

Tara Salas

From: John Gardner
Sent: Monday, August 27, 2007 12:26 PM
To: Lubthisophon, Paul; Geneice Mathews; Michael Chadwell; Tim Bishop
Cc: Gram, Kassie; Tara Salas
Subject: RE: Follow up - firmware load
Follow Up Flag: Follow up
Flag Status: Yellow

Paul, I did not receive a voicemail message from you.

Thanks,
John G.

From: Lubthisophon, Paul [mailto:PLubthisophon@hartic.com]
Sent: Monday, August 27, 2007 10:41 AM
To: John Gardner; Geneice Mathews; Michael Chadwell; Tim Bishop
Cc: Gram, Kassie
Subject: Follow up - firmware load

John Gardner

This is to follow up on the voicemail I sent this morning just before 0900. Kassie will be out of town and I will providing support should you need it this week to complete the software/firmware load on the equipment submitted for certification. When you are ready please feel free to call me to set a time.

Thank you, Paul

Paul Lubthisophon
Regulatory Compliance Specialist
Hart InterCivic - Colorado
303-531-4486 voice direct
303-385-6477 facsimile
plubthisophon@hartic.com

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8/27/2007

Tara Salas

From: Gram, Kassie [kgram@hartic.com]
Sent: Tuesday, August 21, 2007 9:17 AM
To: John Gardner; Tim Bishop
Cc: Tara Salas; Lubthisophon, Paul; Jerome Lovato; Michael Chadwell
Subject: FW: Still On?

Follow Up Flag: Follow up
Flag Status: Yellow

I forgot one thing - we were also hoping to pick up a tub that we attach to our eScan today. We have left two of them with you and would like to grab one today.

Thanks,
Kassie

-----Original Message-----

From: Gram, Kassie
Sent: Tuesday, August 21, 2007 9:03 AM
To: 'john.gardner@sos.state.co.us'; Tim Bishop
Cc: Tara Salas; Lubthisophon, Paul; Jerome Lovato; Michael Chadwell
Subject: RE: Still On?

No problem - no need to drop by then. We don't want to have any part of the funk you have going around.

I am around most of this week - if things clear up, we can stop in and get things rolling.

Thanks,
Kassie

-----Original Message-----

From: John Gardner [mailto:john.gardner@sos.state.co.us]
Sent: Tuesday, August 21, 2007 8:57 AM
To: Gram, Kassie; Tim Bishop
Cc: Tara Salas; Lubthisophon, Paul; Jerome Lovato; Michael Chadwell
Subject: Re: Still On?

Kassie, not sure what kind of funk is travelling around the office, but I do not have any staff here today to work on this. Everyones out still that are needed to move forward.

Thanks,
John G.

Sent via out of office e-mail response.

-----Original Message-----

From: "Gram, Kassie" <kgram@hartic.com>
Date: Tue, 21 Aug 2007 08:24:59
To: "John Gardner" <john.gardner@sos.state.co.us>, "Tim Bishop" <tim.bishop@sos.state.co.us>
Cc: "Tara Salas" <Tara.Salas@sos.state.co.us>, "Lubthisophon, Paul" <PLubthisophon@hartic.com>, "Jerome Lovato" <Jerome.Lovato@sos.state.co.us>, "Michael Chadwell" <Michael.Chadwell@sos.state.co.us>
Subject: RE: Still On?

John - Do you think you're available for us to stop by around 10:00am?

Thanks!

Kassie

-----Original Message-----

From: John Gardner [mailto:john.gardner@sos.state.co.us]
Sent: Monday, August 20, 2007 2:21 PM
To: Gram, Kassie; Tim Bishop
Cc: Tara Salas; Lubthisophon, Paul; Jerome Lovato; Michael Chadwell
Subject: RE: Still On?

Kassie, we should be okay to get back on track tomorrow. Can you check with me in the morning?.

Thanks,
John G.

-----Original Message-----

From: Gram, Kassie [mailto:kgram@hartic.com]
Sent: Monday, August 20, 2007 10:16 AM
To: John Gardner; Tim Bishop
Cc: Tara Salas; Lubthisophon, Paul; Jerome Lovato
Subject: FW: Still On?
Importance: High

John - Do you think you'll be ready for Paul and me to stop by either today or tomorrow?

I would really like to get you all started with functional testing. Specifically, Kodak is almost at their limit on the i830 scanner - the one that is at your office is our best chance at having one available. I MAY be able to get things extended until 8/31; but that is the last extension they are willing to give me.

Based on your schedule, please let me know if running 70,000 ballots through that scanner is possible by 8/30 (since that is the day they will actually pack things up).

Thank you,
Kassie

-----Original Message-----

From: Gram, Kassie
Sent: Wednesday, August 15, 2007 7:38 AM
To: 'john.gardner@sos.state.co.us'; Tim Bishop
Cc: Tara Salas; Lubthisophon, Paul; Jerome Lovato
Subject: RE: Still On?

Okay. Let me know what time you are available on Monday.

Thanks.
Kassie

-----Original Message-----

From: John Gardner [mailto:john.gardner@sos.state.co.us]
Sent: Tuesday, August 14, 2007 6:49 PM
To: Gram, Kassie; Tim Bishop
Cc: Tara Salas; Lubthisophon, Paul; Jerome Lovato
Subject: Re: Still On?

Okay, so we've had another change of plan due to staffing issues wed thir and Friday. We'll have to wait until Monday.

Sorry.

Thanks,
John G.

Sent via out of office e-mail response.

-----Original Message-----

From: "Gram, Kassie" <kgram@hartic.com>

Date: Tue, 14 Aug 2007 08:51:41

To: "John Gardner" <john.gardner@sos.state.co.us>, "Tim Bishop"
<tim.bishop@sos.state.co.us>

Cc: "Tara Salas" <Tara.Salas@sos.state.co.us>, "Lubthisophon, Paul"
<PLubthisopho.n@hartic.com>, "Jerome Lovato" <Jerome.Lovato@sos.state.co.us>

Subject: RE: Still On?

John - that's great news. Just to clarify, you have the PixData for the eSlate and an ini file for the eScan. We do not have any documentation on the PDI firmware used with 6.0. Per your request, CIBER provided an email regarding this.

I'm available tomorrow, but after 1:00pm. Will that work for you?

Thanks!

Kassie

From: John Gardner [mailto:john.gardner@sos.state.co.us]

Sent: Tuesday, August 14, 2007 8:28 AM

To: Gram, Kassie; Tim Bishop

Cc: Tara Salas; Lubthisophon, Paul; Jerome Lovato

Subject: RE: Still On?

Kassie, we are ready to move on. Prior to functional testing we need to still load the final configuration of the software, then install/verify the remaining components - JBC, eSlate, VBO. Additionally, we will use the PDI files we received regarding the eScan and make that functional as well.

It would be best to pick up at 11:00am on the next available day for you.

Please let me know what works best.

Thanks,

John G.

From: Gram, Kassie [mailto:kgram@hartic.com]

Sent: Friday, August 10, 2007 10:33 AM

To: John Gardner; Tim Bishop

Cc: Tara Salas; Melanie Stuart; Lubthisophon, Paul

Subject: RE: Still On?

John - Just checking in to see how are things coming along. Let me know when you're ready to set up the final configurations for functional testing. Or, of course, please let me know if there is any other support that I can provide.

Thanks,

Kassie

From: John Gardner [mailto:john.gardner@sos.state.co.us]

Sent: Tuesday, August 07, 2007 8:58 PM

To: Gram, Kassie; Tim Bishop

Cc: Tara Salas; Melanie Stuart; Lubthisophon, Paul
Subject: RE: Still On?

Thanks Kassie for the details. I'll have the team take a look at this and get back to you on it. We may need to wait to get together until we've had a chance to review this.
I'll let you know.

Additionally, were you expecting the recent CIBER submission to replace the current one that we have? If so, we'll need some time to compare this to the previous installs. Please let us know on this.

Thanks,
John G.

From: Gram, Kassie [mailto:kgram@hartic.com]
Sent: Tuesday, August 07, 2007 2:23 PM
To: John Gardner; Tim Bishop
Cc: Tara Salas; Melanie Stuart; Lubthisophon, Paul
Subject: RE: Still On?

John - I would like to start by noting that I have figured out why there are two versions of the eCM+SERVO+Tally configuration. This was a mistake and should have been Rally, not Tally. I have notified CIBER and they will be providing the hash values for this configuration using Rally. This is a Certification-specific configuration only and none of our customers use it currently.

I've consolidated your 5 files into one excel spreadsheet. Each tab has been named to closely match the report you have provided. As you will see, many of the files that CIBER has reported aren't part of the applications that were loaded. In fact, they are files carried over from the installation of some of the other Hart products. After discussing this with CIBER, it appears as though uninstalling and re-installing the Windows OS still leaves some folders on the system. When you use a ghost, as you have, it simply overwrites everything; this is why you don't have carry over files on your fresh install.

It is important to note two things: First, these are not required in the operation of the configurations in which they are considered "discrepancies". Second, during field validation, you will not see these files unless the customer has Ballot Now. For example, the Crystal Decisions folder (with its .dlls) is created with Ballot Now only. SERVO and Tally do not load Crystal Decisions in the same manner. Another example is found in those files that start with WINNT\system32\PIX.... these are also installed only with Ballot Now. You will not find these files on a county's workstation unless Ballot Now is installed.

On the other hand, the files in WINNT\PIXTRAN\ are installed with the i600 series scanner drivers. Unless the county is using an i600 scanner it is okay to move forward without these files.

There are a couple of additional files that I have detailed in the attached spreadsheet. Please review.

Please let me know if you have any further questions.
Kassie

From: John Gardner [mailto:john.gardner@sos.state.co.us]
Sent: Monday, August 06, 2007 8:11 PM
To: Gram, Kassie; Tim Bishop

Cc: Tara Salas; Melanie Stuart
Subject: RE: Still On?

Kassie, the following files are the output from each of the configurations. In each case, we narrowed down the list to what we feel are the Hart proprietary files, with the exception of the ad downloader file that is highlighted in each case that it appears (http://vil.nai.com/vil/content/v_101224.htm <http://vil.nai.com/vil/content/v_101224.htm>). In each case, these files were not on the SOS computers after our install, but were provided in the ITA install files.

Let me know what you think about these files.

Thanks,
John G.

From: Gram, Kassie [mailto:kgram@hartic.com]
Sent: Monday, August 06, 2007 9:43 AM
To: John Gardner; Tim Bishop
Subject: Still On?

John/Tim,

Are you ready to proceed with the final configuration for testing? As I mentioned last week, I'm available around 1:00pm.

Additionally, you mentioned that you had few more files that didn't match up. Do you need me to review any more files?

Thanks!
Kassie

Kassie Gram
Regulatory Compliance Manager
Hart InterCivic
303.385.8036
www.hartintercivic.com <<http://www.hartintercivic.com/>>

Melanie Stuart

From: Gram, Kassie [kgram@hartic.com]
Sent: Wednesday, August 08, 2007 7:15 AM
To: John Gardner; Tim Bishop
Cc: Tara Salas; Melanie Stuart; Lubthisophon, Paul
Subject: RE: Still On?

John - I'm still pretty open today, so let me know if you're ready sometime today.

You should have received a zipped file from Clive Robinson, at CIBER, yesterday around 3:30pm. He has also sent a CD copy of only the one install configuration that was missing. You should be receiving the CD today. As I mentioned, this configuration is only for certification testing.

Let me know when think you're getting close.

Thanks,
Kassie

-----Original Message-----

From: John Gardner [mailto:john.gardner@sos.state.co.us]
Sent: Tue 8/7/2007 8:58 PM
To: Gram, Kassie; Tim Bishop
Cc: Tara Salas; Melanie Stuart; Lubthisophon, Paul
Subject: RE: Still On?

Thanks Kassie for the details. I'll have the team take a look at this and get back to you on it. We may need to wait to get together until we've had a chance to review this. I'll let you know.

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8/8/2007

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Please let me know if you have any further questions.

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8/8/2007

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Kassie Gram

Regulatory Compliance Manager

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8/8/2007

Melanie Stuart

From: Gram, Kassie [kgram@hartic.com]
Sent: Tuesday, August 07, 2007 2:23 PM
To: John Gardner; Tim Bishop
Cc: Tara Salas; Melanie Stuart; Lubthisophon, Paul
Subject: RE: Still On?
Follow Up Flag: Follow up
Flag Status: Yellow
Attachments: File Discrepancies FROM SoS.xls

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Kassie

Kassie Gram
Regulatory Compliance Manager
Hart InterCivic
303.385.8036
www.hartintercivic.com

8/8/2007

BOSS + BN +Tally eCM

faa41353ab167e80c41fae9be406415c WINNT\system32
2178af0d57cee9798d50305c34ce7175 WINNT\system32

Modem
Dell Driver (Display)

Program code used by many photograph
editors and viewers, such as those
provided with some Canon cameras
Kodak driver .dll from Ballot Now

4fc074c3c6cf290bb2c11e5c31c97b27 WINNT\system32
36f6ecf466d5c2c70763aa07a6491f26 WINNT\system32
babf4a18746db9443ddb704ed18bf7fd WINNT\system32

Melanie Stuart

From: John Gardner
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Subject: RE: Still On?
Follow Up Flag: Follow up
Flag Status: Yellow
Attachments: ITA_to_SOS_Config7_ServerBn-output.xls; ITA_to_SOS_Config1_BossBNTallyECM-output.xls; ITA_to_SOS_Config2_BossECMTally-output.xls; ITA_to_SOS_Config3_ECMServo-output.xls; ITA_to_SOS_Config4_EcmServoTally-output.xls

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8/7/2007

7efdcfe63b78deca96d8548f22649192
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babf4a18746db9443ddb704ed18bf7fd

Program Files\Hart Intercivic\Ballot Now\Print Queue\F

WINNT\PIXTRAN

WINNT\PIXTRAN

WINNT\PIXTRAN

WINNT\PIXTRAN

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faa41353ab167e80c41fae9be406415c WINNT\system32
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fb229a8274b24e2e7e0df7f604b45cfc
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d43373cef3661d9c896ec28c0ff2be0e
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8f3d8ba2d33cf21ffbc34abc3429528b
9d5cfc58f7e1dc1b2cfcb3eed7baa96d
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WINNT\PIXTRAN\BGR2R

WINNT\PIXTRAN\BMP2F

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[illegible]

WINNT\system32\p
WINNT\system32\p
WINNT\system32\q



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|------------------|-----------|-----------|------------|-----------|-----------------|---------------------|------------------------|------------------|--------------|
| File Name | File Size | File Type | File Date | File Time | File Attributes | File Owner | File Group | File Permissions | File Content |
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| WINNT\system32\q | 1024 | Text | 2000-01-01 | 12:00:00 | Read-Only | NT AUTHORITY\SYSTEM | BUILTIN\Administrators | Full Control | ... |

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df9c245aaca47fb938d6a16d2acfd60a
486485b27b306cbbbd2d9762a310117c
dc861d393d3ba1a814f1a3389d155228
84804332c15a34710ffbd056759ddb48
950149b8e9038606433f7bf08275ce6b
e8482552987d78690f9ec8675cf46684
7c11fe6abd061b4cd872bb92760d5bbc
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463db1ce193101c8b78d548be8443244
4f5401999cc774f62d002452ad0ae8bf
598a50d52522dc3e7e6ba78b29ba4ea9
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00ba1a0345521aeb687e23ad209de9e4
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c5bee08aeebe78b29fac57b4013a4dd2
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9f885e995db1845528467a68a20df26e
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Melanie Stuart

From: John Gardner
Sent: Tuesday, July 31, 2007 8:30 PM
To: Tim Bishop; Jerome Lovato
Cc: Melanie Stuart
Subject: Hash List
Follow Up Flag: Follow up
Flag Status: Yellow

Tim,

Both the driverValidation.exe and the DriverInfo.xml files are part of the Ghost program. Refer to this link for details: <http://toggle.com/lv/software/virusreport/kl6052.htm>.

Thanks,
John G.

8/1/2007

Melanie Stuart

From: Gram, Kassie [kgram@hartic.com]
Sent: Wednesday, August 01, 2007 9:09 AM
To: John Gardner
Cc: Melanie Stuart
Subject: RE: Hash Compares
Follow Up Flag: Follow up
Flag Status: Yellow

John – That IS good news. Thank you for following up with it.

I'm sorry, but I don't have an answer for you yet. The keycode.dll is the manner in which Crystal Decisions provides the licensing of the product for customer use. I am going to run a few tests here to see if we can still run, print and export the reports without the keycode.dll. I will confirm with you shortly.

Yes, Friday will be fine. I will get back to you ASAP regarding this particular question.

Thanks,
Kassie

From: John Gardner [mailto:john.gardner@sos.state.co.us]
Sent: Tuesday, July 31, 2007 8:34 PM
To: Gram, Kassie
Cc: Melanie Stuart
Subject: Hash Compares

Kassie, I have a bit of good news. We rechecked the data that we had as discussed and found that two of the three files did exist on the other combination/installations. So we went back and installed tally again, and two of the three files appeared. We also confirmed why the files were disappearing from our exception list and showing up as not in the exception files, but this is a pretty irrelevant point now.

Additionally, we had 30 files on our original list – DLL's and other files that we've all confirmed to be fine with our new installation of tally.

The only trouble spot we have now is that the keycode.dll file (c:\..\program files\common files\crystal decisions\2.5\bin\keycode.dll) is the one unique instance where the files from the ITA have more records than what the SOS experienced.

If you can confirm that we DO NOT need this file for the correct operation of Tally, we can move forward with the next configuration evaluation. I talked with the testing board and we all still feel that we are on track to have all of these compares completed by end of day on Thursday if things move smoothly. I know we had previously discussed you coming back on Thursday, but it may be more appropriate to have you in on Friday for the next steps.

Let me know what you think and any insight you can provide into the keycode.dll file as previously discussed.

Thanks,
John G.

8/1/2007

Melanie Stuart

From: Gram, Kassie [kgram@hartic.com]
Sent: Wednesday, August 01, 2007 3:13 PM
To: John Gardner
Cc: Melanie Stuart; Tim Bishop
Subject: RE: Hash Compares

John – I have recreated the same set up and installation that you performed and ensured that this file is not present. I also ran a small election to ensure that Tally operates as expected even with out this file. It is okay to move forward without this file.

Please let me know if you run into any others in the subsequent configurations.
Thank you for your patience – I wanted to make sure that it was truly okay to move on.
Kassie

From: John Gardner [mailto:john.gardner@sos.state.co.us]
Sent: Tuesday, July 31, 2007 8:34 PM
To: Gram, Kassie
Cc: Melanie Stuart
Subject: Hash Compares

Kassie, I have a bit of good news. We rechecked the data that we had as discussed and found that two of the three files did exist on the other combination/installations. So we went back and installed tally again, and two of the three files appeared. We also confirmed why the files were disappearing from our exception list and showing up as not in the exception files, but this is a pretty irrelevant point now.

Additionally, we had 30 files on our original list – DLL's and other files that we've all confirmed to be fine with our new installation of tally.

The only trouble spot we have now is that the keycode.dll file (c:\..\program files\common files\crystal decisions\2.5\bin\keycode.dll) is the one unique instance where the files from the ITA have more records than what the SOS experienced.

If you can confirm that we DO NOT need this file for the correct operation of Tally, we can move forward with the next configuration evaluation. I talked with the testing board and we all still feel that we are on track to have all of these compares completed by end of day on Thursday if things move smoothly. I know we had previously discussed you coming back on Thursday, but it may be more appropriate to have you in on Friday for the next steps.

Let me know what you think and any insight you can provide into the keycode.dll file as previously discussed.

Thanks,
John G.

8/1/2007

Melanie Stuart

From: Gram, Kassie [kgram@hartic.com]
Sent: Monday, July 30, 2007 7:21 AM
To: John Gardner; Lubthisophon, Paul; McClure, Neil
Cc: Melanie Stuart; Jerome Lovato; Tim Bishop
Subject: RE: Time for Monday
Follow Up Flag: Follow up
Flag Status: Yellow

John - That's no problem. I'll be there at 10:30.
Kassie

-----Original Message-----

From: John Gardner [mailto:john.gardner@sos.state.co.us]
Sent: Sat 7/28/2007 11:46 PM
To: Gram, Kassie; Lubthisophon, Paul; McClure, Neil
Cc: Melanie Stuart; Jerome Lovato; Tim Bishop
Subject: Time for Monday

Kassie, I will be running a little late on Monday due to car troubles (amazing how I can predict this two days ahead of time). Can we meet at 10:30am on Monday instead of some other non-announced time?

Thanks,

John G.

Hart
Trusteel
Build

Melanie Stuart

From: Gram, Kassie [kgram@hartic.com]
Sent: Wednesday, July 25, 2007 10:56 AM
To: John Gardner; Tim Bishop
Cc: Michael Chadwell; Melanie Stuart; Geneice Mathews; Harrell, Travis; McClure, Neil; Lubthisophon, Paul
Subject: Trusted Build Hash Values
Follow Up Flag: Follow up
Flag Status: Yellow

John,

As we discussed on the phone this morning, Hart is working with CIBER to produce the hash code values for the files found before and after installation of Hart products. CIBER plans to have these files delivered on Friday. CIBER will provide the tracking number for you when the disk is shipped.

Additionally, I will plan to be at your offices on Monday, at 9am, to resume the trusted install process. Please let me know if anything changes.

Thank you,
Kassie

Kassie Gram
Regulatory Compliance Manager
Hart InterCivic
303.385.8036
www.hartintercivic.com

7/26/2007

John Gardner

From: John Gardner
Sent: Tuesday, July 24, 2007 2:01 PM
To: 'Harrell, Travis'
Cc: Gram, Kassie
Subject: RE: HVS Data

Travis, if you are going down the Systest load of the system, this was the outline that I previously provided:

- a. From 'baseline' (C_drive of clean system) – perform an MD5 hash of all files – save;
- b. Install a unique Colorado configuration of your software – reboot machine;
 - i. Anticipated configurations are:
 1. Tally/Servo
 2. Boss, Tally/Servo
 3. Boss, Ballot Now, Tally/Servo
 4. Boss, Ballot Now, Tally/Servo, Rally
 - ii. Additional configurations may be necessary based on your research.
 - iii. Perform MD5 hash of all files – save;
- c. Reset machine to clean state (matches item 'a' above – this is not just an uninstall of your application);
- d. Perform additional MD5 hash values in step 'b' as necessary
- e. Have Systest provide all MD5 hash value text files to SOS offices.

Through this process, we would anticipate receiving text type files directly from Systest that contain at least the following:

1. Baseline Computer (no Hart Software) – md5 hash.txt;
2. Configuration #1 (with tally/servo) – md5 hash.txt
3. Configuration #2 (with Boss, Tally/servo) – md5 hash.txt
4. Configuration #3 (with Boss, Ballot Now, Tally/Servo) – md5 hash.txt
5. Configuration #4 (with Boss, Ballot Now, Tally/Servo, Rally) – md5 hash.txt
6. Any additional configuration necessary.

If you have any questions on this, please don't hesitate to call me at my office 303-860-6971, or on my cell phone 719-243-6344.

Thank you,
John G.

From: Harrell, Travis [mailto:THarrell@hartic.com]
Sent: Tuesday, July 24, 2007 1:35 PM
To: John Gardner
Cc: Gram, Kassie
Subject: HVS Data

John,
Just a note to assure you that we are working on getting you what we understand you need.
Hope to have the arrangements in place by the end of the day.

7/24/2007

Travis

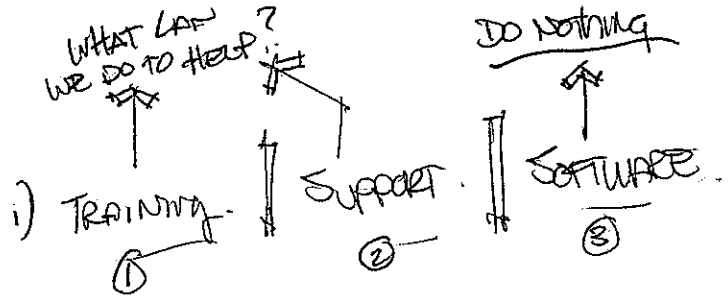
TRAVIS HARRELL

Product Manager, Voting Systems

Hart InterCivic, Inc.

Tel. 512-252-6526

Fax 866-391-1834



NO SOFTWARE

(7)

2) ?

4 HAVE QUOTES - LINEAR
- OURAY.

5 DAYS

..1) DEPENDS ON COUNTY

?

(3) | HUBBARD
CROWLEY
COSTILLA.

STATE OF COLORADO
Department of State

1700 Broadway, Suite 270
Denver, CO 80290



Mike Coffman
Secretary of State

Holly Lowder
Director, Elections

JIM NILIUS (SYSTEM)

Kassie Gram
Hart Intercivic
1650 Coal Creek Drive
Lafayette, CO 80026

July 19, 2007

Re: 2007-CDOS-HAR-001-0404

Mrs. Gram,

This letter will serve as a continuation of the requests we have been making to your attention regarding the hash values of your software. Our conversations on this topic started on June 11th. We are under the impression that you will not be providing the information that the State is requesting for your voting system as part of the trusted build process.

We have requested MDS hash values of your system with the software installed. This is a fairly straight forward process that can be accomplished in a matter of hours. Over the past three weeks we have worked to receive these files and have faced delays from your office. We are requesting the Hash values to conduct a verification of devices that are in use in the field by establishing a trusted baseline of your system. Without these values, the state will be forced (by Hart) to load all components of the software on county computers after the verification that the county computer has been reformatted. You have indicated that this process will void any warranty, unless a Hart representative is present. Additionally you plan on charging each of your customers for a process that you are imposing on them. We feel that this is not necessary.

You mention your concern about hash values becoming a public record as part of the certification process. We have presented to you the security that our office places around the trusted build components of the system. Additionally, our lawyers provide your office a chance to respond to public records requests regarding documents that may be considered confidential. The fact that we are receiving a baseline of all files in your system, running elections, verifying which files are dynamic provides confidence to the public that the changes in the hash values represent a known expectation of those files. This information provides more assurances that your system is working as designed to the citizens of this state.

Finally, if your are not able to provide hash codes for the complete set of files that are contained in your installation disk, which you are asserting contains COTS programs, then the testing board would like to have the ability to load the COTS files from a COTS disk as previously indicated in a memo sent to your attention on June 11th. Step 2 indicates that the state would load all COTS necessary for the Election Management System from COTS disks. If you provide these programs on COTS disks, and then a new installation disk with your software, the testing board will be able to verify that these programs (that are included in your current installation disk) are truly COTS files.

Again, I reiterate our position on this - without these issues resolved we will be unable to verify your software in the field. We have confirmed that these hash values can be produced in a matter of hours and we still anticipate you will be able to provide this information within our previously established time frame.

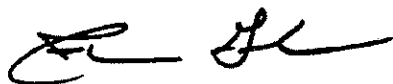
DAVID
TRAVIS
NEIL MCCLURE
KASSIE

Done
Received
7/19/07

The Secretary of State is very concerned with the numerous amounts of delays that have been caused in the trusted build process for your voting system. I have requested additional support on this matter to meet the anticipated deadline. We will be working over the next few days to establish a conference call with Mr. Hart and other senior executives to resolve this issue as required in the variety of letters we have sent to you with the requests necessary by the testing board. We hope that you (or someone from your office) will participate in this conference call to finally move beyond this issue and provide the information that the state has been requesting.

Please contact me directly if you have any additional questions regarding these items as we have discussed today.

Sincerely,

A handwritten signature in black ink, appearing to be "John Gardner", written in a cursive style.

John Gardner
Voting Systems Program Manager
Colorado Department of State
1700 Broadway, Ste 270
Denver, CO 80290
Office: 303.894.2200 ext. 6318
Fax: 303.869.4861

Melanie Stuart

From: John Gardner
Sent: Thursday, July 19, 2007 12:49 PM
To: Gram, Kassie; Lubthisophon, Paul; Tim Bishop
Cc: Melanie Stuart; Michael Chadwell; Geneice Mathews; Harrell, Travis; McClure, Neil
Subject: RE: Hash value request
Follow Up Flag: Follow up
Flag Status: Yellow
Attachments: 2007-CDOS-HAR-001-0404 - Phase III- hash request part 4.pdf

Kassie, our response is attached.

Thanks,
John G.

From: Gram, Kassie [mailto:kgram@hartic.com]
Sent: Wednesday, July 18, 2007 4:47 PM
To: John Gardner; Lubthisophon, Paul; Tim Bishop
Cc: Melanie Stuart; Michael Chadwell; Geneice Mathews; Harrell, Travis; McClure, Neil
Subject: RE: Hash value request

John – Attached is Hart's response to your request.

Thank you,
Kassie

From: John Gardner [mailto:john.gardner@sos.state.co.us]
Sent: Monday, July 16, 2007 4:20 PM
To: John Gardner; Gram, Kassie; Lubthisophon, Paul; Tim Bishop
Cc: Melanie Stuart; Michael Chadwell; Geneice Mathews; Harrell, Travis; McClure, Neil; Jim Nilius
Subject: RE: Hash value request

Kassie, please see the attached memo summarizing our conversation today. If you have any questions or discrepancies, please let me know.

Thanks,
John G.

From: John Gardner
Sent: Friday, July 13, 2007 8:47 PM
To: 'Gram, Kassie'; Lubthisophon, Paul; Tim Bishop
Cc: Melanie Stuart; Michael Chadwell; Geneice Mathews; Harrell, Travis; McClure, Neil
Subject: RE: Hash value request

Kassie, attached is the SOS response to your letter. Please let me know what time on Monday works for you to discuss this and the path your organization would like to take to move forward. We do not have any time for additional delays to our process. My team is available via conference call any time on Monday.

7/19/2007

Thank you,
John Gardner

From: Gram, Kassie [mailto:kgram@hartic.com]
Sent: Friday, July 13, 2007 5:02 PM
To: John Gardner; Lubthisophon, Paul; Tim Bishop
Cc: Melanie Stuart; Michael Chadwell; Geneice Mathews; Harrell, Travis; McClure, Neil
Subject: RE: Hash value request

John,

Attached is the letter from Hart in response to your request. We are in the process of ironing out a few things in regard to PDI documentation. I hope to be able to get back to regarding the PDI on Monday.

Thanks,
Kassie

From: John Gardner [mailto:john.gardner@sos.state.co.us]
Sent: Wednesday, June 27, 2007 7:41 PM
To: Lubthisophon, Paul; Gram, Kassie; Tim Bishop
Cc: Melanie Stuart; Michael Chadwell; Geneice Mathews
Subject: RE: Hash value request

Paul and Kassie, please refer to the attached document for our request of additional Hash values for your election management software.

Thank you,
John Gardner

From: Lubthisophon, Paul [mailto:PLubthisophon@hartic.com]
Sent: Wednesday, June 27, 2007 1:46 PM
To: John Gardner; Gram, Kassie; Tim Bishop
Cc: Melanie Stuart; Michael Chadwell; Geneice Mathews
Subject: Hash value request

John

Kassie and the management team has ask me for a status update of the letter you were going to send us discussing the files and hash values. When can we expect it?

Paul Lubthisophon
Regulatory Compliance Specialist
Hart InterCivic - Colorado
303-531-4486 voice direct
303-385-6477 facsimile
plubthisophon@hartic.com

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7/19/2007

including attachments.

7/19/2007

STATE OF COLORADO
Department of State

1700 Broadway, Suite 270
Denver, CO 80290



Mike Coffman
Secretary of State

Holly Lowder
Director, Elections

Kassie Gram
Hart Intercivic
1650 Coal Creek Drive
Lafayette, CO 80026

July 19, 2007

Re: 2007-CDOS-HAR-001-0404

Mrs. Gram,

This letter will serve as a continuation of the requests we have been making to your attention regarding the hash values of your software. Our conversations on this topic started on June 11th. We are under the impression that you will not be providing the information that the State is requesting for your voting system as part of the trusted build process.

We have requested MD5 hash values of your system with the software installed. This is a fairly straight forward process that can be accomplished in a matter of hours. Over the past three weeks we have worked to receive these files and have faced delays from your office. We are requesting the Hash values to conduct a verification of devices that are in use in the field by establishing a trusted baseline of your system. Without these values, the state will be forced (by Hart) to load all components of the software on county computers after the verification that the county computer has been reformatted. You have indicated that this process will void any warranty, unless a Hart representative is present. Additionally you plan on charging each of your customers for a process that you are imposing on them. We feel that this is not necessary.

You mention your concern about hash values becoming a public record as part of the certification process. We have presented to you the security that our office places around the trusted build components of the system. Additionally, our lawyers provide your office a chance to respond to public records requests regarding documents that may be considered confidential. The fact that we are receiving a baseline of all files in your system, running elections, verifying which files are dynamic provides confidence to the public that the changes in the hash values represent a known expectation of those files. This information provides more assurances that your system is working as designed to the citizens of this state.

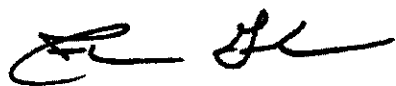
Finally, if your are not able to provide hash codes for the complete set of files that are contained in your installation disk, which you are asserting contains COTS programs, then the testing board would like to have the ability to load the COTS files from a COTS disk as previously indicated in a memo sent to your attention on June 11th. Step 2 indicates that the state would load all COTS necessary for the Election Management System from COTS disks. If you provide these programs on COTS disks, and then a new installation disk with your software, the testing board will be able to verify that these programs (that are included in your current installation disk) are truly COTS files.

Again, I reiterate our position on this - without these issues resolved we will be unable to verify your software in the field. We have confirmed that these hash values can be produced in a matter of hours and we still anticipate you will be able to provide this information within our previously established time frame.

The Secretary of State is very concerned with the numerous amounts of delays that have been caused in the trusted build process for your voting system. I have requested additional support on this matter to meet the anticipated deadline. We will be working over the next few days to establish a conference call with Mr. Hart and other senior executives to resolve this issue as required in the variety of letters we have sent to you with the requests necessary by the testing board. We hope that you (or someone from your office) will participate in this conference call to finally move beyond this issue and provide the information that the state has been requesting.

Please contact me directly if you have any additional questions regarding these items as we have discussed today.

Sincerely,

A handwritten signature in black ink, appearing to be 'John Gardner', written in a cursive style.

John Gardner
Voting Systems Program Manager
Colorado Department of State
1700 Broadway, Ste 270
Denver, CO 80290
Office: 303.894.2200 ext. 6318
Fax: 303.869.4861



July 13, 2007

Colorado Department of State
John Gardner
1700 Broadway, Suite 270
Denver, CO 80290

Mr. Gardner,

I am writing in response to your letter dated June 27th requesting the VSTL create hash values for all files that result from the installation of Hart's System 6.0. After careful review of your request and Rule 45, we believe that your request is an effort to satisfy the requirement as stated in the last sentence of clause 45.6.2.1|3 in Rule 45. For ease of reference, this clause states the following:

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.

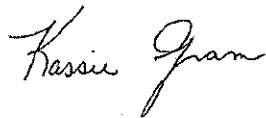
This clause specifically addresses proprietary software and the last sentence requires only the proprietary software to have the hash values verified after installation. We have supplied the information necessary to perform the verification of Hart proprietary software with the exception of dynamic files. The remainder of the files created during the installation process come from COTS products.

The question of hash values for dynamic files requires consideration of the practical aspects of the State's objective. We understand the State's need to verify that the installed version is the same version that was tested by the ITA, which is accomplished through a chain of custody process. We also understand the need to verify that the proprietary software has not changed from the time it was tested and witness built by VSTL, installed by the State and subsequently, during use in the field. This verification cannot be achieved as a practical matter for dynamic files. For example, in the Ballot Now folders you will find a BNSecurity.cfg file and a BNSecurity.db file. These files change with each installation and therefore will produce a different hash value for each installation of the application. Because these files change, a hash value is an ineffective means of verifying that the file hasn't been changed. Furthermore, creating and publishing hash values for dynamic files creates a tremendous opportunity for misinterpretation by the public, jeopardizing the confidence in the voting system.

We understand your need to prove that this is the system that was tested by the ITA. We have documented the steps taken to meet the requirements of your strong chain-of-custody procedures and, when coupled with the hash values for the static proprietary software, will satisfy the requirements for verification that the software installed is the certified software (per clause 45.5.2.3.12 – comparison of trusted build or other reference information).

I hope this addresses your request and we can resolve this issue so that we can move forward into functional testing. Please don't hesitate to contact me if you have any further questions.

Sincerely,

A handwritten signature in cursive script that reads "Kassie Gram".

Kassie Gram
Regulatory Compliance Manager
303.385.8036
kgram@hartic.com

Melanie Stuart

From: John Gardner
Sent: Thursday, July 19, 2007 10:47 AM
To: Melanie Stuart
Subject: FW: CBR07-HARCO-00001.doc / PDI Firmware
Follow Up Flag: Follow up
Flag Status: Yellow

FYI... (for Hart)

Thanks,
John G.

From: Rohacek, Kelly A [mailto:KRohacek@ciber.com]
Sent: Wednesday, July 18, 2007 10:25 AM
To: John Gardner
Cc: kgram@hartic.com; Tim Bishop; tharrell@hartic.com; plubt.hisophon@hartic.com
Subject: RE: CBR07-HARCO-00001.doc / PDI Firmware

John,

I think I understand the issue and I would refer back to the transmittal of this morning stating **CIBER did not record** any PDI Firmware versions, nor did we test a version of the PDI firmware.

As recorded in the final report approved by NASED 03/06/06: NASED Number- N-1-04-22-22-004 (2002), the below items were tested and recorded in the CIBER testing process.

Original Report 2006-01-13 For System 6.0
System Hardware Software
Hart System 6.0
JBC Firmware Version 4.0.19
eSlate Firmware Version 4.0.19
eScan Firmware Version 1.1.6
VBO Firmware Version 1.7.5
COTS Scanner, Fujitsu M4099D
COTS Printer, HP LaserJet 2420D
BOSS version 4.2.12
Ballot Now version 3.2.4
Rally version 2.2.4
Tally version 4.2.8
eCM Manager 1.1.7
Servo 4.1.6
BossUtil 2.4.14
HartLib 1.7

Original report consisted of review of TDP and source code along with functional system integration test and L&A testing of eScan as well as L&A testing of eSlate with VBO. All components listed above were qualified to the 2002 FEC Voting System Standards.

7/19/2007

Addendum 1 - 2006-01-30 For System 6.0

System Hardware Software

Hart System 6.0

JBC Firmware Version 4.0.19

eSlate Firmware Version 4.0.19

eScan Firmware Version 1.1.6

VBO Firmware Version 1.7.5

COTS Scanner, Fujitsu M4099D

COTS Printer, HP LaserJet 2420D

BOSS version 4.2.13

Ballot Now version 3.2.4

Rally version 2.2.4

Tally version 4.2.8

eCM Manager 1.1.7

Servo 4.1.6

BossUtil 2.4.14

HartLib 1.7

Addendum 1 corrected a typographical error in the version number of BOSS.

Addendum 2 - 2006-03-03 For System 6.0

System Hardware Software

Hart System 6.0

JBC Firmware Version 4.0.19

eSlate Firmware Version 4.0.19

eScan Firmware Version 1.1.6

VBO Firmware Version 1.7.5

COTS Scanner, Fujitsu M4099D

COTS Printer, HP LaserJet 2420D

BOSS version 4.2.13

Ballot Now version 3.2.4

Rally version 2.2.4

Tally version 4.2.8

eCM Manager 1.1.7

Servo 4.1.6

BossUtil 2.4.14

HartLib 1.7

Addendum 2 describes subsequent defects discovered.

Thank you,

Kelly Rohacek

CIBER - ITA Practice Director

-----Original Message-----

From: John Gardner [mailto:john.gardner@sos.state.co.us]

Sent: Wednesday, July 18, 2007 10:19 AM

To: Rohacek, Kelly A

Cc: kgram@hartic.com; Tim Bishop; tharrell@hartic.com; plubt.hisophon@hartic.com

Subject: Re: CBR07-HARCO-00001.doc / PDI Firmware

Thank you Kelly for this information. We are specifically looking for the version of the PDI firmware that you tested. You have provided documentation indicating a

7/19/2007

variety of COTS software versions (I.e. Microsoft XP service pack 2), however, the PDI version is not listed.

We are aware that this software is COTS, but have requested the actual version that was tested to determine qualification.

I apologize for any confusion this may have caused, we have tried to maintain consistency in this request.

Do you have record of the version number PDI?

Thank you,
John Gardner

Sent via out of office e-mail response.

-----Original Message-----

From: "Rohacek, Kelly A" <KRohacek@ciber.com>

Date: Wed, 18 Jul 2007 07:56:44

To: <john.gardner@sos.state.co.us>

Cc: <kgram@hartic.com>, <tim.bishop@sos.state.co.us>, <tharrell@hartic.com>,
<plubt.hisophon@hartic.com>, "Rohacek, Kelly A" <KRohacek@ciber.com>

Subject: CBR07-HARCO-00001.doc / PDI Firmware

Please find the formal transmittal letter requested by HART to the State of Colorado.

You can also contact me @256.895.2525 for further clarification if required

Thank you Kelly Rohacek

7800 Madison Blvd.
Suite 206
Huntsville, AL 35806
256-895-2525
Fax: 256-895-2530

July 18 2007

Mr. John Gardner
Secretary of State,
Elections Division
Denver CO
RE: HART - PDI Firmware Testing

Dear Mr. Gardner

At the request of Hart Intercivic, CIBER is sending formal transmittal as confirmation of the subject matter listed above; HART 6.0 - PDI Firmware Testing.

7/19/2007

The PDI Firmware in question for HART 6.0 was not recorded by CIBER for testing of the e-scan functionality. PDI Firmware is a COTS product and therefore not required to be reviewed under the 2002 VVGS Standards CIBER used to guide the evaluation of the Hart Voting System 6.0. The following software reference used to support this action is found on page 95 of Volume I of the 2002 VVSG standards.

4.2.3 Software Modularity and Programming

Voting system application software, including COTS software, shall be designed in a modular fashion. However, COTS software is not required to be inspected for compliance with this requirement.. For the purpose of this requirement1, "modules" may be compiled or interpreted independently. Modules may also be nested. The modularity rules described here apply to the component sub modules of a library.

The

principle concept is that the module contains all the elements to compile or interpret

successfully and has limited access to data in other modules. The design concept is simple replacement with another module whose interfaces match the original module.

Sincerely,

Kelly Rohacek

ITA Practice Director

256.895.2525

RE: CBR07-HARCO-00001

Cc: Gram, Kassie [kgram@hartic.com] -requestor

<mailto:tim.bishop@sos.state.co.us> tim.bishop@sos.state.co.us

<mailto:tharrell@hartic.com> tharrell@hartic.com

<mailto:plubthisophon@hartic.com> plubthisophon@hartic.com

Melanie Stuart

From: John Gardner
Sent: Thursday, July 19, 2007 10:48 AM
To: Melanie Stuart
Subject: FW: CBR07-HARCO-00001.doc / PDI Firmware
Follow Up Flag: Follow up
Flag Status: Yellow

The original part of that e-mail chain.

Thanks,
John G.

From: Rohacek, Kelly A [mailto:KRohacek@ciber.com]
Sent: Wednesday, July 18, 2007 7:57 AM
To: John Gardner
Cc: kgram@hartic.com; Tim Bishop; tharrell@hartic.com; plubthisophon@hartic.com; Rohacek, Kelly A
Subject: CBR07-HARCO-00001.doc / PDI Firmware

Please find the formal transmittal letter requested by HART to the State of Colorado.
You can also contact me @256.895.2525 for further clarification if required
Thank you Kelly Rohacek

ciber

7800 Madison Blvd.
Suite 206
Huntsville, AL 35806
256-895-2525
Fax: 256-895-2530

July 18 2007

Mr. John Gardner
Secretary of State,
Elections Division
Denver CO
RE: HART - PDI Firmware Testing

Dear Mr. Gardner

At the request of Hart Intercivic, CIBER is sending formal transmittal as confirmation of the subject matter listed above; HART 6.0 - PDI Firmware Testing.

The PDI Firmware in question for HART 6.0 was not recorded by CIBER for testing of the e-scan functionality. PDI Firmware is a COTS product and therefore not required to be reviewed under the 2002 VVGS Standards

7/19/2007

CIBER used to guide the evaluation of the Hart Voting System 6.0. The following software reference used to support this action is found on page 95 of Volume I of the 2002 VVSG standards.

4.2.3 Software Modularity and Programming

Voting system application software, including COTS software, shall be designed in a modular fashion. However, COTS software is not required to be inspected for compliance with this requirement. For the purpose of this requirement, "modules" may be compiled or interpreted independently. Modules may also be nested. The modularity rules described here apply to the component sub modules of a library. The principle concept is that the module contains all the elements to compile or interpret successfully and has limited access to data in other modules. The design concept is simple replacement with another module whose interfaces match the original module.

Sincerely,

Kelly Rohacek
ITA Practice Director
256.895.2525
RE: CBR07-HARCO-00001
Cc: Gram, Kassie [kgram@hartic.com] -requestor
tim.bishop@sos.state.co.us
tharrell@hartic.com
plubthisophon@hartic.com



July 18, 2007

Colorado Department of State
John Gardner
1700 Broadway, Suite 270
Denver, CO 80290

Mr. Gardner,

Hart has reviewed the possible options discussed for validation of the Hart Voting System version 6.0. Hart will agree to submit the Hart proprietary dynamic files to an ITA or VSTL in order to have MD5 hash codes developed. We are currently working to have these files run and delivered by July 20th in order to move the Hart Voting System into functional testing. In addition to these hash codes, Hart will also have an ITA provide a directory hierarchy and file structure to define where the software installation process places the COTS files.

While we understand that the hash codes for the dynamic files will be used by the State to baseline the software installation; Hart is gravely concerned that if allowed to be public record, the hash codes for the dynamic files will create a great deal of confusion. Due to this likelihood, Hart will have the dynamic file hash codes files delivered to the State, provided we can reach an agreement with the State that these hash codes will not be released as public record.

CIBER!
working
on.

Additionally, Hart does not agree that creating hash codes for 3rd party software used by the Hart Voting System is the sole means of satisfying the validation of the Hart proprietary software and the requirement to do so is explicitly not supported by Rule 45. Having SysTest or CIBER develop hash codes for the COTS products installed with Hart code does not demonstrate anything about the sequence of interactions between Hart's code and 3rd party software. Since Hart does not monitor or manage the processes of any COTS software used by our system, we will not assume the responsibility of providing any hash codes for these files.

We assert that the combination of the following files, provided through the chain of custody procedures, allows the Testing Board to document all files that are placed on any Hart Voting System and complies with the requirements as stated in Rule 45:

1. Original ITA generated hash code values for the Hart proprietary static files associated with System 6.0;
2. ITA generated hash code values for the Hart proprietary dynamic files associated with System 6.0; and
3. An ITA review and documentation of the directory structure and file hierarchy created during the installation of the Hart Voting System.

CIBER has been able to dedicate some of their resources to help us provide these files to you. However, they cannot guarantee delivery of these files before a Monday morning delivery. Please confirm that this is still within the States timeframe as we too would like to start functional testing as soon as possible.

Please contact me if you have any questions regarding the files that Hart will be providing.

Sincerely,



Kassie Gram
Regulatory Compliance Manager
303.385.8036
kgram@hartic.com

Melanie Stuart

From: Gram, Kassie [kgram@hartic.com]
Sent: Tuesday, July 17, 2007 4:50 PM
To: John Gardner; Lubthisophon, Paul; Tim Bishop
Cc: Melanie Stuart; Michael Chadwell; Geneice Mathews; Harrell, Travis; McClure, Neil; Jim Nilius
Subject: RE: Hash value request

John - Thank you for providing the summary. We are currently working with SysTest to try to get more information on how best to address our situation. Unfortunately, Mr. Nilus has previous commits and is unavailable to help on our request until Thursday. We understand that this is coming close to your deadline of July 20th; but we are trying to find the best way for Hart to continue moving forward.

I will touch base with you as soon as possible to relay our progress.
Kassie Gram

From: John Gardner [mailto:john.gardner@sos.state.co.us]
Sent: Monday, July 16, 2007 4:20 PM
To: John Gardner; Gram, Kassie; Lubthisophon, Paul; Tim Bishop
Cc: Melanie Stuart; Michael Chadwell; Geneice Mathews; Harrell, Travis; McClure, Neil; Jim Nilius
Subject: RE: Hash value request

Kassie, please see the attached memo summarizing our conversation today. If you have any questions or discrepancies, please let me know.

Thanks,
John G.

From: John Gardner
Sent: Friday, July 13, 2007 8:47 PM
To: 'Gram, Kassie'; Lubthisophon, Paul; Tim Bishop
Cc: Melanie Stuart; Michael Chadwell; Geneice Mathews; Harrell, Travis; McClure, Neil
Subject: RE: Hash value request

Kassie, attached is the SOS response to your letter. Please let me know what time on Monday works for you to discuss this and the path your organization would like to take to move forward. We do not have any time for additional delays to our process. My team is available via conference call any time on Monday.

Thank you,
John Gardner

From: Gram, Kassie [mailto:kgram@hartic.com]
Sent: Friday, July 13, 2007 5:02 PM
To: John Gardner; Lubthisophon, Paul; Tim Bishop
Cc: Melanie Stuart; Michael Chadwell; Geneice Mathews; Harrell, Travis; McClure, Neil
Subject: RE: Hash value request

7/18/2007

John,

Attached is the letter from Hart in response to your request. We are in the process of ironing out a few things in regard to PDI documentation. I hope to be able to get back to regarding the PDI on Monday.

Thanks,
Kassie

From: John Gardner [mailto:john.gardner@sos.state.co.us]
Sent: Wednesday, June 27, 2007 7:41 PM
To: Lubthisophon, Paul; Gram, Kassie; Tim Bishop
Cc: Melanie Stuart; Michael Chadwell; Geneice Mathews
Subject: RE: Hash value request

Paul and Kassie, please refer to the attached document for our request of additional Hash values for your election management software.

Thank you,
John Gardner

From: Lubthisophon, Paul [mailto:PLubthisophon@hartic.com]
Sent: Wednesday, June 27, 2007 1:46 PM
To: John Gardner; Gram, Kassie; Tim Bishop
Cc: Melanie Stuart; Michael Chadwell; Geneice Mathews
Subject: Hash value request

John

Kassie and the management team has ask me for a status update of the letter you were going to send us discussing the files and hash values. When can we expect it?

Paul Lubthisophon
Regulatory Compliance Specialist
Hart InterCivic - Colorado
303-531-4486 voice direct
303-385-6477 facsimile
plubthisophon@hartic.com

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7/18/2007

STATE OF COLORADO
Department of State

1700 Broadway, Suite 270
Denver, CO 80290



Mike Coffman
Secretary of State

Holly Lowder
Director, Elections

Kassie Gram
Hart Intercivic
1650 Coal Creek Drive
Lafayette, CO 80026

July 16, 2007

Re: 2007-CDOS-HAR-001-0404

Mrs. Gram,

This letter will serve as a summary of our conversations today regarding the issues we brought to your attention on Friday, July 13th. As the issues become increasingly complicated, and the end of our timeline nearing we thought it best to ensure we receive the correct response to our request.

In summary of the Pixel Data and INI files – you have agreed that these files can be delivered to our office with MD5 hash values from Systest. We fully expect to receive this information within our previously discussed completion date of July 20th.

In summary of the PDI issue – you have stated that Ciber has no documentation of the version number that was tested when your system was qualified for the 2002 VSS. We have requested a letter from Ciber specifically stating these facts, that they are missing documentation of the specifics of your machine when testing for federal qualification. It is our anticipation that we will not receive this information by July 1st, however we will need this documentation prior to the completion of functional testing in order to make an accurate assessment of the eScan voting device.

Finally, to summarize our understanding of the Hash value situation for the Hart Voting System Software version 6.0, we have come to the following conclusions and possible outcomes:

- 1) Do nothing – we have received hash values of the installation files for your software. We can load these programs and move forward; however this would put the counties in a “rebuild” situation for all the software and servers in counties that use your system. The testing board has strongly recommended that you do not take this option due to the negative impact you will cause for your customers in this state.
- 2) Provide Documentation from Ciber stating that they do not have the necessary documentation to support the expanded files from your installation. This would essentially place you in the same position as item #1, and is not recommended by our testing board.
- 3) Provide MD5 hash values of your system – this is the route that the testing board suggests for your system for a positive outcome for both the State testing and for your customers in the future. We have requested that you submit the files from Ciber that have hash values to Systest (or other currently certified VSTL) and have them install the files on a freshly built windows based computer with the same operating system as you are using for functional testing. Once all the COTS drivers are installed (the same set you have provided to the State of testing) the following should take place:
 - a. From ‘baseline’ (C_drive of clean system) – perform an MD5 hash of all files – save;

- b. Install a unique Colorado configuration of your software – reboot machine;
 - i. Anticipated configurations are:
 - 1. Tally/Servo
 - 2. Boss, Tally/Servo
 - 3. Boss, Ballot Now, Tally/Servo
 - 4. Boss, Ballot Now, Tally/Servo, Rally
 - ii. Additional configurations may be necessary based on your research.
 - iii. Perform MD5 hash of all files – save;
- c. Reset machine to clean state (matches item 'a' above – this is not just an uninstall of your application);
- d. Perform additional MD5 hash values in step 'b' as necessary
- e. Have Systest provide all MD5 hash value text files to SOS offices.

Through this process, we would anticipate receiving text type files directly from Systest that contain at least the following:

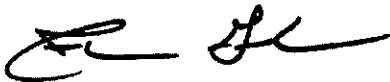
- 1. Baseline Computer (no Hart Software) – md5 hash.txt;
- 2. Configuration #1 (with tally/servo) – md5 hash.txt
- 3. Configuration #2 (with Boss, Tally/servo) – md5 hash.txt
- 4. Configuration #3 (with Boss, Ballot Now, Tally/Servo) – md5 hash.txt
- 5. Configuration #4 (with Boss, Ballot Now, Tally/Servo, Rally) – md5 hash.txt
- 6. Any additional configuration necessary.

We are of the understanding that this process can be completed by Systest Labs within a matter of hours, or possibly even with one day. We fully anticipate that this will be delivered to our office within our designated time frame of July 20th. Once we have received these files, our office will install the software and experience the same results as in the files provided.

As a reminder, the intent of our requirement is that all proprietary software files are received from a VSTL with hash values prior to our loading for testing. This step will be carried out further by verifying the files that are installed on county computers and devices. If there are any other files that you know of that may need to be 'added' to any of your devices or computers for proper Colorado operation, I request that you disclose those at this time as well. Any proprietary file or program that has not been vetted through this process will not be allowed to be used by your customers.

Please contact me directly if you have any additional questions regarding these items as we have discussed today.

Sincerely,



John Gardner
Voting Systems Program Manager
Colorado Department of State
1700 Broadway, Ste 270
Denver, CO 80290
Office: 303.894.2200 ext. 6318
Fax: 303.869.4861



HART

intercity™

July 13, 2007

Colorado Department of State
John Gardner
1700 Broadway, Suite 270
Denver, CO 80290

Mr. Gardner,

I am writing in response to your letter dated June 27th requesting the VSTL create hash values for all files that result from the installation of Hart's System 6.0. After careful review of your request and Rule 45, we believe that your request is an effort to satisfy the requirement as stated in the last sentence of clause 45.6.2.1|3 in Rule 45. For ease of reference, this clause states the following:

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.


This clause specifically addresses proprietary software and the last sentence requires only the proprietary software to have the hash values verified after installation. We have supplied the information necessary to perform the verification of Hart proprietary software with the exception of dynamic files. The remainder of the files created during the installation process come from COTS products.

The question of hash values for dynamic files requires consideration of the practical aspects of the State's objective. We understand the State's need to verify that the installed version is the same version that was tested by the ITA, which is accomplished through a chain of custody process. We also understand the need to verify that the proprietary software has not changed from the time it was tested and witness built by VSTL, installed by the State and subsequently, during use in the field. This verification cannot be achieved as a practical matter for dynamic files. For example, in the Ballot Now folders you will find a BNSecurity.cfg file and a BNSecurity.db file. These files change with each installation and therefore will produce a different hash value for each installation of the application. Because these files change, a hash value is an ineffective means of verifying that the file hasn't been changed. Furthermore, creating and publishing hash values for dynamic files creates a tremendous opportunity for misinterpretation by the public, jeopardizing the confidence in the voting system.

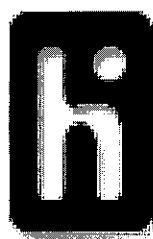
We understand your need to prove that this is the system that was tested by the ITA. We have documented the steps taken to meet the requirements of your strong chain-of-custody procedures and, when coupled with the hash values for the static proprietary software, will satisfy the requirements for verification that the software installed is the certified software (per clause 45.5.2.3.12 – comparison of trusted build or other reference information).

I hope this addresses your request and we can resolve this issue so that we can move forward into functional testing. Please don't hesitate to contact me if you have any further questions.

Sincerely,

A handwritten signature in cursive script that reads "Kassie Gram".

Kassie Gram
Regulatory Compliance Manager
303.385.8036
kgram@hartic.com



HART
*i n t e r c i v i c*TM

July 13, 2007

Colorado Department of State
John Gardner
1700 Broadway, Suite 270
Denver, CO 80202

Mr. Gardner,

I am writing in response to your letter dated June 27th requesting the V&TL create hash values for all files that result from the installation of Hart's System 6.0. After careful review of your request and Rule 45, we believe that your request is an effort to satisfy the requirement as stated in the last sentence of clause 45.5.2.1.3 in Rule 45. For ease of reference, this clause states the following:

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.

This clause specifically addresses proprietary software and the last sentence requires only the proprietary software to have the hash values verified after installation. We have supplied the information necessary to perform the verification of Hart proprietary software with the exception of dynamic files. The remainder of the files created during the installation process come from ODS products.

The question of hash values for dynamic files requires consideration of the practical aspects of the State's objective. We understand the State's need to verify that the installed version is the same version that was tested by the ITA, which is accomplished through a chain of custody process. We also understand the need to verify that the proprietary software has not changed from the time it was tested and witness built by V&TL, installed by the State and subsequently, during use in the field. This verification cannot be achieved as a practical matter for dynamic files. For example, in the Ballot Now folders you will find a BNSecurity.cfg file and a BNSecurity.db file. These files change with each installation and therefore will produce a different hash value for each installation of the application. Because these files change, a hash value is an ineffective means of verifying that the file hasn't been changed. Furthermore, creating and publishing hash values for dynamic files creates a tremendous opportunity for misinterpretation by the public, jeopardizing the confidence in the voting system.

We understand your need to prove that this is the system that was tested by the ITA. We have documented the steps taken to meet the requirements of your strong chain-of-custody procedures and, when coupled with the hash values for the static proprietary software, will satisfy the requirements for verification that the software installed is the certified software (per clause 45.5.2.3.12 – comparison of trusted build or other reference information).

I hope this addresses your request and we can resolve this issue so that we can move forward into functional testing. Please don't hesitate to contact me if you have any further questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Kessie Gram". The signature is fluid and cursive, with the first name "Kessie" written in a larger, more prominent script than the last name "Gram".

Kessie Gram
Regulatory Compliance Manager
303.385.8036
kgram@herik.com



HART

i n t e r c i v i c TM

July 13, 2007

Colorado Department of State
John Gardner
1700 Broadway, Suite 270
Denver, CO 80290

Mr. Gardner,

I am writing in response to your letter dated June 27th requesting the VSTL create hash values for all files that result from the installation of Hart's System 6.0. After careful review of your request and Rule 45, we believe that your request is an effort to satisfy the requirement as stated in the last sentence of clause 45.6.2.13 in Rule 45. For ease of reference, this clause states the following:

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.

This clause specifically addresses proprietary software and the last sentence requires only the proprietary software to have the hash values verified after installation. We have supplied the information necessary to perform the verification of Hart proprietary software with the exception of dynamic files. The remainder of the files created during the installation process come from COTS products.

The question of hash values for dynamic files requires consideration of the practical aspects of the State's objective. We understand the State's need to verify that the installed version is the same version that was tested by the ITA, which is accomplished through a chain of custody process. We also understand the need to verify that the proprietary software has not changed from the time it was tested and witness built by VSTL, installed by the State and subsequently, during use in the field. This verification cannot be achieved as a practical matter for dynamic files. For example, in the Ballot Now folders you will find a BNSecurity.cfg file and a BNSecurity.db file. These files change with each installation and therefore will produce a different hash value for each installation of the application. Because these files change, a hash value is an ineffective means of verifying that the file hasn't been changed. Furthermore, creating and publishing hash values for dynamic files creates a tremendous opportunity for misinterpretation by the public, jeopardizing the confidence in the voting system.

We understand your need to prove that this is the system that was tested by the ITA. We have documented the steps taken to meet the requirements of your strong chain-of-custody procedures and, when coupled with the hash values for the static proprietary software, will satisfy the requirements for verification that the software installed is the certified software (per clause 45.5.2.3.12 – comparison of trusted build or other reference information).

I hope this addresses your request and we can resolve this issue so that we can move forward into functional testing. Please don't hesitate to contact me if you have any further questions.

Sincerely,

A handwritten signature in cursive script that reads "Kassie Gram".

Kassie Gram
Regulatory Compliance Manager
303.385.8036
kgram@hartic.com

Melanie Stuart

From: John Gardner
Sent: Friday, July 13, 2007 8:47 PM
To: Gram, Kassie; Lubthisophon, Paul; Tim Bishop
Cc: Melanie Stuart; Michael Chadwell; Geneice Mathews; Harrell, Travis; McClure, Neil
Subject: RE: Hash value request
Attachments: 2007-CDOS-HAR-001-0404 - Phase III- hash request part 2.pdf

Kassie, attached is the SOS response to your letter. Please let me know what time on Monday works for you to discuss this and the path your organization would like to take to move forward. We do not have any time for additional delays to our process. My team is available via conference call any time on Monday.

Thank you,
John Gardner

From: Gram, Kassie [mailto:kgram@hartic.com]
Sent: Friday, July 13, 2007 5:02 PM
To: John Gardner; Lubthisophon, Paul; Tim Bishop
Cc: Melanie Stuart; Michael Chadwell; Geneice Mathews; Harrell, Travis; McClure, Neil
Subject: RE: Hash value request

John,

Attached is the letter from Hart in response to your request. We are in the process of ironing out a few things in regard to PDI documentation. I hope to be able to get back to regarding the PDI on Monday.

Thanks,
Kassie

From: John Gardner [mailto:john.gardner@sos.state.co.us]
Sent: Wednesday, June 27, 2007 7:41 PM
To: Lubthisophon, Paul; Gram, Kassie; Tim Bishop
Cc: Melanie Stuart; Michael Chadwell; Geneice Mathews
Subject: RE: Hash value request

Paul and Kassie, please refer to the attached document for our request of additional Hash values for your election management software.

Thank you,
John Gardner

From: Lubthisophon, Paul [mailto:PLubthisophon@hartic.com]
Sent: Wednesday, June 27, 2007 1:46 PM
To: John Gardner; Gram, Kassie; Tim Bishop

7/16/2007

STATE OF COLORADO
Department of State

1700 Broadway, Suite 270
Denver, CO 80290



Mike Coffman
Secretary of State

Holly Lowder
Director, Elections

Kassie Gram
Hart Intercivic
1650 Coal Creek Drive
Lafayette, CO 80026

July 13, 2007

Re: 2007-CDOS-HAR-001-0404

Mrs. Gram,

Thank you for your response to our request from June 27th. We have been on hold with your application for certification for the past two weeks until this issue, along with the PDI issue, Pixel Data and INI files from June 13th are resolved. All of these items are outstanding and have put our office at risk of meeting the requirements for completing the decision to certify your system within the timeframes described by Colorado Revised Statutes. If we do not complete these items within the next 5 business days (July 20th), the testing board will move beyond these issues and record the appropriate evaluation for non-completion of the trusted build requirements as necessary for each component. I strongly encourage you to not let this happen, and to not continue with delays to our process. The Secretary has placed a significant amount of interest in the security that the trusted build of your voting system will bring to the voting systems in use within the state. Please coordinate with us the completion of all outstanding trusted build items so that we can move on.

You are correct in citing Secretary of State Rule 45.6.2.1.3 for the loading for the testing board of your application. As stated, this requirement is as follows:

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.

The intent of this requirement is to address the entirety of your proprietary software with confirmation of hash values. You have provided us merely a list of 25 files which you are claiming to be the only static files of the over 500 program files that were installed by the single executable file that we received from the VSTL. Should this be the case or as you have also indicated that the additional files are COTS program files, the VSTL who completed your software testing should be able to verify these facts, indicate the reason for their existence in your installation files, confirmation that there is no modification to the COTS status given the files, and confirmation that the installation file is the compiled result of the 25 proprietary static files and the 475 COTS files. We require either this additional supporting documentation to move forward from this point, or the complete set of hash values to match your installed application files as requested on the 25th of June.

We have additionally explained our position in our June 25th letter regarding the static/dynamic states of the file, and I will reiterate the point that it is critical for our testing board to establish this baseline from a trusted source such as the VSTL in order to implement a verification of software files in the field. We will verify through testing which specific files are dynamic from the post-installation point, and verify a known expected outcome in the field. Without this baseline, you will be forcing the counties into a "rebuild" or

"reload" state for their software and firmware components any time a compromise in custody and security of their devices exist. This is an unneeded burden that we are trying to avoid, with your cooperation of this process.

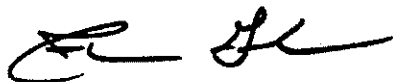
From our discussions with current VSTLs on this subject, if these files were indeed used in the determination of the qualification of your system against the 2002 VSS the provision of MD5 hash values could be completed in a matter of hours.

Finally, we have received confirmation that your Pixel Data files and INI files are within compliance with the 2002 VSS; however we did not receive these files and the MD5 hash values from Systest. A request was submitted for this information, as has been our protocol from the beginning of this process, on July 10th.

To move forward with your system components, our office needs the above information as requested. Please provide an estimate as to the date(s) that our testing board would receive the above listed items.

Please contact me directly if you have any additional questions regarding these items. We look forward to moving forward with your application and working with your team to resolve these issues; however time is of the essence and we anticipate a rapid result to these outstanding issues to meet our obligations to complete the decision process with your application.

Sincerely,

A handwritten signature in black ink, appearing to be "John Gardner", written in a cursive style.

John Gardner
Voting Systems Program Manager
Colorado Department of State
1700 Broadway, Ste 270
Denver, CO 80290
Office: 303.894.2200 ext. 6318
Fax: 303.869.4861

Melanie Stuart

From: John Gardner
Sent: Friday, July 13, 2007 8:31 PM
To: Tim Bishop; Melanie Stuart; Michael Chadwell; Geneice Mathews; Jerome Lovato
Subject: RE: Hash value request
Attachments: Hart response to HASH request - printable.doc

Here's a printable version....

Thanks,
John G.

From: Gram, Kassie [mailto:kgram@hartic.com]
Sent: Friday, July 13, 2007 5:02 PM
To: John Gardner; Lubthisophon, Paul; Tim Bishop
Cc: Melanie Stuart; Michael Chadwell; Geneice Mathews; Harrell, Travis; McClure, Neil
Subject: RE: Hash value request

John,

Attached is the letter from Hart in response to your request. We are in the process of ironing out a few things in regard to PDI documentation. I hope to be able to get back to regarding the PDI on Monday.

Thanks,
Kassie

From: John Gardner [mailto:john.gardner@sos.state.co.us]
Sent: Wednesday, June 27, 2007 7:41 PM
To: Lubthisophon, Paul; Gram, Kassie; Tim Bishop
Cc: Melanie Stuart; Michael Chadwell; Geneice Mathews
Subject: RE: Hash value request

Paul and Kassie, please refer to the attached document for our request of additional Hash values for your election management software.

Thank you,
John Gardner

From: Lubthisophon, Paul [mailto:PLubthisophon@hartic.com]
Sent: Wednesday, June 27, 2007 1:46 PM
To: John Gardner; Gram, Kassie; Tim Bishop
Cc: Melanie Stuart; Michael Chadwell; Geneice Mathews
Subject: Hash value request

John

Kassie and the management team has ask me for a status update of the letter you were going to send us

7/16/2007

discussing the files and hash values. When can we expect it?

Paul Lubthisophon
Regulatory Compliance Specialist
Hart InterCivic - Colorado
303-531-4486 voice direct
303-385-6477 facsimile
plubthisophon@hartic.com

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7/16/2007



HART
intercivic™

July 13, 2007

Colorado Department of State
John Gardner
1700 Broadway, Suite 270
Denver, CO 80290

Mr. Gardner,

I am writing in response to your letter dated June 27th requesting the VSTL create hash values for all files that result from the installation of Hart's System 6.0. After careful review of your request and Rule 45, we believe that your request is an effort to satisfy the requirement as stated in the last sentence of clause 45.6.2.1|3 in Rule 45. For ease of reference, this clause states the following:

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.

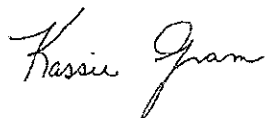
This clause specifically addresses proprietary software and the last sentence requires only the proprietary software to have the hash values verified after installation. We have supplied the information necessary to perform the verification of Hart proprietary software with the exception of dynamic files. The remainder of the files created during the installation process come from COTS products.

The question of hash values for dynamic files requires consideration of the practical aspects of the State's objective. We understand the State's need to verify that the installed version is the same version that was tested by the ITA, which is accomplished through a chain of custody process. We also understand the need to verify that the proprietary software has not changed from the time it was tested and witness built by VSTL, installed by the State and subsequently, during use in the field. This verification cannot be achieved as a practical matter for dynamic files. For example, in the Ballot Now folders you will find a BNSecurity.cfg file and a BNSecurity.db file. These files change with each installation and therefore will produce a different hash value for each installation of the application. Because these files change, a hash value is an ineffective means of verifying that the file hasn't been changed. Furthermore, creating and publishing hash values for dynamic files creates a tremendous opportunity for misinterpretation by the public, jeopardizing the confidence in the voting system.

We understand your need to prove that this is the system that was tested by the ITA. We have documented the steps taken to meet the requirements of your strong chain-of-custody procedures and, when coupled with the hash values for the static proprietary software, will satisfy the requirements for verification that the software installed is the certified software (per clause 45.5.2.3.12 – comparison of trusted build or other reference information).

I hope this addresses your request and we can resolve this issue so that we can move forward into functional testing. Please don't hesitate to contact me if you have any further questions.

Sincerely,

A handwritten signature in cursive script that reads "Kassie Gram".

Kassie Gram
Regulatory Compliance Manager
303.385.8036
kgram@hartic.com

Melanie Stuart

From: John Gardner
Sent: Tuesday, July 10, 2007 9:15 AM
To: Jim Nilius
Cc: Gram, Kassie; Melanie Stuart; Tim Bishop; Michael Chadwell; Geneice Mathews
Subject: pixdata.crc/escan.ini
Follow Up Flag: Follow up
Flag Status: Yellow

Jim, we have received your letter dated July 6th regarding the referenced files. Thank you for reviewing and providing clarification to the information contained within these files. Is it possible to complete the circle on these files by sending us the version of the files that you reviewed along with the MD5 Hash Values as per our normal procedures for creating a trusted build of the Hart Voting System for Colorado?

Thank you,

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

7/10/2007

Melanie Stuart

From: John Gardner
Sent: Wednesday, June 27, 2007 7:41 PM
To: Lubthisophon, Paul; Gram, Kassie; Tim Bishop
Cc: Melanie Stuart; Michael Chadwell; Geneice Mathews
Subject: RE: Hash value request
Attachments: 2007-CDOS-HAR-001-0404 - Phase III- hash request.pdf

Paul and Kassie, please refer to the attached document for our request of additional Hash values for your election management software.

Thank you,
John Gardner

From: Lubthisophon, Paul [mailto:PLubthisophon@hartic.com]
Sent: Wednesday, June 27, 2007 1:46 PM
To: John Gardner; Gram, Kassie; Tim Bishop
Cc: Melanie Stuart; Michael Chadwell; Geneice Mathews
Subject: Hash value request

John

Kassie and the management team has ask me for a status update of the letter you were going to send us discussing the files and hash values. When can we expect it?

Paul Lubthisophon
Regulatory Compliance Specialist
Hart InterCivic - Colorado
303-531-4486 voice direct
303-385-6477 facsimile
plubthisophon@hartic.com

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6/28/2007

STATE OF COLORADO
Department of State

1700 Broadway, Suite 270
Denver, CO 80290



Mike Coffman
Secretary of State

Holly Lowder
Director, Elections

Kassie Gram
Hart Intercivic
1650 Coal Creek Drive
Lafayette, CO 80026

June 27, 2007

Re: 2007-CDOS-HAR-001-0404

Mrs. Gram,

As discussed with your office on June 25th during the verification and installation of the trusted build, we are requesting additional "evidentiary information" on the hash files for the Election Management Software (EMS) that you have submitted for certification. Specifically, the testing board has requested that the files that are 'expanded' from the executable file are required to come from the voting system testing laboratory (VSTL) with HASH values. We understand through our discussions that the files WILL change once election data has been executed with the software. We are however, looking to create a baseline of values with your software, particularly considering that your list of trusted build files includes 25 files, and we received one executable file which generated over 500 program files. Having the assurance that these program files are the same ones that the VSTL used in qualifying your system to NASED can be provided by receiving the HASH values from the VSTL of the files PRIOR to loading election data.

We are of the understanding that this request could be accomplished within an hour or two of the VSTL receiving the executable file and the original HASH value for that particular file. An expansion of the executable could be reviewed to generate the new HASH values, and submitted back to the State.

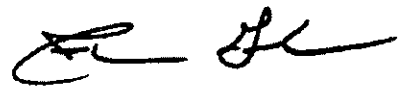
Also, in this request, as this is a baseline request of your software, it's important to create the HASH value from each individual software component separately from the other software loads. This will ensure the baseline will match the testing board's determination of a state baseline. We have agreed to work with your office on the effects of loading multiple software components to evaluate what should be an expected outcome of trusted build files changing with support from your documentation.

Additionally, we are still anticipating the requested information from the testing board on 6/13 regarding the PDI version number that was tested by the ITA. While we have concluded that this firmware is a COTS product that is not subject to ITA testing under the 2002 VSS, we do not have any documentation of the specific version number that was used during the functional testing by the ITA.

To move forward with your system components, our office needs the above information as requested. Please provide an estimate as to the date(s) that our testing board would receive the above listed items.

Please contact me directly if you have any additional questions regarding these items. We look forward to moving forward with your application and working with your team to resolve these issues.

Sincerely,



John Gardner
Voting Systems Program Manager
Colorado Department of State
1700 Broadway, Ste 270
Denver, CO 80290
Office: 303.894.2200 ext. 6318
Fax: 303.869.4861

Melanie Stuart

From: John Gardner
Sent: Monday, June 25, 2007 10:56 AM
To: Gram, Kassie; Lubthisophon, Paul
Cc: Tim Bishop; Geneice Mathews; Michael Chadwell; Melanie Stuart
Subject: RE: Hart Hashes

Tomorrow is great.

Thanks,
John G.

-----Original Message-----

From: Gram, Kassie [mailto:kgram@hartic.com]
Sent: Monday, June 25, 2007 10:56 AM
To: John Gardner; Lubthisophon, Paul
Cc: Tim Bishop; Geneice Mathews; Michael Chadwell; Melanie Stuart
Subject: RE: Hart Hashes

John,

Paul and I are available tomorrow to start at 9:00, if you are available. If not, let me know what days are good for you.

Thanks,
Kassie

-----Original Message-----

From: John Gardner [mailto:john.gardner@sos.state.co.us]
Sent: Monday, June 25, 2007 10:41 AM
To: Lubthisophon, Paul; Gram, Kassie
Cc: Tim Bishop; Geneice Mathews; Michael Chadwell; Melanie Stuart
Subject: RE: Hart Hashes

Paul, we are ready to move forward. We still are missing some drivers for the server, but I imagine you will be bringing those with you. What is your preference for moving forward?

Thanks,
John G.

-----Original Message-----

From: Lubthisophon, Paul [mailto:PLubthisophon@hartic.com]
Sent: Friday, June 22, 2007 11:57 AM
To: John Gardner; Gram, Kassie
Cc: Tim Bishop; Geneice Mathews; Michael Chadwell; Melanie Stuart
Subject: RE: Hart Hashes

John

Great, we'll be waiting here for your notification so we can continue with the installs. I also have the driver cd for the dell GX520.

Thanks again,
Paul Lubthisophon

-----Original Message-----

From: John Gardner [mailto:john.gardner@sos.state.co.us]
Sent: Friday, June 22, 2007 10:16 AM
To: Lubthisophon, Paul; Gram, Kassie
Cc: Tim Bishop; Geneice Mathews; Michael Chadwell; Melanie Stuart

Subject: Re: Hart Hashes

Paul, the team has decided to start over and reinstall the OS and are if we can duplicate this problem.

We understand its a COTS issue, but we are trying to establish a good baseline before moving forward.

I'll let you know our results.

Thanks,
John G.

Sent via out of office e-mail response.

-----Original Message-----

From: "Lubthisophon, Paul" <PLubthisophon@hartic.com>

Date: Fri, 22 Jun 2007 10:04:12

To: "John Gardner" <john.gardner@sos.state.co.us>, "Gram, Kassie" <kgram@hartic.com>

Cc: "Tim Bishop" <tim.bishop@sos.state.co.us>, "Geneice Mathews"

<Geneice.Mathews@sos.state.co.us>, "Michael Chadwell"

<Michael.Chadwell@sos.state.co.us>, "Melanie Stuart"

<Melanie.Stuart@sos.state.co.us>

Subject: RE: Hart Hashes

John

I have forwarded these issues to our network administrator, application engineer and the manager of elections solutions. We are all in agreement that these file are COTS files, and we have no control over these file. The 2 machines provide are the same model, but we cannot guarantee they have identical internal hardware (CD Drives, LCD's, RAM, Motherboards, Hard drives ect.) model numbers and board revision levels. Any variation of the hardware pieces will cause different drivers to be installed. The LOG files as well as many of the other files listed could contain time and date stamp information specific to when the driver was installed.

I hope that this will not stop the install process, if you still feel it does, I would like to schedule a conference call with the Hart above parties listed above to resolve this issue.

Paul Lubthisophon

Regulatory Compliance Specialist

Hart InterCivic - Colorado

303-531-4486 voice direct

303-385-6477 facsimile

plubthisophon@hartic.com <mailto:plubthisophon@hartic.com>

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From: John Gardner [mailto:john.gardner@sos.state.co.us]

Sent: Thursday, June 21, 2007 7:31 PM

To: Lubthisophon, Paul; Gram, Kassie

Cc: Tim Bishop; Geneice Mathews; Michael Chadwell; Melanie Stuart
Subject: FW: Hart Hashes

Paul, in addition to the other discussion points, these files have us at a stopping point as well. We've loaded the two laptops provided in an identical fashion yet there are discrepancies in the types of files loaded onto each system. Specifically, there are 1400 files different between the two machines. Only OS and COTS products provided by you have been loaded on the devices. No election management software has been loaded at this time.

Can you please provide some clarification as to why these two machines would be different to this amount?

Thank you,
John G.

Melanie Stuart

From: John Gardner [john.gardner@sos.state.co.us]
Sent: Friday, June 22, 2007 10:16 AM
To: Lubthisophon, Paul; Gram, Kassie
Cc: Tim Bishop; Geneice Mathews; Michael Chadwell; Melanie Stuart
Subject: Re: Hart Hashes

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I'll let you know our results.

Thanks,
John G.

Sent via out of office e-mail response.

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Date: Fri, 22 Jun 2007 10:04:12

To: "John Gardner" <john.gardner@sos.state.co.us>, "Gram, Kassie" <kgram@hartic.com>

Cc: "Tim Bishop" <tim.bishop@sos.state.co.us>, "Geneice Mathews"

<Geneice.Mathews@sos.state.co.us>, "Michael Chadwell"

<Michael.Chadwell@sos.state.co.us>, "Melanie Stuart"

<Melanie.Stuart@sos.state.co.us>

Subject: RE: Hart Hashes

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Paul Lubthisophon
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Hart InterCivic - Colorado
303-531-4486 voice direct
303-385-6477 facsimile
plubthisophon@hartic.com <mailto:plubthisophon@hartic.com>

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To: Lubthisophon, Paul; Gram, Kassie
Cc: Tim Bishop; Geneice Mathews; Michael Chadwell; Melanie Stuart
Subject: FW: Hart Hashes

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Can you please provide some clarification as to why these two machines would be different to this amount?

Thank you,
John G.

Melanie Stuart

From: John Gardner
Sent: Thursday, June 21, 2007 6:18 PM
To: Lubthisophon, Paul; Gram, Kassie; Tim Bishop
Cc: Braithwaite, Phillip; Melanie Stuart; Michael Chadwell; Geneice Mathews
Subject: RE: Hart Software Install

Follow Up Flag: Follow up
Flag Status: Orange

Paul, this document does not reference either the pixel data issue discovered on the eSlate, or the unique Hart "INI" file that you are using on the eScan units. We have discovered that both of these files are Hart specific files. Why are these files omitted from this list of "hart files?"

Is this list intended to be not inclusive of ALL Hart files?

Concerning the ini file, Kassie made an indication that this file could be presented to our office for review. Would you be willing to bring this file down on Friday as well, assuming it is not in the trusted build files from the ITA?

Thank you,
John Gardner

-----Original Message-----

From: Lubthisophon, Paul [mailto:PLubthisophon@hartic.com]
Sent: Thursday, June 21, 2007 5:27 PM
To: John Gardner; Gram, Kassie; Tim Bishop
Cc: Braithwaite, Phillip; Melanie Stuart
Subject: RE: Hart Software Install

John

I'm not sure if this document has made it down to your location.

Paul Lubthisophon

-----Original Message-----

From: John Gardner [mailto:john.gardner@sos.state.co.us]
Sent: Thursday, June 21, 2007 12:42 PM
To: Lubthisophon, Paul; Gram, Kassie; Tim Bishop
Cc: Braithwaite, Phillip; Melanie Stuart
Subject: RE: Hart Software Install

Paul, this should be fine. If you can bring the disk over, we'll get the system moving as soon as possible. It may not be right away, but probably within the hour of receiving the disk we can move forward.

Thanks,
John G.

-----Original Message-----

From: Lubthisophon, Paul [mailto:PLubthisophon@hartic.com]
Sent: Thursday, June 21, 2007 9:39 AM
To: John Gardner; Gram, Kassie; Tim Bishop
Cc: Braithwaite, Phillip; Melanie Stuart
Subject: RE: Hart Software Install

John

I will be receiving the drivers' cd from our Austin IT department Friday morning. I would like to bring over the CD right away, and continue with as much of the install process as possible. Can you schedule support this? If not, can you provide a time when we can continue the install process?

Thank you, Paul Lubthisophon

-----Original Message-----

From: John Gardner [mailto:john.gardner@sos.state.co.us]
Sent: Wednesday, June 20, 2007 4:03 PM
To: Gram, Kassie; Tim Bishop; Lubthisophon, Paul
Cc: Braithwaite, Phillip; Melanie Stuart
Subject: Re: Hart Software Install

Kassie, we do not have the drivers and updates for the optiplex gx520. Once we have these and hash the machine we'll be able to move forward again.

Do you have that information for us?

Thanks,
John G.

Sent via out of office e-mail response.

-----Original Message-----

From: "Gram, Kassie" <kgram@hartic.com>

Date: Wed, 20 Jun 2007 14:35:29

To: <john.gardner@sos.state.co.us>, <tim.bishop@sos.state.co.us>, "Lubthisophon, Paul" <PLubthisophon@hartic.com>

Cc: "Braithwaite, Phillip" <PBraithwaite@hartic.com>

Subject: Hart Software Install

John,

I have been called out to help with another State's certification. However, in the interest of moving forward, Paul Lubthisophon is ready to walk you through the installation.

If you need it, Paul's contact information is:

plubthisophon@hartic.com <mailto:plubthisophon@hartic.com>
303-531-4486

I hope we can get this accomplished this week.

Thanks,
Kassie

Melanie Stuart

From: Lubthisophon, Paul [PLubthisophon@hartic.com]
Sent: Thursday, June 21, 2007 3:04 PM
To: John Gardner; Gram, Kassie; Tim Bishop
Cc: Braithwaite, Phillip; Melanie Stuart
Subject: RE: Hart Software Install

John

Our FedEx delivery usually arrives at approximately 0900 to 0930hrs, and I will be leaving here as soon as I get the cd in my hands.

Thank you,
Paul

-----Original Message-----

From: John Gardner [mailto:john.gardner@sos.state.co.us]
Sent: Thursday, June 21, 2007 12:42 PM
To: Lubthisophon, Paul; Gram, Kassie; Tim Bishop
Cc: Braithwaite, Phillip; Melanie Stuart
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To: <john.gardner@sos.state.co.us>, <tim.bishop@sos.state.co.us>, Paul" <PLubthisophon@hartic.com>

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Cc: "Braithwaite, Phillip" <PBraithwaite@hartic.com>

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303-531-4486

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Thanks,
Kassie

Melanie Stuart

From: John Gardner
Sent: Thursday, June 21, 2007 5:59 PM
To: Tim Bishop; Geneice Mathews; Michael Chadwell
Cc: Melanie Stuart
Subject: FW: Hart Software Install

Follow Up Flag: Follow up
Flag Status: Orange

Attachments: Verify_Hash _2_.pdf



Verify_Hash
2.pdf (103 KB)

This is interesting.....

Of course, since we "stumbled" across Hart files that are not included in this message (I didn't see reference for either the pixel data or the eScan INI file) we now know there may be others.

We can of course verify this minimum list against ITA values provided, and it does give some info on the XML verify process that was previously discussed. Should be interesting moving forward.

Thanks,
John G.

-----Original Message-----

From: Lubthisophon, Paul [mailto:PLubthisophon@hartic.com]
Sent: Thursday, June 21, 2007 5:27 PM
To: John Gardner; Gram, Kassie; Tim Bishop
Cc: Braithwaite, Phillip; Melanie Stuart
Subject: RE: Hart Software Install

John

I'm not sure if this document has made it down to your location.

Paul Lubthisophon

-----Original Message-----

From: John Gardner [mailto:john.gardner@sos.state.co.us]
Sent: Thursday, June 21, 2007 12:42 PM
To: Lubthisophon, Paul; Gram, Kassie; Tim Bishop
Cc: Braithwaite, Phillip; Melanie Stuart
Subject: RE: Hart Software Install

Paul, this should be fine. If you can bring the disk over, we'll get the system moving as soon as possible. It may not be right away, but probably within the hour of receiving the disk we can move forward.

Thanks,
John G.

-----Original Message-----

From: Lubthisophon, Paul [mailto:PLubthisophon@hartic.com]
Sent: Thursday, June 21, 2007 9:39 AM

To: John Gardner; Gram, Kassie; Tim Bishop
Cc: Braithwaite, Phillip; Melanie Stuart
Subject: RE: Hart Software Install

John

I will be receiving the drivers' cd from our Austin IT department Friday morning. I would like to bring over the CD right away, and continue with as much of the install process as possible. Can you schedule support this? If not, can you provide a time when we can continue the install process?

Thank you, Paul Lubthisophon

-----Original Message-----

From: John Gardner [mailto:john.gardner@sos.state.co.us]
Sent: Wednesday, June 20, 2007 4:03 PM
To: Gram, Kassie; Tim Bishop; Lubthisophon, Paul
Cc: Braithwaite, Phillip; Melanie Stuart
Subject: Re: Hart Software Install

Kassie, we do not have the drivers and updates for the optiplex gx520. Once we have these and hash the machine we'll be able to move forward again.

Do you have that information for us?

Thanks,
John G.

Sent via out of office e-mail response.

-----Original Message-----

From: "Gram, Kassie" <kgram@hartic.com>

Date: Wed, 20 Jun 2007 14:35:29

To: <john.gardner@sos.state.co.us>, <tim.bishop@sos.state.co.us>, "Lubthisophon, Paul" <PLubthisophon@hartic.com>

Cc: "Braithwaite, Phillip" <PBraithwaite@hartic.com>

Subject: Hart Software Install

John,

I have been called out to help with another State's certification. However, in the interest of moving forward, Paul Lubthisophon is ready to walk you through the installation.

If you need it, Paul's contact information is:

plubthisophon@hartic.com <mailto:plubthisophon@hartic.com>
303-531-4486

I hope we can get this accomplished this week.

Thanks,
Kassie

Melanie Stuart

From: Lubthisophon, Paul [PLubthisophon@hartic.com]
Sent: Thursday, June 21, 2007 5:27 PM
To: John Gardner; Gram, Kassie; Tim Bishop
Cc: Braithwaite, Phillip; Melanie Stuart
Subject: RE: Hart Software Install

Follow Up Flag: Follow up
Flag Status: Orange

Attachments: Verify_Hash _2_.pdf



Verify_Hash
2.pdf (103 KB)

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Cc: "Braithwaite, Phillip" <PBraithwaite@hartic.com>

Subject: Hart Software Install

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plubthisophon@hartic.com <mailto:plubthisophon@hartic.com>
303-531-4486

I hope we can get this accomplished this week.

Thanks,
Kassie



HART
i n t e r c i v i c TM

Procedure, Verify Hash Values (Colorado Specific – System 6.0)

Hart InterCivic Voting System

CONFIDENTIAL

| | | |
|--|-----------------------------------|-------------|
| This DOCUMENT contains confidential and proprietary information belonging exclusively to Hart InterCivic, Inc. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means electronic, mechanical, photocopied, recorded, or otherwise without prior written permission of Hart InterCivic, Inc. Copyright© 2007, Hart Intercivic, Inc. | Hart InterCivic | |
| | Part Number: 1003127 | REV: A |
| | Part Name: Verify HVS Hash Values | |
| | File Name:Verify_Hash.doc | Page 1 of 8 |

Change History

| Version | Date | Author | Description |
|---------|---------|----------------------|--|
| 1.0 | 5/21/07 | Steven Gonzalez | Initial release |
| 2.0 | 6/4/07 | Steven Gonzalez | Format and text updates |
| A | 6/5/07 | Paul Lubthisophon | Format changes to table of content and footer – added part number |
| | | | |
| | | | |
| | | | |
| | | | |

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SECTION 1. INTRODUCTION

PURPOSE

The purpose of this document is to describe the procedure on creating and verifying all possible application and firmware files for the Hart InterCivic Voting System.

SCOPE

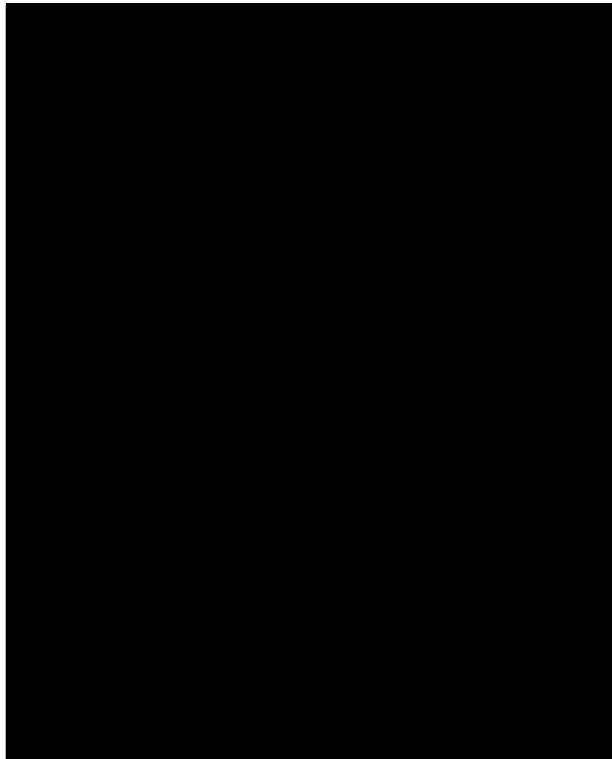
This document covers the procedures for creating a hash value for every file that is created by Hart InterCivic and used by the eVoting system. Each of these files is a file that is compiled by Hart InterCivic and does not change in any way due to usage of the file. These files can be used to validate a Hart InterCivic's application installation is the actual certified application for that system version. The NSRL website contains the MD5 and SHA-1 has values for the files listed below. These hash values were created by the NSRL.

SECTION 2. APPLICATION FILES

Below is a list of all files for each application that can be hashed in order to validate the authenticity of the installed application. All other files will vary in size during normal use of the application.

BALLOT NOW

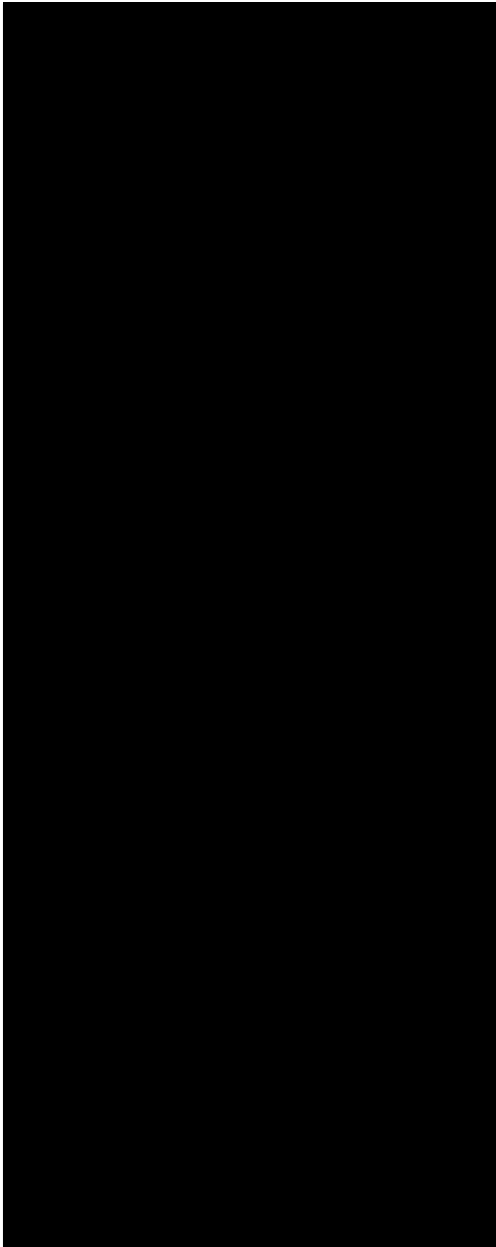
Files can be found under C:\Program Files\Hart Intercivic\Ballot Now and C:\Program Files\Hart Intercivic\Shared.



SecurityDBAuditLog.rpt
ServerXControl.ocx
SummaryBatchReport.rpt
UnResolvedBallots.rpt

BOSS

Files can be found under C:\BOSS and C:\Program Files\Hart Intercivic\Shared.



RALLY

Files can be found under C:\Program Files\Hart Intercivic\Rally and C:\Program Files\Hart Intercivic\Shared.

**TALLY**

Files can be found under C:\Program Files\Hart Intercivic\Tally and C:\Program Files\Hart Intercivic\Shared.



TallySettings.dll
TFCore.exe
WriteInResolution.dll

SERVO

Files can be found under C:\Program Files\Hart Intercivic\SERVO and C:\Program Files\Hart Intercivic\Shared.



ECM MANAGER

Files can be found under C:\Program Files\Hart Intercivic\ECM Manager and C:\Program Files\Hart Intercivic\Shared.

eCMManager.exe
eCMManager.ico

JBC

(File not found on PC. File is on voting unit)
JBC.bin

ESLATE

(File not found on PC. File is on voting unit)
eSlate.bin

ESCAN

(File not found on PC. File is on voting unit)
eScan.exe

SECTION 3. CREATING HASH VALUES

CREATING AND VERIFYING HASH VALUE PROCESS

In order to perform the creation and verification of the hash values for the Hart InterCivic Voting System you will need a utility to create an MD5 or SHA-1 value based on a file, SERVO (a Hart InterCivic application), the Hart InterCivic XML file containing the hash values for use with SERVO, and the hash values from the NSRL voting website.

PROCESS FOR PC APPLICATIONS

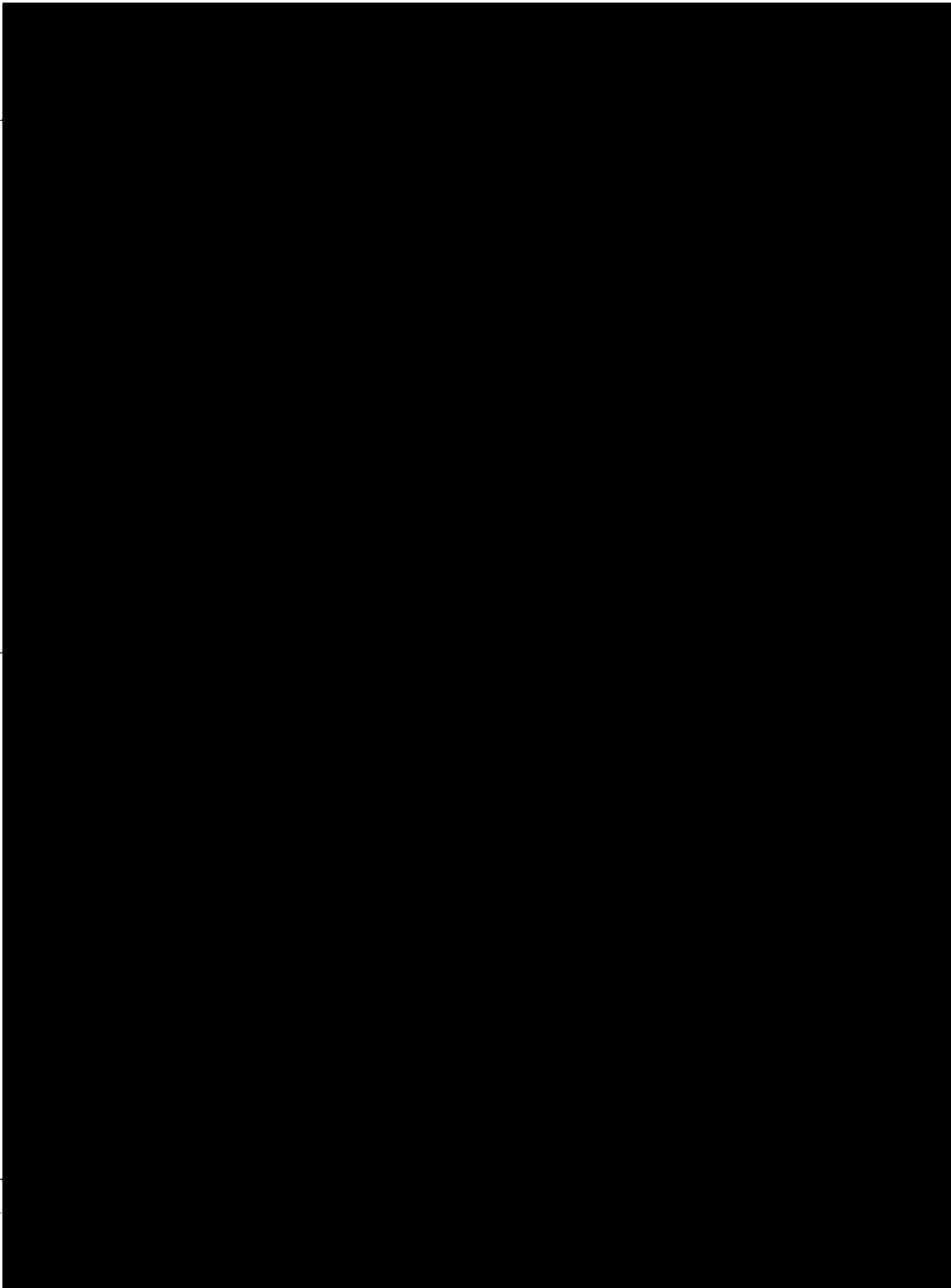
1. Using a hash utility, create the MD5 or SHA-1 hash values for the appropriate files.
2. Compare the hash values created against those from the NSRL website.

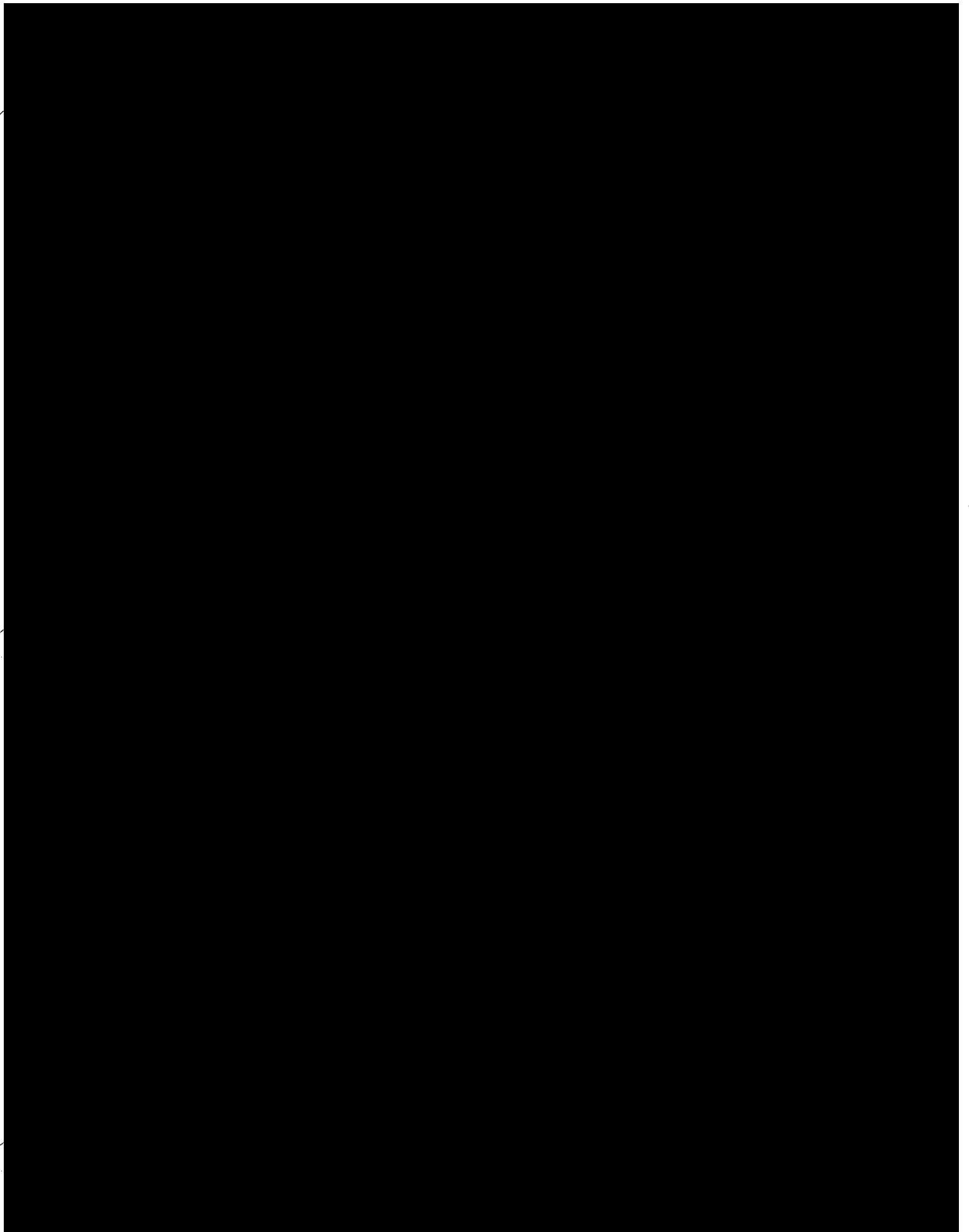
PROCESS FOR VOTING DEVICES

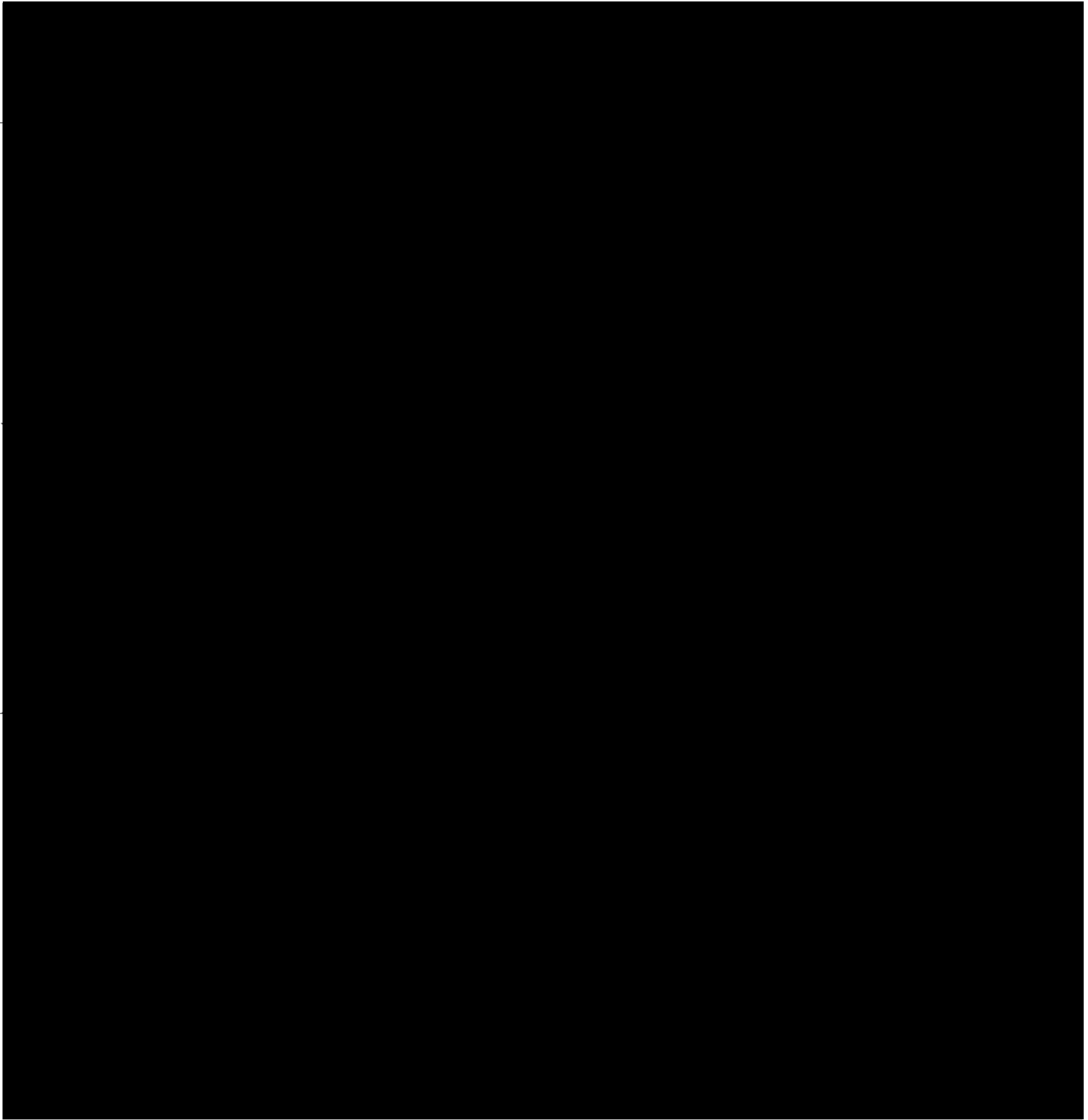
1. After verifying the SERVO application with the process above, start SERVO.
2. Import the Hart InterCivic XML file. (Refer to Chapter 3 of the SERVO manual for detailed instructions on importing the file if needed.)
3. Select the Backup and Reset option from the Device menu. (Refer to Chapter 3 of the SERVO manual for detailed instructions on importing the file if needed.)
4. Select the Verify Device Firmware checkbox.
5. Connect the device using the correct port.

SERVO will display 2 messages if a mismatch of the version and hash occurs. If there is no mismatch no message is displayed.

To test this process by forcing a mismatch, open the Hart InterCivic XML file using notepad or another XML editor and change the value for hash attribute. Then perform steps 2 – 5 again.







Melanie Stuart

From: Gram, Kassie [kgram@hartic.com]
Sent: Monday, June 18, 2007 5:02 PM
To: John Gardner; Lubthisophon, Paul
Cc: Tim Bishop; Geneice Mathews; Michael Chadwell; Wayne Munster; Melanie Stuart
Subject: RE: 2007-CDOS-HAR-001-0404 - Request for Additional Review

Sounds good – Thanks you for the confirmation.

Kassie

From: John Gardner [mailto:john.gardner@sos.state.co.us]
Sent: Monday, June 18, 2007 4:53 PM
To: Gram, Kassie; Lubthisophon, Paul; McClure, Neil; Hunsaker, Scott
Cc: Tim Bishop; Geneice Mathews; Michael Chadwell; Wayne Munster; Melanie Stuart
Subject: RE: 2007-CDOS-HAR-001-0404 - Request for Additional Review

Kassie, we are continuing on with the Server/Laptop installation as we had previously discussed. We do not have either of these ready at this time to load your Election Management Software though. These may be ready by the end of day tomorrow though.

Thanks,
John G.

From: Gram, Kassie [mailto:kgram@hartic.com]
Sent: Monday, June 18, 2007 3:35 PM
To: John Gardner; Lubthisophon, Paul; McClure, Neil; Hunsaker, Scott
Cc: Tim Bishop; Geneice Mathews; Michael Chadwell; Wayne Munster; Melanie Stuart
Subject: RE: 2007-CDOS-HAR-001-0404 - Request for Additional Review

John – I have received your request. We are still working to gather the information so that we can respond appropriately. I will get back with you regarding your request as quickly as I can.

Just to check, while we are looking into your request, do you feel that you are able to continue with creating the clean install?

Please let me know.

Thanks!

Kassie

From: John Gardner [mailto:john.gardner@sos.state.co.us]
Sent: Monday, June 18, 2007 2:48 PM
To: Lubthisophon, Paul; McClure, Neil; Hunsaker, Scott; Gram, Kassie
Cc: Tim Bishop; Geneice Mathews; Michael Chadwell; Wayne Munster; Melanie Stuart
Subject: 2007-CDOS-HAR-001-0404 - Request for Additional Review

Kassie, please refer to the attached documents regarding the Colorado Secretary of State's request for additional review of software components for your proposed system. If you have any questions regarding this request, please contact me directly at my office.

6/19/2007

Thank you,

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

6/19/2007

Melanie Stuart

From: John Gardner
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Cc: Tim Bishop; Geneice Mathews; Michael Chadwell; Wayne Munster; Melanie Stuart
Subject: RE: 2007-CDOS-HAR-001-0404 - Request for Additional Review
Follow Up Flag: Follow up
Flag Status: Blue

John - I have received your request. We are still working to gather the information so that we can respond appropriately. I will get back with you regarding your request as quickly as I can.

Just to check, while we are looking into your request, do you feel that you are able to continue with creating the clean install?

Please let me know.

Thanks!

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(o) 303-894-2200 ext. 6318
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(f) 303-869-4861

6/18/2007

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From: John Gardner
Sent: Monday, June 18, 2007 2:48 PM
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Cc: Tim Bishop; Geneice Mathews; Michael Chadwell; Wayne Munster; Melanie Stuart
Subject: 2007-CDOS-HAR-001-0404 - Request for Additional Review
Attachments: 2007-CDOS-HAR-001-0404 - Phase III-additional review.pdf

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John Gardner
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6/18/2007

STATE OF COLORADO
Department of State

1700 Broadway, Suite 270
Denver, CO 80290



Mike Coffman
Secretary of State

Holly Lowder
Director, Elections

Kassie Gram
Hart Intercivic
1650 Coal Creek Drive
Lafayette, CO 80026

June 18, 2007

Re: 2007-CDOS-HAR-001-0404

Mrs. Gram,

As discussed with you on June 13th during the verification and installation of the trusted build, we are requesting additional information on the "Pixel Data" files for the eSlate unit (DRE) that you have submitted for certification. Specifically, it has been discovered by the testing board that this particular firmware/software component is in fact developed by Hart InterCivic and has not been tested according to state requirements for software/firmware.

The requirements for Colorado voting systems require all voting system software to:

- Be independently tested by a recognized independent testing authority (1-5-608.5 C.R.S);
- Meet the requirements of the 2002 Voting System Standards (VSS) by the FEC (1-5-601.5 C.R.S); and
- Be provided to our office through proper evidentiary methods (Rule 45.1.17).

It has been determined that the referenced "Pixel Data" files have not been tested by an ITA to the 2002 standards, and have not been received by our office including the evidence of such testing.

Therefore, our office has concluded the appropriate course of action to take with this matter is to request your organization to submit this component to one of the two currently certified VSTLs. It's our understanding from our discussion with these labs that this evaluation will take roughly 4-5 business days to complete.

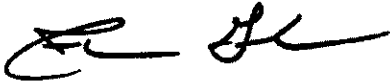
On a second note, we have received information of additional "initialization" (ini) files that are being used by Hart InterCivic on the eScan (OS) devices in the field which provide additional functionality to the OS units. From our notes on the trusted build for the eScan firmware, this "ini" file was not included. We request at this time for you to clarify our understanding of this and/or have the ITA submit the appropriate file(s) for the OS unit as appropriate according to Colorado requirements.

Finally, we are still anticipating the requested information from the testing board on 6/13 regarding the PDI version number that was tested by the ITA. While we have concluded that this firmware is a COTS product that is not subject to ITA testing under the 2002 VSS, we do not have any documentation of the specific version number that was used during the functional testing by the ITA.

To move forward with your system components, our office needs the above information as requested. Please provide an estimate as to the date(s) that our testing board would receive the above listed items.

Please contact me directly if you have any additional questions regarding these items. We look forward to moving forward with your application and working with your team to resolve these issues.

Sincerely,

A handwritten signature in black ink, appearing to be "John Gardner", written in a cursive style.

John Gardner
Voting Systems Specialist
Colorado Department of State
1700 Broadway, Ste 370
Denver, CO 80290
Office: 303.894.2200 ext. 6318
Fax: 303.869.4861

John Gardner

From: John Gardner

Sent: Monday, June 11, 2007 8:24 AM

To: Bernard Konkol; Tim Bishop; Geneice Mathews; Michael Chadwell

Cc: Wayne Munster

Steps for EMS Trusted Build - **DRAFT**

Need feedback on this procedure for EMS:

For TESTING:

- 1) Wipe computer and install OS (and patches);
- 2) Install mandatory COTS needed for EMS (and patches) – HASH Server/Workstation;
- 3) Install EMS – HASH Server/Workstation;
- 4) Compare HASH from Items 2 and 3 – this is the official BASELINE = (EMS – Static Files);
- 5) Compare 4 to NSRL/VSTL;
- 6) Run Elections for Functional Testing;
- 7) HASH Server/Workstation post testing Compare 4 and 6 – creates field BASELINE.

For Field:

- 1) HASH Field server/workstation and compare to #7 from testing.

As for the issue on Friday with alternate versions; I have confirmed that a trusted alternate version for all the components is available. We will request that, which alleviates the concern about using non-trusted software.

Let me know what you think.

Thanks,
John G.

6/11/2007

Melanie Stuart

From: Gram, Kassie [kgram@hartic.com]
Sent: Friday, June 08, 2007 1:48 PM
To: John Gardner; Tim Bishop
Cc: Bernard Konkol; Michael Chadwell; Geneice Mathews; Lubthisophon, Paul
Subject: RE: Trusted Install + a few outstanding items

Sounds good for us – 9am on Tuesday it is.

Thanks!

Kassie

From: John Gardner [mailto:john.gardner@sos.state.co.us]
Sent: Friday, June 08, 2007 11:58 AM
To: Gram, Kassie; Tim Bishop
Cc: Bernard Konkol; Michael Chadwell; Geneice Mathews; Lubthisophon, Paul
Subject: RE: Trusted Install + a few outstanding items

Thanks Kassie for the update on things. I think we should take advantage of the time you do have available on Tuesday morning to get done as much as possible. Did we set up a starting time for this? We're usually ready to go around 9:00am.

Thanks,
John G.

From: Gram, Kassie [mailto:kgram@hartic.com]
Sent: Friday, June 08, 2007 11:21 AM
To: John Gardner; Tim Bishop
Cc: Bernard Konkol; Michael Chadwell; Geneice Mathews; Lubthisophon, Paul
Subject: Trusted Install + a few outstanding items

John – We've had something come up that would require us to leave around 1:00pm on Tuesday. We are still available in the morning, before 1:00, and would definitely like to start moving forward with the installs. Based on your schedule, is it okay to try to get things going on Tuesday morning? Or, would you prefer to move a day and get started on Wednesday instead?

On a separate note, I have confirmed that the trusted build CD from CIBER does contain full hash values for BOSS only. We are working with NIST to ensure that the complete hash files for the other components are posted on their website (they told us that it would be posted by today 6/8/07).

Additionally, I now have a copy of the "final" 6.0 report that contains the test data in my possession; however, it is in word format. I have a call into CIBER (again) to have them resend as a PDF to both you and I. We'll see...

Finally – I've officially changed my last name to Gram. My new email address is kgram@hartic.com, but my phone number and title are the same.

Thanks!
Kassie

6/13/2007

Kassie Gram
Regulatory Compliance Manager
Hart InterCivic
303.385.8036

Confidentiality Notice: This email message, including all the attachments, is for the sole use of the intended recipient(s) and contains confidential information. Unauthorized use or disclosure is prohibited. If you are not the intended recipient, you may not use, disclose, copy or disseminate this information. If you are not the intended recipient, please contact the sender immediately by reply email and destroy all copies of the original message, including attachments.

6/13/2007

Melanie Stuart

From: Gram, Kassie [kgram@hartic.com]
ent: Wednesday, June 06, 2007 11:59 AM
o: John Gardner; Tim Bishop
Cc: Bernard Konkol; Geneice Mathews; Michael Chadwell; Lubthisophon, Paul
Subject: RE: Hart System 6.0

Great - we will be there at 9:00am.

One more thing - what version of windows does your SoS laptop run on? We require windows 2000 OS (with all current updates) in order to use the firmware install utilities. If you will make sure you're set up with this, I will bring all other cables and drivers for installation.

Kassie

-----Original Message-----

From: John Gardner [mailto:john.gardner@sos.state.co.us]
Sent: Wednesday, June 06, 2007 10:10 AM
To: Gram, Kassie; Tim Bishop
Cc: Bernie Konkol; Geneice Mathews; Michael Chadwell; Lubthisophon, Paul
Subject: Re: Hart System 6.0

This is fine.

Thanks,
John G.

ent via out of office e-mail response.

-----Original Message-----

From: "Keller, Kassie" <kkeller@hartic.com>

Date: Wed, 6 Jun 2007 09:30:44
To: "John Gardner" <john.gardner@sos.state.co.us>, "Tim Bishop" <tim.bishop@sos.state.co.us>
Cc: "Bernard Konkol" <Bernard.Konkol@sos.state.co.us>, "Geneice Mathews" <Geneice.Mathews@sos.state.co.us>, "Michael Chadwell" <Michael.Chadwell@sos.state.co.us>, "Lubthisophon, Paul" <PLubthisophon@hartic.com>
Subject: RE: Hart System 6.0

John - Yeah, I am aware of your procedures - I was hoping Paul would be able catch you before you closed up shop. He said he missed you... no biggie, we'll get it figured out.

Starting on Tuesday is fine. You also mentioned that you will be starting with the eScan. So that I can appropriately schedule the people I am bringing to help with the installs - can we start with burning the firmware on the JBC, eSlate, eScan and VBO on Tuesday? Then move onto the software installation from there? If not, do you have an agenda or schedule that you would prefer to follow?

Thanks,
Kassie

From: John Gardner [mailto:john.gardner@sos.state.co.us]

Sent: Tuesday, June 05, 2007 5:59 PM
To: Keller, Kassie; Tim Bishop
Cc: Bernard Konkol; Geneice Mathews; Michael Chadwell
Subject: RE: Hart System 6.0

Kassie, we are unable to work on the disks without your representatives present. Paul observed us securing the suitcase with your trusted build into our safe. We do not open these without the vendor present as an internal policy so that you know at all times what is being done with your software.

Unfortunately I also discovered that I had a previous engagement booked for Monday. Can we push this out to Tuesday/Wednesday?

Thanks,
John G.

From: Keller, Kassie [mailto:kkeller@hartic.com]
Sent: Tuesday, June 05, 2007 4:35 PM
To: John Gardner; Tim Bishop
Cc: Bernard Konkol
Subject: FW: Hart System 6.0

Here is the passphrase for the original disk. Would you try it to see if it works on the new one?

Thanks!
Kassie

From: Daily, Victor P
Sent: Tuesday, May 01, 2007 12:59 PM
To: Rainville, Paul
Cc: Macfarlane, Robert; Rohacek, Kelly A
Subject: RE: Hart Sysem 6.0

Paul,
I have FedEx'ed the DVD (1.38 GB) - please pass along the password for the encryption to the proper person.
Pw= [REDACTED]
Thanks,
Vic

Melanie Stuart

From: John Gardner
Sent: Monday, June 04, 2007 6:11 PM
To: Melanie Stuart
Subject: FW: Trusted install on Tuesday?

FYI...

Thanks,
John G.

From: Hunsaker, Scott [mailto:SHunsaker@hartic.com]
Sent: Monday, June 04, 2007 6:05 PM
To: John Gardner
Cc: McClure, Neil; Lubthisophon, Paul
Subject: RE: Trusted install on Tuesday?

John,
Both Neil and I are out of the office at the moment; however I am copying Paul Lubthisophon, our Regulatory Compliance Specialist who is covering for Kassie while she is out of the office. I will call Paul to be sure he follows up with you tomorrow and keep the processes moving forward.
Thanks!
Scott

From: John Gardner [mailto:john.gardner@sos.state.co.us]
Sent: Monday, June 04, 2007 5:58 PM
To: McClure, Neil; Hunsaker, Scott
Subject: FW: Trusted install on Tuesday?

Neil or Scott, can either of you provide an update? It's been a while since we've heard from anyone in your organization.

Thanks,
John G.

From: John Gardner
Sent: Monday, June 04, 2007 5:57 PM
To: John Gardner; 'Keller, Kassie'
Cc: Tim Bishop; Bernard Konkol; 'Lubthisophon, Paul'; Geneice Mathews; Michael Chadwell
Subject: RE: Trusted install on Tuesday?

Kassie, it's been a while since we've heard back from anyone in your office. I assume that we are still moving forward with your application for certification? We have received all of the trusted build information to move forward. We would like to work with you to install this on your components to begin the functional testing. When are you available for this?

If possible, please check with the ITA's to ensure that we have received a) all of the Hash Values necessary, b) proper chain of evidence that the CD sent is in fact the version that was tested for federal qualification, and c) any pass phrases needed to unlock the CD's.

Secondly, please review your internal processes. Any cables, utilities, or software necessary to verify and/or

6/5/2007

upload the trusted build software on all of the components of your system will be necessary for moving forward. Additionally, the testing board has been very strict on using only those utilities that originate from the SOS office. If there is anything special that we need to complete this task, please let us know.

If you have any additional questions on this, please feel free to contact me directly. In the mean time, please let us know when you plan on moving forward again.

Thank you,

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

From: John Gardner
Sent: Tuesday, May 08, 2007 5:53 PM
To: 'Keller, Kassie'
Cc: Tim Bishop; Bernard Konkol; Lubthisophon, Paul
Subject: RE: Trusted install on Tuesday?

Okay Kassie, we can update your certification application to reflect this. We are also in the process of contacting either Jennifer Price, or Betty (last name illegible) with CIBER as the documentation from the CD of the trusted build is missing, and CIBER has hand written the label for the CD rather than the usual professional looking stamp that we normally see affixed to the CD.

I think we can suffice with a letter of explanation from CIBER documenting why the CD is in the state that is, and verifying that it is indeed the trusted, tested, and/or witnessed build that was used to certify the system. If you can provide any assistance with this effort, that would be most helpful.

Thanks,
John G.

From: Keller, Kassie [mailto:kkeller@hartic.com]
Sent: Tuesday, May 08, 2007 12:19 PM
To: John Gardner
Cc: Tim Bishop; Bernard Konkol; Lubthisophon, Paul
Subject: RE: Trusted install on Tuesday?

John - You're right. We have a typo on the application. We are submitting 1.1.6 and I have corrected the application (attached).

I still haven't heard - let me know when you want to do the trusted install.

Kassie

303.385.8036

6/5/2007

From: John Gardner [mailto:john.gardner@sos.state.co.us]
Sent: Tuesday, May 08, 2007 8:33 AM
To: Keller, Kassie
Cc: Tim Bishop; Bernard Konkol
Subject: RE: Trusted install on Tuesday?

Kassie, to address your questions below.

Point #2 – about the client server, here's the text from the requirements: 45.6.1.7 The voting system provider shall provide the same class of workstation and/or server for testing the voting system as the normal production environment for the State of Colorado. I think you have three different scenarios: 1) Boulder/Douglas, 2) Montrose/Eagle, or 3) Tally Only. From what we have seen in the field, I think the laptops represent item #3 only. This is not about functionality of the system as much as it is performance for the way your organization is providing it to the counties.

Point #3 – you can have all the time you need to test the i830 to your satisfaction prior to releasing it to the testing board.

Point #4 – trusted build. We seem to have a conflict in the information that we have received. It looks as though we have everything in the trusted build except a discrepancy in the eScan versions. We have received from the ITA's version 1.1.6 for the eScan, but your application shows version 1.1.5. It appears from our review that this is the only outstanding item.

If you would like to call to discuss, it would probably be easiest to reach me at 303-894-2200 ext. 6377.

Thank you,
John G.

From: Keller, Kassie [mailto:kkeller@hartic.com]
Sent: Monday, May 07, 2007 12:04 PM
To: John Gardner
Cc: Tim Bishop; Bernard Konkol
Subject: Trusted install on Tuesday?

John –

I know that you're currently enjoying your time with Sequoia's demo, but I wanted to check in with you regarding a few things.

- ? We are re-running the ballots so that only the County Commissioner District 1 contest has a write-in option. We should have the correct ballots to you by the end of the week.
- ? I don't have a CPU readily available to demonstrate the client/server relationship that Boulder County uses. However, I am able to use a laptop that will demonstrate the exact same functionality. Just wanted to check to see if this is okay.
- ? I believe that the Kodak Field Engineer will stop by sometime tomorrow. Before we leave the whole system with you for the functional testing, we would like to run our tests to ensure that the i830 is behaving itself.
- ? What times are you available for the trusted build? I'm not sure when the Kodak guy will be there, but I'd like to coordinate things so we're only there once this week.

Thanks!

6/5/2007

Kassie

Kassie Keller
Regulatory Compliance Manager
Hart InterCivic
303.385.8036

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6/5/2007

Melanie Stuart

From: Keller, Kassie [kkeller@hartic.com]
Sent: Wednesday, May 09, 2007 10:09 AM
To: John Gardner
Cc: Tim Bishop; Bernard Konkol; Lubthisophon, Paul
Subject: RE: Trusted install on Tuesday?

John – They are just ridiculous! I am sorry about this and I've sent a request to Ciber to find a way to fix it. I'll let you know what they say.

Kassie

303.385.8036

From: John Gardner [mailto:john.gardner@sos.state.co.us]
Sent: Tuesday, May 08, 2007 5:53 PM
To: Keller, Kassie
Cc: Tim Bishop; Bernard Konkol; Lubthisophon, Paul
Subject: RE: Trusted install on Tuesday?

Okay Kassie, we can update your certification application to reflect this. We are also in the process of contacting either Jennifer Price, or Betty (last name illegible) with CIBER as the documentation from the CD of the trusted build is missing, and CIBER has hand written the label for the CD rather than the usual professional looking stamp that we normally see affixed to the CD.

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Thanks,
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From: Keller, Kassie [mailto:kkeller@hartic.com]
Sent: Tuesday, May 08, 2007 12:19 PM
To: John Gardner
Cc: Tim Bishop; Bernard Konkol; Lubthisophon, Paul
Subject: RE: Trusted install on Tuesday?

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I still haven't heard – let me know when you want to do the trusted install.

Kassie

303.385.8036

6/13/2007

From: John Gardner [mailto:john.gardner@sos.state.co.us]
Sent: Tuesday, May 08, 2007 8:33 AM
To: Keller, Kassie
Cc: Tim Bishop; Bernard Konkol
Subject: RE: Trusted install on Tuesday?

Kassie, to address your questions below.

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Thank you,
 John G.

From: Keller, Kassie [mailto:kkeller@hartic.com]
Sent: Monday, May 07, 2007 12:04 PM
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Cc: Tim Bishop; Bernard Konkol
Subject: Trusted install on Tuesday?

John –

I know that you're currently enjoying your time with Sequoia's demo, but I wanted to check in with you regarding a few things.

- We are re-running the ballots so that only the County Commissioner District 1 contest has a write-in option. We should have the correct ballots to you by the end of the week.
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- What times are you available for the trusted build? I'm not sure when the Kodak guy will be there, but I'd like to coordinate things so we're only there once this week.

6/13/2007

Thanks!

Kassie

Kassie Keller
Regulatory Compliance Manager
Hart InterCivic
303.385.8036

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6/13/2007

Melanie Stuart

From: Keller, Kassie [kkeller@hartic.com]
Sent: Tuesday, June 05, 2007 12:30 PM
To: John Gardner
Cc: Tim Bishop; Bernard Konkol; Lubthisophon, Paul; Geneice Mathews; Michael Chadwell
Subject: RE: Trusted install on Tuesday?

John,

Yes, we are moving forward with certification. We have been waiting for confirmation of your receipt of the correct trusted build disk.

If you have the time, I'd like to touch base with you on a few things. I'm around this afternoon and can be reached at 303.385.8036 or my cell - 720.837.6890.

Thanks!

Kassie

From: John Gardner [mailto:john.gardner@sos.state.co.us]
Sent: Monday, June 04, 2007 5:57 PM
To: John Gardner; Keller, Kassie
Cc: Tim Bishop; Bernard Konkol; Lubthisophon, Paul; Geneice Mathews; Michael Chadwell
Subject: RE: Trusted install on Tuesday?

Kassie, it's been a while since we've heard back from anyone in your office. I assume that we are still moving forward with your application for certification? We have received all of the trusted build information to move forward. We would like to work with you to install this on your components to begin the functional testing. When are you available for this?

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If you have any additional questions on this, please feel free to contact me directly. In the mean time, please let us know when you plan on moving forward again.

Thank you,

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Colorado Department of State
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(o) 303-894-2200 ext. 6318
(c) 719-243-6344

6/13/2007

(f) 303-869-4861

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Sent: Tuesday, May 08, 2007 5:53 PM
To: 'Keller, Kassie'
Cc: Tim Bishop; Bernard Konkol; Lubthisophon, Paul
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Kassie

303.385.8036

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Sent: Monday, May 07, 2007 12:04 PM
To: John Gardner
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Subject: Trusted install on Tuesday?

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Kassie Keller
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 303.385.8036

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6/13/2007

Melanie Stuart

From: Keller, Kassie [kkeller@hartic.com]
Sent: Tuesday, June 05, 2007 2:48 PM
To: John Gardner
Cc: Tim Bishop; Bernard Konkol; Lubthisophon, Paul; Geneice Mathews; Michael Chadwell
Subject: RE: Trusted install on Tuesday?

John,

Paul Lubthisophon will stop by around 3:30 this afternoon to review the disk sent by CIBER.

I wanted to let you know that the hash values don't actually come from the ITA's, so you won't see them on the disk. Technically, you should be able to download the hashes from the NSRL website; except that they are a bit behind and have not yet posted System 6.0.

In the mean time, one possibility is for you to contact Steve Freeman. I believe that he has reviewed System 6.0 before and may have created his own hash values that he will allow you to use. While I'm not sure of this, it may be worth looking in to.

-Kassie

From: John Gardner [mailto:john.gardner@sos.state.co.us]
Sent: Monday, June 04, 2007 5:57 PM
To: John Gardner; Keller, Kassie
Cc: Tim Bishop; Bernard Konkol; Lubthisophon, Paul; Geneice Mathews; Michael Chadwell
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Colorado Department of State

6/13/2007

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303.385.8036

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Kassie Keller
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 Hart InterCivic
 303.385.8036

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6/13/2007

Melanie Stuart

From: Keller, Kassie [kkeller@hartic.com]
Sent: Tuesday, April 17, 2007 2:09 PM
To: John Gardner
Cc: Tim Bishop; Lubthisophon, Paul; Bernard Konkol
Subject: FW: Final 6.0 Report
Attachments: 2006-03-03 Hart System 6 Add 2 _NASED Accepted_.pdf

John,

Sorry – I guess I didn't word my request to Ciber correctly. You will only need the *2006-03-03 Hart System 6 Add 2_NASED_Accepted.pdf*. As you can see, the BOSS version number was revised in this addendum.

I am still waiting for Ciber to get back to me regarding a final version of the original report *2006-01-13 Hart System 6*. For your information, Ciber did use this report as the submission to NASED – that's why it says draft; and that is why the addendum report was released. It is their practice to have the report labeled as a DRAFT until the NASED approves it and assigns the number. If I don't get the report, I will have them issue a statement regarding this.

Thanks,

Kassie

303.385.8036

From: Rohacek, Kelly A [mailto:KRohacek@ciber.com]
Sent: Tuesday, April 17, 2007 12:29 PM
To: john.gardner@sos.state.co.us
Cc: Keller, Kassie; Macfarlane, Robert; Rainville, Paul
Subject: FW: Final 6.0 Report

Please find the attached ITA reports for our customer HART.

Thank you,
Kelly Rohacek

From: Keller, Kassie [mailto:kkeller@hartic.com]
Sent: Tuesday, April 17, 2007 11:24 AM
To: Rohacek, Kelly A
Cc: Macfarlane, Robert; Rainville, Paul
Subject: FW: Final 6.0 Report

6/13/2007

Kelly – Would you also send a copy of all final reports to the following address? We are in the process of certifying in Colorado and they would like all of the final reports to come from you directly.

john.gardner@sos.state.co.us

Thanks!

Kassie

303.385.8036

From: Keller, Kassie
Sent: Tuesday, April 17, 2007 9:49 AM
To: 'Rohacek, Kelly A'
Cc: Macfarlane, Robert; Rainville, Paul
Subject: RE: Final 6.0 Report

Thanks, Kelly!

Just to clarify – you don't consider the original report final? Only the addendum? This is a bit concerning since all of the testing is reported in the original report dated 1/13/06.

Let me know.
Thanks!

Kassie

303.385.8036

From: Rohacek, Kelly A [mailto:KRohacek@ciber.com]
Sent: Tuesday, April 17, 2007 9:22 AM
To: Keller, Kassie
Cc: Macfarlane, Robert; Rainville, Paul
Subject: RE: Final 6.0 Report

Kassie,

Please find the attached requested this morning. If you have any further questions please copy the above Cc: for more information.

Thanks
Kelly Rohacek

From: Keller, Kassie [mailto:kkeller@hartic.com]

6/13/2007

Sent: Monday, April 16, 2007 5:45 PM
To: Southworth, Shawn; Gray, Diane
Subject: Final 6.0 Report

Shawn/Diane,

Would you send me the final report for Original Report for System 6.0? It's strange, I have the 4 page addendum report, but I don't have the final one for the primary report on 1/06. Is this intentional?

Thanks for your help.
Kassie

Kassie Keller
Regulatory Compliance Manager
Hart InterCivic
303.385.8036

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6/13/2007

Hart InterCivic Software Qualification Test Report

Original Report for Hart System 6.0 created 01/13/06

Addendum 1 for Hart System 6.0 created 1/30/06 (typo revision only: change BOSS Version 4.2.12 to 4.2.13)

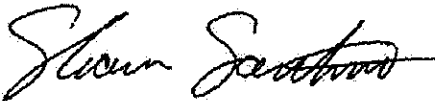
Addendum 2 for Hart System 6.0 created 03/03/06 (Clarification of subsequent defects)

03/06/06: **NASED Number – N-1-04-22-22-004 (2002)**

Prepared For:

The National Association of State Election Directors

Prepared By:



**CIBER, Inc.
Independent Test Authority**

ciber

CIBER, Inc.
7501 South Memorial Parkway
Suite 107
Huntsville, AL 35802

Proprietary

1 INTRODUCTION

Subsequent to the initial release of this report, CIBER became aware of certain defects in the 6.0 system release. Upon further review of these defects, it was determined the defects either did not pose a significant risk to or impact on the overall performance of the system, or there were acceptable work-arounds available to the user of the system.

1.1 DOCUMENT OVERVIEW

This document consists of four main sections: Introduction, Version Description, Testing Approach and Results Summary. The Version Description provides the list of all the components changed or modified from the original report. The Defect Detail List describes what the defects discovered after Hart System 6.0 testing was performed. The Qualification Test Results Section provides the results of the testing process.

2 VERSION DESCRIPTION

There are no changes to the originally submitted Hart System 6.0.

3 DEFECT DETAIL LIST

1 Incorrect Precinct label on Access Code Ticket:

Problem: The access code ticket sometimes displays a precinct number that is not the voter's precinct number.

Occurrence: Rare - Only occurs in counties with more than 256 precincts, and only for the precincts numbered higher than 256.

Severity: Low - Only the text is printed incorrectly, this problem does not affect the operation of the system. The correct ballots for the correct precinct are all properly delivered to the booth and recorded correctly.

Impact: Minimal - Could cause some confusion for a voter who notices that the printed number doesn't match their assigned precinct.

Work-around: Notify poll workers at affected precincts to instruct concerned voters to ignore the text on the printed ticket. If a voter is concerned, he or she can confirm their correct precinct by looking at the precinct name on the eSlate ballot screen.

2 VBO Hot Swap Lock Up:

Problem: A VBO with low paper or low batteries sometimes hangs the eSlate while hot swapping.

Occurrence: Rare - Only when a new Access Code screen is generated AND the VBO experiences EITHER 1) a "low battery" (while running on batteries only) signal OR 2) a "paper low" signal. Since the system is sized such that a VBO should not run out of paper during Election Day AND must be run on batteries for more than 2 hours to get a "battery low" signal, the occurrence rate should be very low.

Severity: Low - This error occurs only after a vote has been recorded and before the next voter has entered his or her access code. No cast vote record is ever affected and voter inconvenience is minimal.

Impact: Minimal - A voter may be asked to vote at another booth while the error is cleared; and the poll worker may have the extra step of canceling the booth to reset the eSlate.

Work-around: The two main work-arounds are for the poll worker to: 1) Cancel (stop using) the booth. This is completely acceptable to many customers if the paper has run low due to overuse of one booth and the polling place has planned not to replace VBOs that are out of paper. 2) Replace the VBO and wait for all current voters to finish voting. Then shutdown and restart the JBC. Resume voting.

4 RESULTS SUMMARY

4.1 RECOMMENDATION FOR QUALIFICATION

It has been demonstrated through the original submission of this report and the detailed descriptions of the subsequent defects that the Hart InterCivic System Version 6.0 successfully meets the required acceptance criteria of the FEC Voting System Standards of 2002.

It is upon completion of this report that CIBER recommends to the NASED committee that Hart InterCivic System Version 6.0 be certified.

Summary of Report and Addendums

Original Report 2006-01-13 For System 6.0

| System | Hardware | Software |
|-----------------|--|---|
| Hart System 6.0 | JBC Firmware Version 4.0.19 eSlate Firmware Version 4.0.19 eScan Firmware Version 1.1.6 VBO Firmware Version 1.7.5 COTS Scanner, Fujitsu M4099D COTS Printer, HP LaserJet 2420D | BOSS version 4.2.12 Ballot Now version 3.2.4 Rally version 2.2.4 Tally version 4.2.8 eCM Manager 1.1.7 Servo 4.1.6 BossUtil 2.4.14 HartLib 1.7 |

Original report consisted of review of TDP and source code along with functional system integration test and L&A testing of eScan as well as L&A testing of eSlate with VBO. All components listed above were qualified to the 2002 FEC Voting System Standards.

Addendum 1 - 2006-01-30 For System 6.0

| System | Hardware | Software |
|-----------------|--|---|
| Hart System 6.0 | JBC Firmware Version 4.0.19 eSlate Firmware Version 4.0.19 eScan Firmware Version 1.1.6 VBO Firmware Version 1.7.5 COTS Scanner, Fujitsu M4099D COTS Printer, HP LaserJet 2420D | BOSS version 4.2.13 Ballot Now version 3.2.4 Rally version 2.2.4 Tally version 4.2.8 eCM Manager 1.1.7 Servo 4.1.6 BossUtil 2.4.14 HartLib 1.7 |

Addendum 1 corrected a typographical error in the version number of BOSS.

Addendum 2 - 2006-03-03 For System 6.0

| System | Hardware | Software |
|-----------------|--|---|
| Hart System 6.0 | JBC Firmware Version 4.0.19 eSlate Firmware Version 4.0.19 eScan Firmware Version 1.1.6 VBO Firmware Version 1.7.5 COTS Scanner, Fujitsu M4099D COTS Printer, HP LaserJet 2420D | BOSS version 4.2.13 Ballot Now version 3.2.4 Rally version 2.2.4 Tally version 4.2.8 eCM Manager 1.1.7 Servo 4.1.6 BossUtil 2.4.14 HartLib 1.7 |

Addendum 2 describes subsequent defects discovered.

Melanie Stuart

From: Keller, Kassie [kkeller@hartic.com]
Sent: Friday, April 20, 2007 8:18 AM
To: John Gardner; Lubthisophon, Paul
Cc: Tim Bishop; Bernard Konkol
Subject: RE: HVS Certification Preparation
Attachments: 2006-01-04 Hart Status Letter.pdf

Again, I do not understand why these are password protected; but I do not have the passwords. I spoke with Sandy Green – if she did password protect anything, she believes that she would have emailed you the passwords. Perhaps you could check to see if you still have it in your files.

In the mean time, I have attached a copy of the letter.

I still plan to give you a call at 9:00am. Let me know if that needs to change.

Kassie

303.385.8036

From: John Gardner [mailto:john.gardner@sos.state.co.us]
Sent: Thursday, April 19, 2007 6:01 PM
To: Keller, Kassie; Lubthisophon, Paul
Cc: Tim Bishop; Bernard Konkol
Subject: RE: HVS Certification Preparation

Thanks Kassie, we'll take a look at this.

I also have more documents that are password protected, they are:

2006-01-04 Hart Status Letter.pdf

If you could provide the passwords to these, that would be helpful.

Thanks,
John G.

From: Keller, Kassie [mailto:kkeller@hartic.com]
Sent: Thursday, April 19, 2007 4:56 PM
To: John Gardner; Lubthisophon, Paul
Cc: Tim Bishop; Bernard Konkol
Subject: RE: HVS Certification Preparation

Great – we'll give you a call at 9:00am.

6/13/2007

Yes – the 2002 VSS.

I've attached the documentation that we have for you to use to determine FIPS compliance. Again, this proprietary information and cannot be posted for public record.

Kassie

303.385.8036

From: John Gardner [mailto:john.gardner@sos.state.co.us]

Sent: Thursday, April 19, 2007 4:21 PM

To: Keller, Kassie; Lubthisophon, Paul

Cc: Tim Bishop; Bernard Konkol

Subject: RE: HVS Certification Preparation

Friday morning is fine – 9:00am?. Do you mean the 2002 VSS? I don't believe there is a 2002 VVSG, but I could be mistaken on this. If you do not have any plans currently to identify when ANY system could possibly be certified to the 2005 VVSG requirements, then we'll evaluate the documentation with that understanding.

We'll take a look at whatever documentation you can submit for FIPS compliance and evaluate from there.

Thanks,
John G.

From: Keller, Kassie [mailto:kkeller@hartic.com]

Sent: Thursday, April 19, 2007 4:14 PM

To: John Gardner; Lubthisophon, Paul

Cc: Tim Bishop; Bernard Konkol

Subject: RE: HVS Certification Preparation

John – In an interest to move forward quickly, I have responded below.

Additionally, we have a proposal for you regarding your need to verify the Colorado Trusted Build is indeed the version loaded onto our customers' property. I would like to have a call to discuss, are you available Friday morning?

Thanks,

Kassie

From: John Gardner [mailto:john.gardner@sos.state.co.us]

Sent: Tuesday, April 17, 2007 3:53 PM

To: Lubthisophon, Paul; Keller, Kassie

Cc: Tim Bishop; Bernard Konkol

6/13/2007

Subject: RE: HVS Certification Preparation

Paul, thanks for the update, unfortunately each of your points have come across as point #1 for me, so I'll address each in the order by requirement #.

45.4.9 - Okay, we have located these documents in the previous cert folders. We'll evaluate them further, but at least we now show that we have these on file.

45.4.2.4.4(a) - the systems 6.2.1 and 6.4 that you mention - and I'm sure you meant to say 2005 VVSG, but are they TESTED to 2005 VVSG, or just Hart compliant with 2005 VVSG? I've attached the powerpoint presentation that your austin office is using at various user group meetings around the country. How is it that they know the anticipated schedule for 2005 VVSG compliance, but you do not? It seems as though you could simply use this chart for anticipated compliance with this requirement.

No, these systems are built, tested and certified to the 2002 VVSG. The presentation you have attached says nothing about an anticipated schedule for 2005 VVSG compliance; only the schedule for System 6.4, which is being certified to the 2002 VVSG. As Paul stated, Hart has not completed its internal product line planning process in sufficient detail to specifically identify the next version release after 6.4.

45.5.2.6.1(c)(vii) - I have to be honest and tell you that I don't understand the phrase "this standard has not been a requirement by Hart Intercivic." When you follow up by saying you meet the requirement. All we need is documentation of you meeting this requirement, which you continue to claim that you meet. Maybe we need to discuss by phone, but this isn't clear to me.

This is a new requirement by any state. What Paul means is that we believe that we meet the requirements defined by the standard; however we have not had this validated as true. We do have documentation that you will be able to use to extrapolate the individual elements. These elements can then be combined to show that we meet the requirements of the FIPS 140-2.

We will review what we can at this time, and revisit any suspended requirements when additional documentation is received.

Please feel free to call me anytime to discuss any of the requirements.
Thank you,

John Gardner
Voting Systems Specialist
Colorado Department of State
1700 Broadway, Ste 270
Denver, CO 80290
Office: 303.894.2200 ext. 6318
Fax: 303.869.4861

From: Lubthisophon, Paul [mailto:PLubthisophon@hartic.com]

Sent: Tuesday, April 17, 2007 1:55 PM

To: John Gardner; Keller, Kassie

Cc: Tim Bishop; Bernard Konkol

Subject: RE: HVS Certification Preparation

John

I have recently joined Kassie Keller in Regulatory Compliance Department at Hart Intercivic. Kassie is working on pulling together the information for some of the outstanding issues. I would like to take this opportunity to introduce myself, and hopefully answer a couple of your concerns.

6/13/2007

1. 45.4.9 - Schematic documents. Included in our original System 6.0 Certification package was the 'Schematics'. In this folder are the 4 additional subfolders, labeled for each of our hardware devices being submitted for certification. The actual PDF's contained in each subfolder refer to the printed circuit board assembly schematics. If you do not have these files,
1. 45.4.2.4.4(a) - Plan for VVSG compliance. Hart is committed to the long-term support of its customers and intends to continue to provide new releases of its Voting Systems. At this time, Hart has not completed its internal product line planning process in sufficient detail to specifically identify the next version release. HVS 6.2.1 and 6.4 are both 2002 VVSG compliant systems, with the latter available at the end of calendar year.
1. 45.5.2.6.1(c)(vii) - Fips 140-2 compliance. As stated previously, this standard has not been a requirement by Hart Intercivic. We meet the security level 2 of the requirement, but gathering the various security documents and locating all the pertinent sections for your review will require additional research on my part.
1. VSTL documentation. Kassie is currently working on this issue.

Thanks,
 Paul Lubthisophon
 Regulatory Compliance Specialist
 Hart InterCivic - Colorado
 303-531-4486 voice direct
 303-385-6477 facsimile

From: John Gardner [mailto:john.gardner@sos.state.co.us]
Sent: Monday, April 16, 2007 5:33 PM
To: Keller, Kassie
Cc: Tim Bishop; Lubthisophon, Paul; Bernard Konkol
Subject: RE: HVS Certification Preparation

Kassie, after review of all of your documentation submitted in the follow-up e-mail from your office, the following is a list of other comments on your response:

1. 45.4.9 - Schematic documents. You indicate that we already have these on file? Please provide the name of the document that contains this data so that we may evaluate. After our re-review of the documents, we are still unable to locate this information.
2. 45.4.2.4.4(a) - Plan for VVSG compliance. While we understand that 2005 VVSG compliance is not required now, what we are looking for is the Hart Intercivic plan for meeting compliance with these requirements. We are currently evaluating System 6.0, but are aware that Hart has in the works Systems 6.2 and 6.4. What is Hart's intention for these systems at the federal level? Will one of these be 2005 VVSG Compliant? If so, when will this be presented to Colorado? We have seen powerpoint presentations by your organization indicating a path for migration. This would suffice for this requirement.
3. 45.5.2.6.1(c)(vii) - Fips 140-2 compliance. Please provide proof of this compliance. You indicate meeting this at Level 2 - please show documentation of this.
4. VSTL documentation. As discussed earlier today, the information that you submitted from ITA's is stamped either preliminary or draft. Final versions of both of these documents, or notes from the ITA indicating that no other document exists or was used for NASED qualification. Additionally, the BOSS version that you have submitted for Colorado indicates it to be version # 4.2.13, but the ITA reports indicated testing #4.2.12. This will need to be cleared up.

6/13/2007

We also are on hold waiting for a response on both the trusted build information and a list of services and executables as we had previously discussed today. We are still conducting a thorough review of your documents, and will place items in a "suspended" state while waiting on this documentation.

As always, please call my office to discuss any of the outstanding or future issues as we continue to move forward with your application for certification.

Thank you,
John Gardner

From: Keller, Kassie [mailto:kkeller@hartic.com]
Sent: Monday, April 16, 2007 2:44 PM
To: John Gardner
Cc: Tim Bishop; Lubthisophon, Paul; Bernard Konkol
Subject: RE: HVS Certification Preparation

John – I'm not sure why the ITA reports are password protected. I tried to send them in a zipped file, but it was rejected. Try this.

Per my voicemail, let's try to talk through a few of the outstanding issues below.

Thanks!

Kassie

303.385.8036

From: John Gardner [mailto:john.gardner@sos.state.co.us]
Sent: Monday, April 16, 2007 10:55 AM
To: Keller, Kassie
Cc: Tim Bishop; Lubthisophon, Paul; Bernard Konkol
Subject: RE: HVS Certification Preparation

Kassie, please see responses (way) below to your original questions.

In addition to your questions, we have some concerns with the last document you have released to us titled: "Hart Response." In this document, you reply that you have not provided any documentation of the method of installation for the trusted build (45.4.6). This is technically not an issue as we can document the procedures used during the installation of the build for demonstration purposes and state testing. However, your response of "N/A" is troublesome as the state intends to a) retain a copy of the trusted build for escrow purposes, and b) install the trusted build on current installations around the state prior to the '07 election. It's the State's intent to use the trusted build and instructions to document the re-establishment of the chain of custody of software from a trusted build version on all machines used within the state. Now, it's possible that this is completed in conjunction with the vendor's representative being on-site and doing the work of the installation, however, the files that they use for the install are the files from the state's tested build copy. Additionally, is Hart going to comply with both the schedule laid out by the state to conduct this in all 64 counties (47 of which are Hart customers) and at no cost to the counties for the on-site support?

Secondly, in your response to 45.5.2.6.1(d)(iv), you indicate that because Hart does the installations that you are exempt from providing a list of executables running on all workstations and servers. It seems that since your

6/13/2007

technicians are performing the installation, you would be aware of exactly the executables necessary for proper execution of the HVS on those devices. The intention of our office is to use this list of executables to perform a check of laptops, workstations and servers to ensure that ONLY the trusted build software (and components) are installed on the systems. I do not therefore see how Hart could be "not applicable" to this sort of requirement.

Next, we have discovered that the ITA test reports that you have provided are password protected. In order to review your documentation, we will need access to these files and any other files that you may have password protected. Your documentation review will be suspended until such a time that we can access these files, delaying your certification process.

On your list of ballots below, I did not see any indication of your printing ballots for the recall election (45.6.2.3.7 (e)).

Finally, you asked this additional question:

"In working on the ballot definition, I realized we had another issue to solve. If you remember your original testing in 2/2006; only being able to use a one sheet ballot in 6.0 creates a little more complication than I mention below. In the Consolidated General test, we have a few precincts that are more than one sheet already. In the original certification of 6.0 we used a separate test deck in order to test the eScan. This test deck removed a few contests in order to create a one-sheet ballot to run the functional testing.

I would like to propose that we do the same for our recertification. Would it be okay if we removed Lookout Mountain Question 4c for this test deck? This cuts us down to one sheet and leaves at least one large question/proposition for every ballot style. "

From my understanding of this situation, Hart is the ONLY voting system in Colorado that cannot fit the certification election(s) onto a one page ballot - despite modifications to size of text and/or instructions, headers, etc. to fit these questions onto a single page. Instead of removing the questions from the list, please propose a solution that Hart would provide which is similar to that of what Colorado jurisdictions would receive in the event that all certified text does not fit on the paper ballot. We will conduct the tests on the equipment with all questions being represented.

Additional responses to original questions are below.

If you have additional questions on this, please feel free to contact my office directly.

Thank you,
John Gardner

From: Keller, Kassie [mailto:kkeller@hartic.com]
Sent: Friday, April 13, 2007 3:16 PM
To: John Gardner
Cc: Tim Bishop; Lubthisophon, Paul
Subject: HVS Certification Preparation

John,

I have a few questions that I wanted to make sure I had clarified so that we can hit the ground running on May 2nd.

6/13/2007

1. I plan to have a Kodak i660 (around 120 pages per minute) and an i260 (around 50 pages per minute) for our testing. Will you require testing on the i830 again? If so, we will need to work out a day or two for you to come up to our offices to complete testing. Like last time, we won't be able to have one onsite at your offices.
2. Both 45.6.1.1., and 45.6.2.1.1 require you to bring the exact configuration to our office for demonstration (by you) and testing (by us). By not bringing the i830 to our office for the demonstration, you are denying the public the right to comment on the proposed system. By not bringing the system in for testing, we are making a special exception that we are not inclined to extend for this testing cycle. If you have an extreme situation that would prevent you from bringing this equipment to our office, please present this to us for consideration. Otherwise, please bring all series of machines that you want to be considered in your final certification package.
1. In September, we had a few issues regarding the ballots, so I want to get your sign off before I send them to the printer.
 1. Flat Decks – If 25 ballots per precinct and each split, then I estimate 875 ballots per deck.
 - i. Flat Deck 1 = General Election
 - ii. Flat Deck 2 = General Election
 - iii. Flat Deck 3 = Primary Election, *Democrat*
 - iv. Flat Deck 4 = Primary Election, *Republican*
 - v. *875 is the correct number per deck, and yes this order is fine and preferred..*
 1. Folded – Again, 25 ballots per precinct AND split, there are 875 ballots per deck. Will you be folding the ballots, or will Hart provide them already folded?
 - i. Flat Deck 1 = General Election
 - ii. Flat Deck 2 = General Election
 - iii. Flat Deck 3 = Primary Election, *Democrat*
 - iv. Flat Deck 4 = Primary Election, *Republican*
 - v. *Again, this is correct. The SOS will be folding the ballots.*
 1. Single Precinct – Precinct TBD
 - i. Single Deck 1 = General Election *English*
 - ii. Single Deck 2 = General Election *Spanish*
 - iii. Single Deck 3 = Primary, *Democrat Spanish*
 - iv. Single Deck 4 = Primary, *Republican English*
 - v.
 - vi. *This is correct as well, Hart can pick whichever precinct they want for these ballots, as long as the ballots (for each deck) are of the same precinct.*
 - vii.
 - viii.
1. I just want to remind you that we are NOT able to run the two paged ballot through the eScan in System 6.0. We will only be able to test Ballot Now with the two page deck.
- 2.
3. This is fine and understood; however, please provide the ballots so that the testing board will have the opportunity to confirm this in the functional testing and document accordingly.

1. Are we to create the 12 decks above as I have laid out; then create another 12 decks with serial numbers as it says in your instructions? Or, should I just make sure that we include serial numbers on at least two decks in each batch? Please clarify for me.
 - 2.
 3. 45.6.2.3.7(f) clarifies this requirement as to be for ALL ballots printed, we would need to see them both ways.
 - 4.
-
1. Is it possible to get in a day early to set up the equipment? That way we can make sure that we adhere to the rules of the freight elevator and have the equipment delivered during off hours.
 2. We are more than willing to accommodate any extra time needed to setup equipment due to our building requirements. This flexibility by our office will make for a difficult argument for your first point from our perspective regarding the i830.

I think that's it for now. Thanks for your help getting this ironed out early.

Kassie

Kassie Keller
Regulatory Compliance Manager
Hart InterCivic
303.385.8036

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ciber

Memo to: Scott Hunsaker
Date: December 30, 2005
Subject: Hart Intercivic System 6.0 Testing

This is to notify you that Hart Intercivic's Voting System 6.0 functional testing has been successfully completed. All source code and documentation has been reviewed as well. Our final report will soon be submitted to NASED and EAC with the recommendation to certify this system as meeting the Federal Election Commissions 2002 Voting System Standard.

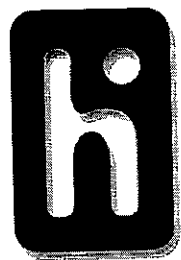
Hart Intercivic Voting System 6.0 subcomponent version numbers:

| | | | |
|-------------|--------|------------|--------|
| Ballot Now | 3.2.4 | JBC | 4.0.19 |
| BOSS | 4.2.13 | eSlate/DAU | 4.0.19 |
| Tally | 4.2.8 | VBO | 1.7.5 |
| Rally | 2.2.4 | eScan | 1.1.6 |
| eCM Manager | 1.1.7 | SERVO | 4.1.6 |

If you have any questions feel free to contact me.



Shawn Southworth
Ciber Inc.
ITA Practice Director
7501 South Memorial Parkway
Suite 107
Huntsville, AL 35802



HART

*i n t e r c i v i c*TM

System Security Functional Specification

eVoting Products

CONFIDENTIAL

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| | Part Number: 6000-174 | REV: C |
| | Part Name: System Security Functional Specification eVoting Products | |
| | File Name: System Security Functional Specification Core Products | Page 1 of 18 |

Change History

| Version | Date | Author | Description |
|---------|---------|-------------|--|
| A | 6/30/04 | Chuck Logan | Initial release |
| B | 2/21/05 | Chuck Logan | Update behavior of eCM to invalid PIN attempts. Clarify salt characteristics. Remove obsolete reference to key management policy. Refined key management requirements. Added Appendix D eSlate Cryptographic Module. |
| C | 8/23/05 | Chuck Logan | Include VBox. Update non-compliance item to System 6.0. Prohibit multiple instances of application from running concurrently. Document name change from "Core" to "eVoting". Clarify signing that the key identifier is now a GUID. Add eScan to Appendix C. |
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1 Introduction

1.1 Purpose

The purpose of this document is to define common security functional requirements for the core products that comprise the Hart Intercivic eVoting product suites.

1.2 Scope

These requirements apply to all deployed Hart Intercivic eVoting software and hardware products.

These requirements also apply to all third-party systems that interface directly to deployed Hart Intercivic products.

2 Related Documents

- BOSS Requirements Specification 6000-001
- eSlate Functional Specification 6000-006
- Ballot Now Requirements Specification 6000-074
- Tally Requirements Specification 6000-048
- Servo Product Requirements Specification 6000-098
- Rally Product Requirements Specification 6000-128
- System Security Requirements Specification 6000-166
- FIPS PUB 140-2 Security Requirements for Cryptographic Modules
- ISO/IEC 21827:2002 Information technology – Systems Security Engineering – Capability Maturity Model (SSE-CMM®)

3 Security Principles

See the System Security Requirements document.

4 Definitions

See the System Security Requirements document.

5 System Security Functional Requirements

5.1 Authentication

5.1.1 Account Lockout [NOT IMPLEMENTED IN SYSTEM 6.0]

5.1.1.1

5.1.1.2

5.1.1.3

5.1.1.4

5.1.1.5 The application shall have unlock account capability based upon user role

5.1.2 Authenticated Access

5.1.2.1 If the user fails authentication then access to restricted information and functionality shall be blocked.

5.1.2.2 If the user fails authentication, the event shall be logged as a persistent audit event

5.1.2.3 If the user fails authentication, a dialog shall be displayed with a message that login failed.

5.1.2.4 If the user fails authentication [REDACTED] times in a row, the application shall exit.

5.1.2.5 If the user authentication succeeds then the functionality appropriate for that user's permission level shall be enabled.

5.1.3 Peer Authentication [RALLY/TALLY and Ballot Now ONLY IN SYSTEM 6.0]

5.1.3.1 The specific product functional specification shall specify the method used for peer authentication.

5.1.4 System Tool Authentication [Not implemented in System 6.0]

5.1.4.1 The specific product functional specification shall list each supported System Tool.

5.1.4.2 The specific product functional specification shall specify the method used for each System Tool authentication.

5.1.5 Password Confidentiality

5.1.5.1 The application shall mask or otherwise obscure the password in any password entry field.

5.1.6 Password Storage

5.1.6.1 [REDACTED]

5.1.6.2 [REDACTED]

5.1.7 Password Change

5.1.7.1 The user shall be required to re-authenticate (reenter current password) before change password can be performed

5.1.7.2 If the user fails to re-authenticate, a message that the re-authentication failed shall be displayed.

5.1.7.3 The application shall consider the change password event as a persistent auditable event

5.1.7.4 Additional requirements are listed in 5.1.12.2.

5.1.8 Application Password Complexity Rules

5.1.8.1 The specific product functional specification shall specify which of the following password complexity rules is being followed.

5.1.8.2 Application Password Complexity Rule Level 1

5.1.8.2.1 [REDACTED]

characters.

5.1.8.2.2

5.1.8.2.3

5.1.8.3 Application Password Complexity Rule Level 2

5.1.8.3.1

5.1.8.3.2

5.1.8.3.3

5.1.8.3.4

5.1.8.3.5

5.1.8.3.6

5.1.8.3.7

5.1.8.3.8

5.1.8.3.9

5.1.8.3.10

5.1.8.3.11

5.1.8.3.12

5.1.8.3.13

5.1.8.3.14

5.1.8.3.15

5.1.8.4 The application shall not limit the number of attempts to create a password meeting the complexity rule requirements

5.1.8.5 The previously well-known passwords [REDACTED] and [REDACTED] shall never be accepted as a password, in any case upper or lower or mixed.

5.1.8.6 The password shall never be the same as the user ID, in any case upper or lower or mixed.

5.1.9 Password History [Not implemented in System 6.0]

5.1.9.1 The application shall support a configurable password history, from a maximum of [REDACTED]

5.1.9.2 The application shall not allow generation of a password that does not meet the password history requirements.

5.1.10 Password Aging [Not implemented in System 6.0]

5.1.10.1 The application shall support configurable password aging, up to a maximum of [REDACTED]

5.1.10.2 The application shall force the user to generate a new password after the aging period expires.

5.1.11 User ID Complexity Rule

5.1.11.1 [REDACTED]

5.1.11.2 The application shall not allow creation of duplicate User IDs.

5.1.12 Password Creation

5.1.12.1 The application shall require the user to re-enter the new password for verification

5.1.12.2 [REDACTED]

5.1.12.3 If a new password is not created successfully, then the password entry fields shall be erased.

5.2 Authorization and Access Control

5.2.1 Authorization Mechanism

5.2.1.1 The specific product functional specification shall specify which of the following authorization mechanisms is being followed

5.2.1.2 Authorization Mechanism Method 1 - [REDACTED]

5.2.1.3 Authorization Mechanism Method 2 - [REDACTED]

5.2.2 Principle of Least Privilege

5.2.2.1 This requirement shall be met by enforcing the privileges documented for each user role as specified in the product functional specification.

5.2.3 Initial User Creation

5.2.3.1 When the application is started for the first time after installation, the application shall provide the means for the user to create a user ID with administrator privileges

5.2.3.2 It shall not be possible to create the initial user with permissions other than admin.

5.2.3.3 When the application is started for the first time after installation, the application shall provide the means for the user to enter the password for the default admin user.

5.2.3.4 The user ID for the default admin user shall not be pre-populated.

5.2.3.5 The password for the default admin user shall not be pre-populated.

5.2.3.6 The password entered for the default admin user shall meet the requirements of section 5.1.8.

5.2.3.7 If the default admin user is not created successfully, the application shall exit without affecting the ability to create the initial default user the next time the application is started.

5.2.4 System User ID Confidentiality

5.2.4.1 Only administrators shall have access to the user maintenance dialog or similar.

5.2.5 System User ID Storage

5.2.5.1 The system shall not store the User IDs in the clear in the registry or file system.

5.2.6 Session Expiration [Not implemented in System 6.0]

5.2.6.1 The specific product functional specification shall specify the short-term expiration limit.

5.2.6.2 The specific product functional specification shall specify the behavior when the short-term expiration limit is exceeded.

5.2.6.3 The specific product functional specification shall specify the hard expiration limit.

5.2.6.4 The specific product functional specification shall specify the behavior when the long-term expiration limit is exceeded.

5.2.6.5 If a long-term operation is underway, the operation shall first complete and then the short term and long term session timer shall begin.

5.3 Cryptography and Encryption

5.3.1 Asset Identification

5.3.1.1 Appendix B shall specify the assets (sensitive information) created in the system.

5.3.1.2 Appendix B shall specify the confidentiality of the asset (secret or non-secret).

5.3.1.3 Appendix B shall specify the crypto method used to protect that asset.

5.3.1.4 Appendix B shall specify the system component that creates that asset.

5.3.1.5 Appendix B shall specify the system event that creates that asset.

5.3.1.6 Appendix B shall specify if the hardware crypto module is required when the asset is created.

5.3.2 Credential Transfer

5.3.2.1 The specific product functional specification shall specify the credentials it sends over the network.

5.3.2.2 All credentials sent over the network shall be encrypted.

5.3.2.3 The specific product functional specification shall indicate which method of encryption is used.

5.3.3 Random Number Generation

5.3.3.1 The application shall generate random numbers using a secure random number generator

5.3.3.2 If the random number is associated with an Asset, it shall be listed in Appendix B.

5.4 Data Integrity

5.4.1 Input Validation

5.4.1.1 The specific product functional specification shall identify all sources of input data

5.4.1.2 The application shall validate all input from all identified sources

5.4.1.3 If input data fails validation, the application shall display a meaningful message to the user

5.4.1.4 If input data fails validation, the application shall not continue

5.4.2 Data Integrity

General Requirements

5.4.2.1 In all cases, the application shall display a failed validation message if the data being validated fails validation.

5.4.2.2 The specific product functional specification shall specify the validation failures that result in a persistent audit event.

Signing Key

5.4.2.3 The application shall record a persistent audit event when the signing key is accessed from its secure storage.

5.4.2.4 The application should not allow the further processing of an MBB if the signing key GUID fails validation.

MBB Header Data

5.4.2.5 The application that reads or writes the MBB header data shall protect or verify that data with the method listed in Appendix B.

MBB Ballot Data (for example, eSlate ballot data, Ballot Now ballot data, audio data, etc.)

5.4.2.6 The application that reads or writes the MBB Ballot data shall protect or verify that data with the method listed in Appendix B.

MBB CVR Log

5.4.2.7 The application that reads or writes the MBB CVR Log shall protect or verify that data with the method listed in Appendix B.

MBB Audit Log

5.4.2.8 The application that reads or writes the MBB Audit Log shall protect or verify that data with the method listed in Appendix B.

Crystal Report .rpt files [Not implemented in System 6.0]

5.4.2.9 The application shall validate all .rpt files when they are run

5.4.2.10 If the validation of the .rpt file fails, the report is still permitted to run

Hardware crypto module

5.4.2.11 Actions or events requiring the signing key require the HW crypto module to be present

5.4.2.12 Actions or events requiring the HW crypto module are listed in Appendix B and Appendix C

5.4.2.13 Actions or events requiring the HW crypto module shall require the user to enter the crypto module PIN

5.4.2.14 The PIN shall comply with Password Complexity Rule #1

5.4.2.15 If an invalid PIN is entered [REDACTED] times consecutively the crypto module shall lock out access

and require reset before further use. This count is kept within the eCM itself so it persists across applications and power cycles.

5.4.2.16 Any failure to retrieve the signing key from the HW crypto module when required shall not allow the current operation to continue

5.4.2.17 Any failure to retrieve the signing key from the HW crypto module shall be logged as a persistent audit event

5.4.2.18 If the HW crypto module is not present when it is needed, a missing crypto module message shall be displayed

5.4.2.19 If the HW crypto module does not contain the proper key as identified by the key GUID, an invalid key message shall be displayed

5.4.2.20 If the user enters an invalid PIN for the crypto module, an invalid PIN message shall be displayed

5.4.2.21 If the application is unable to successfully retrieve the key from the crypto module, a failure message shall be displayed

Database Passwords

5.4.2.22 [REDACTED]

User Passwords

5.4.2.23 [REDACTED]

Public Counter

5.4.2.24 The public counter shall be saved in a persistent manner

5.4.2.25 The public counter shall not be changed by the user

Private Counter

5.4.2.26 The private counter is saved in a persistent manner

5.4.2.27 The private counter shall not be changed by the user

Multiple Instances

5.4.2.28 The application shall not be capable of running multiple instances of itself concurrently, unless expressly required for application functionality.

5.4.3 Network Data Integrity

5.4.3.1 The specific product functional specification shall identify the method used to provide network data integrity on identified assets.

5.4.4 Continuous Data Integrity

5.4.4.1 The application shall implement checks on internal data processing steps to ensure the integrity of generated data.

5.4.4.2 If the integrity of the data cannot be verified, then the application shall consider this to be a program exception, and stop and display a message to the user.

5.5 Database Security

5.5.1 Database Access

5.5.1.1 [REDACTED]

5.5.2 Database User Credentials and Configuration Files

5.5.2.1 [REDACTED]

5.5.2.2 During software installation, every database installed shall have a unique database password created and applied to the database.

5.5.2.3 At run time, if a new database is created on the file system, a unique database password shall be created and applied to the database.

5.5.2.4 The database password shall never be stored in the clear.

5.5.2.5 The database password shall be stored in an obfuscated format in a database configuration file.

5.5.2.6 During software installation, every database installed shall have a configuration file created that contains the obfuscated password.

5.5.2.7 At run time, the unique election database password is obfuscated and stored in the election database configuration file

5.5.2.8 All database configuration files shall have the same root name as the database

5.5.2.9 All database configuration files shall be stored in the same directory as the database.

5.5.2.10 The application shall save a backup of every configuration file¹ in its persistent database.

5.5.2.11 If the database config file is missing, the application shall automatically attempt to restore the config file from the backup copy in its persistent database

5.5.2.12 If any database configuration file cannot be successfully created or restored, the application shall display an error message.

5.5.2.13 Any failure to retrieve the database password shall be recorded as a persistent audit event

5.5.2.14 Any failure to retrieve the database password shall halt the current operation

5.5.3 Database User permissions

5.5.3.1 The specific product functional specification shall identify the database users and their privileges.

5.5.4 Database engine parameters and port protection

5.5.4.1 [REDACTED]

5.5.4.2 [REDACTED]

5.5.4.3 The engine startup parameters specified in appendix A shall be used

¹ [REDACTED]

5.6 System Monitoring and Logging

5.6.1 Persistent Auditable Events [Not implemented in Rally, Tally, and Servo in System 6.0]

5.6.1.1 The specific product functional specification shall list every persistent audible event.

5.6.1.2 Administrative functions, such as Add User, Delete User, Change User Password, etc. shall be logged as persistent audible events.

5.6.1.3 Significant system events, such as Create/Add Election, Close Election, Delete Election, etc. shall be logged as persistent audible events.

5.6.1.4 A failed logon attempt is considered a significant system event and shall be logged as a persistent audible event.

5.6.1.5 A Database Error is considered a significant system event and shall be logged as a persistent audible event.

5.6.1.6 A Program Exception is considered a significant system event and shall be logged as a persistent audible event.

5.6.2 Audit Log Retention [Not implemented in Rally, Tally, and Servo in System 6.0]

5.6.2.1 Persistent audible events shall be maintained in an application database or other system resource that is not subject to deletion through the system interface.

5.6.2.2 The specific product functional specification shall specify its method of logging persistent audible events.

5.6.3 Failsafe Operation

5.6.3.1 In the event of system failure, the application shall display an alert message and not allow further operation.

5.6.4 Clock Synchronization

5.6.4.1 The application training procedure and user documentation for the system shall define the need to keep the system clock set accurately, including time zone, daylight saving time, and local time settings.

5.7 Privacy, Confidentiality, and Segmentation

5.7.1 Information Privacy

5.7.1.1 Voter privacy and anonymity shall be maintained throughout the system.

5.7.1.2 Other requirements for this section in the System Security Requirements document are procedural and out of scope for this document.

5.7.2 Information Disclosure

5.7.2.1 Error messages shall not leak information about why authentication attempts failed. For example, the error message shall not indicate whether the user ID or the password is incorrect.

5.7.2.2 Database error messages shall not leak information about the structure and state of the database.

5.7.3 Installation Segmentation

5.7.3.1 The user shall determine the initial default user credentials when application is run for the first time as specified in section 5.2.3.

5.8 Product Security

5.8.1 Product Distribution

5.8.1.1 The requirements for this section in the System Security Requirements document are procedural and out of scope for this document.

5.8.2 Binary (executable) Security

5.8.2.1 The distributed system executable (binary) code shall not contain database passwords.

5.8.2.2 Distributed system executable code (binary) shall not disclose source code details (i.e. debug symbols).

5.8.3 Source Code Security

5.8.3.1 The requirements for this section in the System Security Requirements document are procedural and out of scope for this document.

5.8.4 System Tools

5.8.4.1 The requirements for this section in the System Security Requirements document are procedural and out of scope for this document.

5.8.5 Operating System Security

5.8.5.1 The requirements for this section in the System Security Requirements document are procedural and out of scope for this document.

5.8.6 Third-Party Dependencies

5.8.6.1 The specific product functional specification shall identify all third party dependencies or services and the audit procedures used to ensure their security.

5.8.7 Covert Channels² and Trojan Code³

5.8.7.1 There shall be no Covert Channels or Trojan Code present in the system.

Note: System Tools enabled by registry keys, command line switches, or other means are not considered Covert Channels or Trojan Code, as long as their presence is documented in the specific product functional or design specification.

5.9 Key Management

5.9.1.1 The specific product functional specification shall identify the cryptographic keys used in the product

² A covert channel can expose information by some indirect and obscure means, such as embedding information into a data stream, or changing a registry value.

³ Trojan code is designed to affect a system in a way that is not authorized and not readily noticed and not required by the user of the system.

6 Appendix A – Database Security

6.1 Database Security

6.1.1 Database Engine Parameters

The following database engine parameters shall be used:

NOTE: THIS TABLE INTENTIONALLY LEFT BLANK FOR RELEASE 6.0

| Switch | Description | Reason |
|--------|-------------|--------|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

7 Appendix B – System Assets

The following table identifies the sensitive information created in the system, its confidentiality, and the crypto method used to protect that information.

| Asset | Sensitivity ⁴ | Crypto Method | Creator | Event | HW crypto module required |
|--|--------------------------|---------------|---------------------------------------|-------------------------------|---------------------------|
| MBB Ballot Data | | | BOSS | Accept Ballot Generation | |
| MBB CVR Logs | | | Ballot Now, JBC, Servo | Close MBB, Close Polls | |
| MBB Audit Logs | | | Ballot Now, JBC, Servo | Close MBB, Close Polls | |
| MBB Header Data | | | BOSS | Write MBB | |
| Crystal Report .rpt files [Not implemented in System 6.0] | | | Design Time | Design Time | |
| Signing Key | | | Key Gen Application | Key Generation | |
| Strong MBB IDs | | | BOSS | Write MBB | |
| Database passwords | | | BOSS, Tally, Ballot Now | Create Election | |
| User passwords | | | BOSS, Tally, Rally, Servo, Ballot Now | Create User, Change Password | |
| Public Counter | | | JBC, eSlate, Ballot Now | Write MBB | |
| Private Counter | | | JBC, eSlate, Ballot Now | Write MBB | |
| JBC Password | | | BOSS | Accept Ballot Generation | |
| VBO Voter Choice Set | | | VBox | Review selections/cast ballot | |

⁴ Sensitivity refers to whether or not the information can be shown in plain text. If it is Secret, then it can never be shown in plain text.

8 Appendix C – eCM Events

The following table identifies events that require the presence of the eCM, or in the case of an embedded system, the Signing Key.

| <u>Asset</u> | <u>Sensitivity¹⁰</u> | <u>Crypto Method</u> | <u>Application</u> | <u>Event</u> | <u>HW crypto module required</u> |
|-----------------|---------------------------------|----------------------|-------------------------------|--|----------------------------------|
| MBB Ballot Data | | | Ballot Now, JBC, Rally, eScan | Create Election | |
| MBB CVR Logs | | | Tally, Rally, Servo, eScan | Read MBB, close polls | |
| MBB Audit Logs | | | Tally, Rally, Servo, eScan | Read MBB, close polls | |
| Signing Key | | | Servo | Programming signing key into JBC and eScan | |

¹⁰ Sensitivity refers to whether or not the information can be shown in plain text. If it is Secret, then it can never be shown in plain text.

¹¹ The digital signature method shall be SHA-1 HMAC with the signing key

9 Appendix D – eSlate Cryptographic Module

The eSlate Cryptographic Module (eCM) is a hardware module that provides secure storage of the Signing Key.

The eCM used in the system is the [REDACTED] It is certified as a Cryptographic Module Level 2 as specified in FIPS PUB 140-2 Security Requirements for Cryptographic Modules (US Dept of Commerce).

ciber

Memo to: Scott Hunsaker
Date: December 30, 2005
Subject: Hart Intercivic System 6.0 Testing

This is to notify you that Hart Intercivic's Voting System 6.0 functional testing has been successfully completed. All source code and documentation has been reviewed as well. Our final report will soon be submitted to NASED and EAC with the recommendation to certify this system as meeting the Federal Election Commissions 2002 Voting System Standard.

Hart Intercivic Voting System 6.0 subcomponent version numbers:

| | | | |
|-------------|--------|------------|--------|
| Ballot Now | 3.2.4 | JBC | 4.0.19 |
| BOSS | 4.2.13 | eSlate/DAU | 4.0.19 |
| Tally | 4.2.8 | VBO | 1.7.5 |
| Rally | 2.2.4 | eScan | 1.1.6 |
| eCM Manager | 1.1.7 | SERVO | 4.1.6 |

If you have any questions feel free to contact me.



Shawn Southworth
Ciber Inc.
ITA Practice Director
7501 South Memorial Parkway
Suite 107
Huntsville, AL 35802

Installing Another Operating System - Additional Instructions

When you click Finish, your computer will reboot to the new partition. This will not be successful because there is no operating system on that new partition. Print these steps for reference in installing the new operating system and adding the new OS to the BootMagic Configuration menu.

- Scenario 1: BootMagic Installed and Enabled
- Scenario 2: Symantec BootMagic Installed and Disabled or Not Installed

Scenario 1: BootMagic Installed and Enabled

- 1 When you reboot the computer at the end of this wizard, BootMagic overrides the settings made by PartitionMagic, so you see the BootMagic menu with your existing operating system (or systems) seen as startup options.
 - 2 Boot into the existing operating system, so you can get to the BootMagic Configuration screen.
 - 3 Open the BootMagic Configuration program (click **Start > Programs > Symantec BootMagic 8.0 > BootMagic Configuration**).
 - 4 Click **Edit > Add**.

The BootMagic Add OS dialog lists all the system operating systems detected by BootMagic.
 - 5 Click the **Advanced** button to view all your system's partitions, including those that BootMagic doesn't recognize as containing an OS (for example, Linux on a logical partition).
 - 6 Select the new partition you want to add to the menu.
 - 7 Click **OK**.
 - 8 Define the menu properties you want > click **OK**.
 - 9 Boot from the operating system CD or diskette for the operating system you are adding.
 - a. Make sure that the boot sequence in your system's BIOS is set to boot from either floppy diskette or CD first and hard drive second. Some machines may not be able to boot from the CD drive, or the CD itself may not be bootable. Check your documentation to verify this.
 - b. Upon reboot, place disk 1 of your operating system's installation floppy disk or CD in the appropriate drive to start the installation.
- Important (Windows NT 4.0 only):** If NTLDR.EXE is installed or moved beyond the 64K boot code boundary, Windows NT will fail to boot. NTLDR.EXE is usually located near the beginning of the partition in which it is installed. When you create partitions using PartitionMagic, if NTLDR.EXE is not located within the 2 GB boundary, the OS will not boot. If you hide a Windows NT boot partition, you must manually edit the Windows NT boot initialization file (BOOT.INI) to point to a new Windows NT boot partition. This can be done by opening the file in a program such as Notepad and resaving it with the same file extension.
- 10 Install the operating system into the new partition, as directed by the on-screen instructions.
 - 11 Reboot, and choose the old operating system from the BootMagic menu at startup.
 - 12 Go back into the BootMagic Configuration screen, and set up the new operating system options.

When you reboot the next time, the BootMagic menu will display both the old operating system and the new one. You will be able to choose either operating system.

Scenario 2: Symantec BootMagic Installed and Disabled or Not Installed

- 1 When you reboot the computer at the end of this wizard, it will hang because there is no operating system in the new active partition.
 - 2 Reboot again using the operating system CD or diskette for the operating system you are adding.
 - a. Make sure that the boot sequence in your system's BIOS is set to boot from either floppy diskette or CD first and hard drive second. Some machines may not be able to boot from the CD drive, or the CD itself may not be bootable. Check your documentation to verify this.
 - b. Upon reboot, place disk 1 of your operating system's installation floppy disk or CD in the appropriate drive to start the installation.
- Important (Windows NT 4.0 only):** If NTLDR.EXE is installed or moved beyond the 64K boot code boundary, Windows NT will fail to boot. NTLDR.EXE is usually located near the beginning of the partition in which it is installed. When you create partitions using PartitionMagic, if NTLDR.EXE is not located within the 2 GB boundary, the OS will not boot. If you hide a Windows NT boot partition, you must manually edit the Windows NT boot initialization file (BOOT.INI) to point to a new Windows NT boot partition. This can be done by opening the file in a program such as Notepad and resaving it with the same file extension.
- 3 Install the operating system into the new partition, as directed by the on-screen instructions.

At this point, you could reboot and use the new operating system, but there would not be an easy way to choose between operating systems at startup. The following steps enable you to configure BootMagic, so both operating systems are

available as choices at startup.

4 Reboot with the first PartitionMagic rescue disk, and insert the second rescue disk when directed to do so.

5 From PartitionMagic, set the partition that includes your old operating system active.

If you are planning to install BootMagic and you do not have a FAT or FAT32 partition to install it on, you can also use PartitionMagic to create that partition.

6 If you do not have BootMagic installed, install it.

7 Open the BootMagic Configuration program (click **Start > Programs > Symantec BootMagic 8.0 > BootMagic Configuration**).

8 Click **Edit > Add**.

The BootMagic Add OS dialog lists all the system operating systems detected by BootMagic.

9 (optional) Click the **Advanced** button to view all your system's partitions, including those that BootMagic doesn't recognize as containing an OS (for example, Linux on a logical partition).

10 Select the new partition you want to add to the menu.

11 Click **OK**.

12 Define the menu properties you want > click **OK**.

When you reboot the next time, the BootMagic menu will display both the old operating system and the new one. You will be able to choose either operating system.

Windows Drivers currently installed on HAVA03
List created: 6/7/2007 8:47:12 AM

Driver:
Driver Type: SCSI and RAID controllers
Driver Version:
Driver Date:
Manufacturer: (Standard mass storage controllers)
ProviderName: UNKNOWN
Num files: 0
Backed Up: False
XMLIgnition: 6/7/2007 8:46:16 AM

Driver:
Driver Type: Other devices
Driver Version:
Driver Date:
Manufacturer: UNKNOWN
ProviderName: UNKNOWN
Num files: 0
Backed Up: False
XMLIgnition: 6/7/2007 8:46:17 AM

Driver: Texas Instruments MMC Disk
Driver Type: Disk drives
Driver Version: 1.0.0.1
Driver Date: 06/03/2004
Manufacturer: Texas Instruments
ProviderName: Texas Instruments
Num files: 2
Backed Up: False
XMLIgnition: 6/7/2007 8:46:17 AM

Driver: Texas Instruments PCIXX21 Integrated FlashMedia Controller
Driver Type: PCMCIA and Flash memory devices
Driver Version: 1.0.1.8
Driver Date: 07/13/2004
Manufacturer: Texas Instruments Inc
ProviderName: Texas Instruments Inc
Num files: 2
Backed Up: False
XMLIgnition: 6/7/2007 8:46:17 AM

DGT Current.txt

Driver: Broadcom NetXtreme Gigabit Ethernet
Driver Type: Network adapters
Driver Version: 7.80.0.0
Driver Date: 06/19/2004
Manufacturer: Broadcom
ProviderName: Broadcom
Num files: 2
Backed Up: False
XMLIgnition: 6/7/2007 8:46:17 AM

Driver: Mobile Intel(R) 915GM/GMS,910GML Express Chipset Family
Driver Type: Display adapters
Driver Version: 6.14.10.3943
Driver Date: 11/02/2004
Manufacturer: Intel Corporation
ProviderName: Intel Corporation
Num files: 84
Backed Up: False
XMLIgnition: 6/7/2007 8:46:17 AM

Driver: Soft Data Fax Modem with SmartCP
Driver Type: Modems
Driver Version: 7.12.09.51
Driver Date: 12/17/2004
Manufacturer: CXT
ProviderName: CXT
Num files: 8
Backed Up: False
XMLIgnition: 6/7/2007 8:46:18 AM

Driver: Conexant AC-Link Audio
Driver Type: Sound, video and game controllers
Driver Version: 6.14.10.0565
Driver Date: 05/23/2005
Manufacturer: Conexant
ProviderName: Conexant
Num files: 23
Backed Up: False
XMLIgnition: 6/7/2007 8:46:18 AM

Driver: Mobile Intel(R) 915GM/GMS,910GML Express Chipset Family
Driver Type: Display adapters
Driver Version: 6.14.10.3943
Driver Date: 11/02/2004
Manufacturer: Intel Corporation
ProviderName: Intel Corporation
Num files: 84

Backed Up: False
XMLIgnition: 6/7/2007 8:46:19 AM

Driver: Intel(R) PRO/Wireless 2200BG Network Connection
Driver Type: Network adapters
Driver Version: 8.0.12.9000
Driver Date: 01/02/2004
Manufacturer: Intel(R) Corporation
ProviderName: Intel
Num files: 3
Backed Up: False
XMLIgnition: 6/7/2007 8:46:19 AM

Driver:
Driver Type: Other devices
Driver Version:
Driver Date:
Manufacturer: UNKNOWN
ProviderName: UNKNOWN
Num files: 0
Backed Up: False
XMLIgnition: 6/7/2007 8:46:19 AM

Driver: Quatech SPP-100: 1 Parallel Port
Driver Type: Ports (COM & LPT)
Driver Version: 1.4
Driver Date: 08/14/2006
Manufacturer: Quatech
ProviderName: Quatech
Num files: 3
Backed Up: False
XMLIgnition: 6/7/2007 8:46:19 AM

Driver: Hewlett-Packard Scanjet 5400C
Driver Type: Imaging devices
Driver Version: 2.00.0001.1
Driver Date: 07/15/2001
Manufacturer: Hewlett-Packard
ProviderName: Hewlett-Packard
Num files: 9
Backed Up: False
XMLIgnition: 6/7/2007 8:46:20 AM

DGT Current.txt

Driver:
Driver Type: Other devices
Driver Version:
Driver Date:
Manufacturer: UNKNOWN
ProviderName: UNKNOWN
Num files: 0
Backed Up: False
XMLIgnition: 6/7/2007 8:46:20 AM

Driver: Xeltek USB programmer
Driver Type: Universal Serial Bus controllers
Driver Version: 1.20.0.0
Driver Date: 01/01/2002
Manufacturer: Xeltek Electronic Co.,Ltd
ProviderName: Xeltek Electronic Co.,Ltd
Num files: 3
Backed Up: False
XMLIgnition: 6/7/2007 8:46:20 AM

Driver:
Driver Type: Ports (COM & LPT)
Driver Version:
Driver Date:
Manufacturer: UNKNOWN
ProviderName: UNKNOWN
Num files: 0
Backed Up: False
XMLIgnition: 6/7/2007 8:46:20 AM

Driver: USB Reader (UIC) Device Driver
Driver Type: Universal Serial Bus controllers
Driver Version: 4.00.0.0
Driver Date: 09/26/2001
Manufacturer: USB Reader
ProviderName: USB Reader
Num files: 2
Backed Up: False
XMLIgnition: 6/7/2007 8:46:21 AM

Driver: Mass Storage (UISDMA2W) Device Driver
Driver Type: Universal Serial Bus controllers
Driver Version:
Driver Date:
Manufacturer: USB Reader
ProviderName: USB Reader
Num files: 0

Backed Up: False
XMLIgnition: 6/7/2007 8:46:21 AM

Driver: SPYRUS Rosetta USB Token V2
Driver Type: Smart card readers
Driver Version: 3.1.0.6
Driver Date: 08/09/2003
Manufacturer: SPYRUS
ProviderName: SPYRUS
Num files: 3
Backed Up: False
XMLIgnition: 6/7/2007 8:46:21 AM

Driver: Adobe PDF Converter
Driver Type: Printers
Driver Version: 0.3.1282.1
Driver Date: 10/6/2002
Manufacturer: UNKNOWN
ProviderName: UNKNOWN
Num files: 8
Backed Up: False
XMLIgnition: 6/7/2007 8:46:21 AM

Driver: HP LaserJet 9000 PCL 6
Driver Type: Printers
Driver Version: 0.3.3790.2724
Driver Date: 9/28/2006
Manufacturer: HP
ProviderName: UNKNOWN
Num files: 30
Backed Up: False
XMLIgnition: 6/7/2007 8:46:23 AM

Driver: Microsoft Office Document Image Writer Driver
Driver Type: Printers
Driver Version: 0.3.2175.0
Driver Date: 3/22/2004
Manufacturer: UNKNOWN
ProviderName: UNKNOWN
Num files: 3
Backed Up: False
XMLIgnition: 6/7/2007 8:46:24 AM

Driver: HP Photosmart C4100 series
Driver Type: Printers
Driver Version: 0.3.3790.2724
Driver Date: 9/28/2006
Manufacturer: HP
ProviderName: UNKNOWN
Num files: 25
Backed Up: False
XMLIgnition: 6/7/2007 8:46:31 AM