-403
		Test Date
		6/21/2007
		Test End Date/Time
		9/10/2007
Cross Reference 1		Test Type (D/F/B)
		Functional
Cross Reference 2		Eq Type
		Software
Cross Reference 3		Equipment Model
		Unity
		Serial number
		N/A
		Manufacturer
		ES & S

**Purpose:**

The Purpose of this test is to document and note the verification of the submittal of the trusted build software for the voting device.

**Prerequisites:**

Instructions for voting system vendors.

**Test Procedures:**

Record, secure and document the receipt of the trusted build from the VSTL/ITA's. Document the steps taken to install and verify the trusted build files.

**Variances Used During Testing:**

N/A

**Test Expected Outcome**

Any distribution of media used specifically for installing voting system is write-once only.





## Additional Observations and Findings

### Observations:

See notes in test log and extensive video records. The trusted build software was delivered from the ITA's on write-once media.

### Findings:

The voting system meets the test requirements.

#### 1st Review

Geneice Mathews

Printed name



Signature

9.12.07

Date

#### 2nd Review

Michael L. Chadwell

Printed name



Signature

9.15.07

Date

#### Supervisor Approval

John Gardner

Printed name



Signature

9/17/07

Date

State of Colorado  
Department of State  
1700 Broadway  
Suite 250  
Denver, CO 80290



Mike Coffman  
Secretary of State

Holly Lowder  
Director of Elections

*CDOS Certification Number:* **2007-CDOS-ESS-001-0403**

*Manufacturer:* *ESS*

*Application Date:* *04/03/2007*

*Test Number*

AD4-P3 - 404

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<b>2007-CDOS-ESS-001-0403</b>		<i>Test Number</i>
<i>Rule or Statute</i> 45.4.7	If the EAC does not have a trusted build for the voting system submitted for certification, the voting system provider shall coordinate with the Secretary of State for the establishment of the trusted build. At a minimum this shall include a compilation of files placed on write-once media for which the Secretary of State has observed the chain of custody from time of source code compilation through delivery, and an established hash file distributed from a VSTL or the National Software Reference Library to compare federally certified versions against. All or any part of the Trusted Build disks may be encrypted. They should all be labeled as Proprietary Information if applicable and with identification of the vendor and release version based on the vendor's release instructions.	AD4-P3-404
<i>Cross Reference 1</i>		<i>Test Date</i> 6/21/2007
<i>Cross Reference 2</i>		<i>Test End Date/Time</i> 9/10/2007
<i>Cross Reference 3</i>		<i>Test Type (D/F/B)</i> Document
		<i>Eq Type</i> Software
		<i>Equipment Model</i> Unity
		<i>Serial number</i> N/A
	<i>Manufacturer</i> ES & S	

**Purpose:**

The Purpose of this test is to document and note the verification of the submittal of the trusted build software for the voting device.

**Prerequisites:**

Instructions for voting system vendors.

**Test Procedures:**

Record, secure and document the receipt of the trusted build from the VSTL/ITA's. Document the steps taken to install and verify the trusted build files.

**Variances Used During Testing:**

N/A

**Test Expected Outcome**

The voting system provider shall submit all items necessary for the creation and installation of files contained in the "trusted build" that is received from the VSTL or other source if applicable.





## Additional Observations and Findings

Observations:

See notes in test log and extensive video records. The voting system provider supplied all of the necessary files for the completion of the trusted build.

Findings:

The voting system meets the test requirements.

1st Review

2nd Review

Supervisor Approval

Geneice Mathews

Michael L. Caldwell

John Gardner

Printed name

Printed name

Printed name

  
Signature

9/12/07  
Date

  
Signature

9.15.07  
Date

  
Signature

9/17/07  
Date

State of Colorado  
Department of State  
1700 Broadway  
Suite 250  
Denver, CO 80290



Mike Coffman  
Secretary of State

Holly Lowder  
Director of Elections

*CDOS Certification Number:* **2007-CDOS-ESS-001-0403**

*Manufacturer:* *ESS*

*Application Date:* *04/03/2007*

*Test Number*

AD4-P3 - 405

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Rule or Statute	2007-CDOS-ESS-001-0403	Test Number
45.4.6	If the EAC has established a trusted build for the system submitted for certification, the trusted build shall be provided by the EAC. The voting system provider shall execute and submit to the EAC any necessary releases for the EAC to provide the same, and shall provide the Secretary of State's Office with a copy of such excuted releases. In addition, the voting system provider shall submit all documentation and instructions necessary for the creation of and guided installation of files contained in the "trusted build" which will be created at the start of functional testing and will be the model tested against. The Secretary of State reserves the right to add additional instructions or guidance for the use of the trusted build when initiating the chain of custody process for a jurisdiction using the specified equipment.	AD4-P3-405
		Test Date
		6/7/2007
		Test End Date/Time
		9/10/2007
Cross Reference 1		Test Type (D, I, B)
		Document
Cross Reference 2		Eq Type
		Software
Cross Reference 3		Equipment Model
		Unity
		Serial Number
		N/A
		Manufacturer
		ES & S

<p><b><u>Purpose:</u></b></p> <p>N/A</p>	<p><b><u>Prerequisites:</u></b></p> <p>N/A</p>
<p><b><u>Test Procedures:</u></b></p> <p>N/A</p>	<p><b><u>Variances Used During Testing:</u></b></p> <p>N/A</p>

**Test Expected Outcome**

The voting system provider shall submit all items necessary for the creation and installation of files contained in the "trusted build" that is received from the EAC if applicable.





## Additional Observations and Findings

Observations:

N/A

Findings:

The test is not applicable for the voting device, as the EAC does not yet have a trusted build developed for the system.

1st Review

2nd Review

Supervisor Approval

Geneice Mathews

Printed name

Michael L. Chadwell

Printed name

John Gardner

Printed name



Signature

3.12.07

Date



Signature

7.15.07

Date



Signature

8/7/07

Date