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Ms. Ann McGeehan
Deputy Assistant
Office of the Secretary of State
1019 Brazos Street
Austin, TX 78701

RE: Examination of AccuPoll Voting Systems

Dear Ms. McGeehan:

I attended a scheduled examination on January 5, 2005, at 8:30 am, for the purpose of reviewing the voting system from Accupoll, Inc. The report below summarizes my findings.

Voting Systems Versions

Hardware/Software Version	Date Previously Certified
AccuPoll Direct Recording Electronic (DRE) Voting System 2.04.05	N/A

Background

This system was examined May 27, 2004 and this examiner noted several objections at that time. The current examination reviews changes made to the system in response to those objections and those of other examiners. This report will review those responses as well as make additional recommendations.

The vendor noted that although they provide a Verified Voting Paper Trail (VVPT), the functionality has not been used in any jurisdictions except in Mississippi. That function is not being examined for certification in Texas.

Issues raised in a prior examination

Real-time logging to continuous form printer

The vendor demonstrated that the log printer worked as required by rule. Note that the purpose of the log printer is to prevent users from exiting the system during tabulation to tamper with the files. The vendor demonstrated that it is possible to login to the server during tabulation, however, the administrator does not have access to any voting system files.

Straight party voting display on the ballot review screen

The vendor added straight party vote display to the ballot screen. Note that the voter can change any vote by just touching the voting box for another candidate or issue. This approach increases the likelihood of accidentally changing a vote. Some vendors require voters to deselect a vote before changing it, although there is no consensus about which technique is preferred by voters or is more accurate.

Straight party vote is not tabulated

The revised tabulation reports now include straight party votes.

Party beside candidate names on the Ballot Review screen

The review screen now includes a clear designation of party affiliation with the candidate names.

Not all candidates are listed on the ballot review screen for contests with over 2 choices.

The vendor demonstrated that the new system displays all candidate names on the ballot review screen instead of requiring the user to click back to the original contest to determine who they voted for.

No indicator for undervotes on the ballot review screen for contests with over 2 choices.

The review screen now indicates undervotes for all positions in which not all positions have been voted.

Improved navigation between the Ballot Review screen and the Cast/Cancel screen

It is now possible to back up from the Cast/Cancel screen to prior screens to change votes. In the previous version the voter had to cancel the ballot entirely and start over. Note that the system only presents one race or issue per screen. This makes navigation a little more tedious but probably decreases potential voter confusion and improves navigation.

Clarify how the smart card is to be inserted.

The smart cards are now labeled more clearly and the terminal itself has additional visual clues about how to insert the smart card that gives the voter access to the terminal. However, it was noted that it would be relatively easy for the system to use the touch screen to provide animated graphic instructions for the voter to follow.

A write-in vote was not counted during the prior examination

The software was changed to ensure that all write-ins can be validated. It also reports write-ins that have not been validated.

Cannot un-accept an accepted provisional ballot

The vendor demonstrated that provisional ballots can be backed out if they were accepted in error. It is important to reiterate that reporting should be disabled during provisional ballot evaluation and acceptance so that the process cannot be used to determine which ballots will be accepted based on their impact on various races and initiatives.

Security and password issues

The vendor noted that passwords must be used for each significant administrative action that can affect votes on the system. This allows the log to record which individual authorized each action.

To prevent unauthorized boot-up, the BIOS only allows booting from one hard drive. Since the hard drive is sealed within the case, it will be quite difficult to gain unauthorized access to the system.

The vendor also explained that although the system uses commodity parts, the unit

itself is sealed. Any attempts to replace internal components such as the hard drive would be apparent. The vendor went further to explain that to provide the best security possible, the system "leaves fingerprints everywhere." This includes creating up to five copies of the voting records in different formats so that successfully tampering with votes is a complex undertaking that would require a significant amount of effort.

Power failure and database integrity

The vendor discussed several power failure scenarios and how the schema of multiple records protects against vote loss or tampering. In addition, the system is designed so that any unit can be disconnected from the network for a period of time, and reconnected without any loss of data. It appears that the data integrity issue has been approached rigorously.

Additional issues

It was noted that all the ballot images are transferred from the Voting Administration Workstation (VAW) to the Central Vote Consolidator (CVC) by CD. If a CD is read twice at a CVC, the audit log prints out an error message for each duplicate vote that it tries to read. This has the potential to paralyze the tabulation process. It does not seem necessary to generate an error for each vote, but rather for the CD itself.

The voting receipt was not open for certification at this examination, but the following observation is offered. The vendor provided considerable security for the document by encoding all the data plus security codes into a two dimensional bar code on the form. In addition they provide a human-readable printout of all the voter's choices. The human-readable format is probably the weakest feature of the report. It is serviceable, but additional human factors engineering could make it more readable.

Recommendations

The vendor appears to have addressed all the concerns noted at the prior examination. DIR finds no objections to certifying this system.

The following recommendations are offered to improve the product:

- The first screen presented to the user could provide an animated graphic showing the user how to insert the smart card.
- The CVC should reject a duplicate CD with a single error message rather than rejecting individual votes.
- The voting receipt should be engineered for better readability.

Respectfully,



Nick Osborn
Systems Analyst