Voting System Examination
Diebold Election Systems

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 above, pursuant to Title 9, Chapter 122 of the Texas Election Code, section 122.036(b).

Examination Date	January 5, 2005
Report Date	January 23, 2005

Components Examined

Component	Version	NASED Number
Global Election Management System (GEMS), Central Count	1.18.22	N-1-06-12-12-003
AccuVote-TS R6 Voting Station	4.5.2	N-1-06-12-12-003
AccuVote-TSX Voting Station	4.5.2	
AccuVote-OS Scanner	2.0.12	N-1-06-12-12-003
VC Programmer	4.1.11	N-1-06-12-12-003
Voter Card Encoder		
Key Card Tool Utility		

Voting

Election Setup	PCMCIA card. Nothing is pre-programmed in the terminals; all the election information is in the PCMCIA card.
Zero-total report	On the thermal printer.
Authorization to vote / Ballot selection	Voter cards (PCMCIA cards), which authorize voting, are generated by • A handheld Voter Card Encoder, which can handle up to 8 ballot styles, • A laptop running VC Programmer software, or • An AccuVote R6 (occasionally). A manager card is used to authorize a machine to generate voter cards. The voter cards are automatically erased after voting, so they cannot be reused. The manager card and password authorize someone to perform any operation that the R6 is capable of, including clearing elections (although the last copy is never erased). There is no hierarchy of management functions.

View / Vote	LCD display / touch screen
Vote Storage	Internal flash memory and on the PCMCIA card.
Precinct Consolidation	Any R6 can accumulate results from other R6 devices in the same precinct, and forward all the results to election central in a single modem call. The R6 has a real-time audit printer.
Transfer Results	PCMCIA cards or a modem.
Print precinct results	On the thermal printer
Straight party / crossover	Yes. Canceling a straight-party vote does not affect any crossover votes.
Provisional Ballots	The poll worker can designate a ballot as provisional and enter a number that will identify the ballot so it can later be included in or excluded from the count. The voting station will verify that the ballot ID is a valid one, preventing most entry errors, but duplicates are not detected unless the same voting station is used.
ADA	Yes, but ADA capability is verified separately by the Secretary of State's office, so it was not demonstrated to the examiners.
Note	Each R6 is an independent stand-alone system, which can communicate with other stations or election central only when the polls are closed.

Election Setup / Tabulation

Results Storage	Encrypted, proprietary database on the hard drive.
Tamper Resistance	The OS is locked down during tabulation and the data is encrypted.
OS access	None during tabulation.
Real-Time Audit Log	Yes.
Transaction Processing	They use the transaction processing/rollback feature in the Microsoft Jet database to ensure that data remains consistent in the database.

Changes

- Added the AccuVote-TS R6 DRE voting station and the VC Programmer.
- Bug fixes.

Conditions

1. Although Diebold's support for provisional ballots worked correctly, multiple provisional ballots with the same identifying number are accepted if they are submitted to different voting stations, because the stations are not connected during voting and cannot detect duplicates under these conditions. Diebold recommends the use of preprinted labels with unique provisional ballot IDs, and that all provisional balloting be done on one voting station. The combination of these two procedures provides double protection against

accidental use of duplicate provisional ballot IDs.
Recommendation. Diebold's recommended procedures are good ones, and their use should be a condition of certification.

2. Diebold recommends that only the necessary Diebold computers be allowed on the local area network (LAN) with the GEMS computer, for security reasons.
Recommendation. They are correct, and this should be a condition of certification.

Concerns

3. The precinct totals printed at the polling place do not show the number of provisional ballots cast. This number can be calculated by subtracting the values of two of the totals that are reported, but it is confusing. An election worker might easily think that the machine was broken, rather than realizing that the difference is due to provisional ballots.
Recommendation. The number of provisional ballots should be printed on the tape, and Diebold should review the tape messages for clarity (especially the way the results are labeled) in light of the new provisional ballots.

4. Although GEMS does not permit access to the operating system during counting, this is implemented using a feature of Microsoft Windows, and can be turned off by anyone with Windows administrative rights, provided GEMS has not been started. Once GEMS has been started, it is no longer possible to defeat this.
Recommendation. GEMS should refuse to tally real votes unless operating system access is actually disabled. (For example, when GEMS starts, it could check that the proper Windows settings are actually in force, so that OS access is known to be actually disabled. If they are not in force, GEMS could refuse to run.) Conditional certification should be granted for approximately one year, with the condition that this be fixed and re-inspected within that time.