Voting System Examination
AccuPoll, Inc

Prepared for the
Secretary of State of Texas

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Designee of the Attorney General

This report conveys the findings of the Attorney General's designee from an examination of the equipment listed, pursuant to Title 9, Chapter 122 of the Texas Election Code, section 122.036(b).

Examination Date	June 9, 2005
Report Date	June 11,2005

Component	Version	NASED Number
AccuPoll Voting Station (AVS) Model 1000-B1	2.5	N-2-13-22-22-001 (2002)
Voting Administration Workstation (VAW)	2.5	N-2-13-22-22-001 (2002)
Central Count Server	2.5	N-2-13-22-22-001 (2002)
Central Vote Consolidator CVC-1000-B	2.5	N-2-13-22-22-001 (2002)
Election Management System (EMS)	2.5	N-2-13-22-22-001 (2002)
Ballot Builder	2.5	N-2-13-22-22-001 (2002)
GoVote Writer GVW-1000-A	2.5	N-2-13-22-22-001 (2002)
Privacy Panels PNL-1000-A	2.5	N-2-13-22-22-001 (2002)
GoVote smartcards GVK-1000-A	2.5	N-2-13-22-22-001 (2002)

Notes

- All components are Unix-based and implemented in Java.
- The hardware, except for the clamshell, is off the shelf.

DRE System: AccuPoll Voting Station and Voting Administration Workstation

Election Setup	The election definition is loaded into the VAW laptop from a CD-ROM created with the Election Management System (EMS). The election definition is stored in each VAW and downloaded from the VAW to the voting stations as needed. Software to operate the VAW and voting stations is also loaded into the VAW via CD-ROM. There is permanently resident software that performs this loading, and it refuses to load any software that has not been digitally signed by AccuPoll.
Zero-total report	On the ink-jet printer in any one of the voting stations.
Authorization to vote / Ballot selection	A poll worker initializes a GoVote card on the VAW laptop to authorize voting and specify the precinct. This card can only be used to vote once, until it is re-activated by a poll worker for another voter.
View / Vote	LCD display / touch screen
Vote Storage	There are numerous copies of the vote record, including an optional voter verified paper audit trail (VVPAT). Other locations include (1) the MySQL database on the hard drive of the voting station, (2) a postscript record stored as a BLOB in the same database, (3) a compact flash memory in the voting station, and (4) the MySQL database on the VAW laptop. Two of these are on the same physical device, but the data is still on a minimum of three different physical devices, not counting the paper.
Provisional Ballots	If a provisional ballot is requested, the VAW laptop automatically prints out a ballot retrieval number, which can later be used to include that ballot in the totals
Connectivity	All precinct equipment is connected using Ethernet. There should be no connections to other equipment or to the Internet. Transmissions are check-summed with a private protocol.
Precinct Consolidation	Precinct results are continuously consolidated on the VAW laptop in the precinct. If there is more than one VAW laptop, the consolidated results are stored on all of them.
Transfer Results	Results are written on an encrypted CD for transfer to the Central Vote Consolidator and the Central Count Server. A re-writable CD cannot be used. Modem transfers are also supported, but AccuPoll did not request certification of modem transfers.
Print precinct results	On the printer in any one of the voting stations.
Straight party / crossover	Yes. Any straight-party voting must be done before any votes are cast in individual races. This means that straight-party voting cannot override votes in individual races, but it also means that straight-party votes cannot be changed, except by voiding the entire ballot and starting over.
ADA	Yes, but ADA capability is verified separately by the Secretary of State's office, so it was not demonstrated to the examiners.

Setup & Tabulation: Election Management System, Central Vote Consolidator, Central Count Server

Tamper Resistance	Operating system access is prohibited at all times (not just when the system is running) and data is protected by Unix and MySQL passwords. Other data is protected by other passwords. The system boots directly to the AccuVote application, and AccuVote asserts that operating system access is not possible without opening the machine, but admits that access can be achieved by an expert if the machine is opened.
OS access	Not permitted. See previous item for details.
Real-Time Audit Log	Yes.
Data Integrity	Transaction support with rollback is provided by the MySQL database.
Transmission	Although AccuPoll supports modem transmission, they asked that it not be certified at this exam.

Follow-up from the Previous Exam: AccuPoll has satisfactorily addressed the following problems:

1. Security of the "password vault."
2. Excessive messages on the real-time audit log (one for every ballot) when an attempt is made to load a precinct's data twice.

Suggestions

3. It would be good if the report that the election judge signs have instructions that tell the judge to verify the election signature, and to sign that it matches. Also, the election signature should be printed with groups of about four characters, for ease of comparison, because it is difficult to compare long strings of characters with no visual breaks to allow the eye to focus on one group at a time.
   Recommendation: This should not affect certification.
4. Accepting a provisional ballot is called *converting* it by AccuPoll.
   Recommendation: This is not significant enough to affect certification, but I recommend that AccuPoll fix it to avoid confusion and the negative connotations of the word *converting* in this context.
5. Although the card reader is labeled with a picture, it is not completely clear which way the card should be inserted. In my opinion, the very best solution is to label one side of the card with arrows and words to indicate which end to insert, and then orient the card reader so that the card is inserted with the label facing up, rather than left or right. Experience with retail readers indicates that users are almost never confused if the label faces up, but frequently confused (even with extensive labeling) by any other orientation.
   Recommendation: This problem it is not serious enough to deny certification, but I recommend that AccuPoll fix it.
6. The GoVote card is difficult to insert into the voting station. It must be pressed in with some force, and when this is not done the station doesn't work and it isn't

clear what is wrong, so the voter may not be able to recover without help. It does not help to press hard on the card after it is inserted; it must be removed and re-inserted. Several examiners had difficulty, and an AccuPoll representative remained nearby and gave advice about how to insert the card.

Recommendation: This problem it is not serious enough to deny certification, but I strongly recommend that AccuPoll fix it, because it will create confusion and additional workload at the polls.

Concerns

7. When the real-time audit log printer on the Central Count Server was paused, the system continued to function exactly as if the printer were printing. This means that the audit log is not *real-time* and does not technically meet the Texas requirement. (However, disconnecting or powering off the printer did stop the system and generate a log message.)

    Recommendation: This issue is small enough that certification should be granted, with the provision that the problem be corrected and the system re-examined within a reasonable time, say one year.

8. If you try to load the same precinct results into the Central Vote Consolidator twice without performing the verification step, the Central Vote Consolidator refuses to count it the second time, but logs the event the same way as it did the first time.

    Recommendation: The screen and the real-time audit log should record that it is duplicate data and was not counted again. This issue is small enough that certification should be granted, with the provision that the problem be corrected and the system re-examined within a reasonable time, say one year.

9. The following features were not submitted for certification: modem transfers and counting of absentee ballots.

    Recommendation: Certification should carry the condition that these features not be sold or used in Texas. This means that modem transfers must not be done, and absentee ballots must be handled some other way.

10. The AccuPoll system is somewhat vulnerable to tampering if the internal computer components can be accessed during polling and counting.

    Recommendation: All components should be sealed during polling and counting.

11. If a voter tries to change a straight-party vote, it will first give a warning and then clear the entire ballot.

    Recommendation: This behavior is unusual and inconvenient for those affected, but acceptable in my opinion, because I believe straight-party votes are rarely changed.