

HART InterCivic

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Examination Dates - January 17-18, 2008

Hart InterCivic

The Hart InterCivic voting system was re-examined in Austin on January 17-18, 2008
The version number of the revised systems are:

BOSS - version 4.3.13 – ballot design and generation sub-system
BallotNow - version 3.3.11 – scanner used for deposition of mail-in ballots
eSlate/DAU – version 4.2.13 – DRE voting device – disabled access unit
JBC – version 4.3.1 -Judges Booth Controller used with eSlate to select voters' ballot
Tally – version 4.3.10 – central-count accumulator and reporting sub-system
Rally – version 2.3.7 – regional or central MBB uploading (throughput enhancement)
SERVO – version 4.2.10 – used to extract audit data from eSlates and JBC's
eScan – version 1.3.14 – scanner to read paper ballots
eCM – version 1.1.7 – used to generate security keys

Collectively, the component pieces make up Hart's System 6.2.1 voting system.

The entire system was reviewed since all components have been modified since the previous examination. The software was installed (witness build) on the system on the first day of the examination. Hash codes were generated for the files and checked to verify that they matched the file signatures listed in the NSRL database. Some of the file signatures did not match and there were files installed that are not listed at NSRL. (A response from Hart regarding this and other follow-up questions was not available at the time this report was written).

On the second day of examination the changes from the previously certified system (6.1 reviewed in May '06) were presented. The changes were discussed, and demonstrated on the equipment when applicable. A teleconference with Hart engineers was held to discuss the system security features. The examiners voted ballots on each of the voting machines. The cast vote records were transferred to Tally and the totals were checked.

Findings

- There were minor changes (applicable to Texas elections) listed in the change reports for releases 6.1 to 6.2 and 6.2 to 6.2.1. The system BallotNow and eScan sub-systems were enhanced to allow for a multi-page ballot. BOSS and eScan have been modified to allow the eScan to support each of the nine languages supported by the overall system. An prompt for the administration password was added to the eSlate when closing the poll on election day. This was added to prevent precinct judges from accidentally closing the polls early.
- Additional changes were enhancements to reports or cosmetic in nature. None of the changes appeared to alter the effectiveness of the system and there were no new components introduced.
- The system recorded and tallied the examiners' ballots correctly.

- Hart stated that all systems are installed by a Hart technician. The technician modifies the BIOS and Windows 2000 operating system to secure the system.
- Tally, Rally, and SERVO employ the "secure desktop" feature which is supposed to prevent access to the operating system by the operator during the election processing. A flaw in the "secure desktop" was discovered during the Tally examination. The standard Windows file dialog is used to select a file when exporting VR data. Presumably, the flaw is present in other places whenever a file dialog is used. This is a significant flaw because it allows an operator to delete files or launch a program that could manipulate the data files. This was discussed with the Hart engineers during the teleconference and they agreed it was a problem and that it was easy to correct. When the correction is made, a full examination should not be needed to demonstrate the fix.
- The manual adjustment to vote totals that can be done in Tally is logged to the real-time log. The number of votes added or subtracted is indicated. The manual adjustment capability was discussed because of the concern expressed in a Houston Chronicle article regarding the November '06 Harris county tabulation. I believe the message should be enhanced to state that it is a **manual** adjustment. It should use a bold font to make it stand out in the voluminous log.
- The teleconference with the Hart engineers revealed: 1) the election database password is auto-generated and unknown to operators of the system. 2) the election definition file generated by BOSS and used to propagate the election setup to the other sub-systems, is in a proprietary, binary flat-file format. The engineers stated that in order to alter the election setup surreptitiously a person would have to know the proprietary format and be able to re-sign the file with the original signature. The file signature is checked when the setup is installed on the other systems. This is very unlikely to happen.

Conclusion

The changes to the system from version 6.1 to 6.2.1 were minor overall. Accuracy has not been compromised by the changes, but there is a security issue. The file dialog flaw is significant and must be corrected. I believe with a correction to this flaw, the system meets the current requirements of the Texas Election Code and therefore recommend certification.

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Examiner