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February 22, 2006

Ms. Ann McGeehan Director of Elections Texas Secretary of State Elections Division 208 East 10th Street Austin, Texas 78711

Re: Inspection and Review of Diebold System conducted on January 18, 2006

Dear Ms. McGeehan:

Pursuant to my appointment by the Texas Secretary of State as a voting systems examiner under Texas Election Code § 122.035, please allow this letter to serve as my report concerning the above referenced examination. I, along with the other statutory examiners and staff from the Secretary of State's office, examined the following Diebold Election Systems voting systems on January 18, 2006 at the offices of Elections Division of the Texas Secretary of State in Austin, Texas:

- (1) GEMS Software 1.18.24;
- (2) Accu-Vote-TSX DRE TouchScreen with Ballot Station firmware 4.6.4;
- (3) Accu-Vote-TSX R6 DRE TouchScreen with Ballot Station firmware 4.6.4;
- (4) Accu-Vote-OS Optical Scanner (model D) with firmware 1.96.6;
- (5) VCProgrammer software version 4.6.1;
- (6) Key Card Tool Software version 4.6.1;
- (7) ExpressPoll 4000 with card writer function;
- (8) ExpressPoll 2000 with card writer function.

I examined the above referenced software and equipment (collectively referred to herein as "the GEMS 1-18-22 System") for compliance with the relevant provisions of the Texas Election Code and Texas Administrative Code related to the requirements for election machines and software. I also reviewed the written materials submitted by Diebold about the various components of the Accu-Vote System for compliance with the Texas Election Code and Texas Administrative Code requirements for voting equipment.

Officials from Diebold presented an overview of each piece of equipment and detailed the software being reviewed at the outset of the examination. A physical inspection and testing of each piece of equipment was also completed by the examiners and the Secretary of State 762501_2

staff. In so doing, the examiners cast ballots on both the Direct Recording Electronic voting machines ("DRE") (AccuVote-TSX and Accu-Vote TS R6) and paper ballots were fed into the optical scanner (AccuVote-OS(model D)). The examiners also inspected the mobile elections poll book that creates voter access cards and other smaller key card tool that creates voter access cards for various voting equipment that is part of the GEMS 1-18-22 System.

OBSERVATIONS

- 1. Each of the separate pieces of hardware examined that were capable of use for actually casting a ballot met the listed requirements of § 122.001 of the TEXAS ELECTION CODE in that each:
 - (a) preserved the secrecy of each ballot cast by the examiners;
 - (b) was suitable for use as ballot casting device;
 - (c) operated safely and accurately reflected the votes cast;
 - (d) permitted voting on all offices and ballot measures;
 - (e) excluded improper multiple votes in a single race by a single voter;
 - (f) did not count a vote for the same office or measure more than once;
 - (g) permitted write-in voting;
 - (h) allowed straight party voting; and
 - (i) produced adequate records of the votes cast on the machine for purposes of audits.
- 2. Various reports and information from other jurisdictions have called into question the potential for unauthorized manipulation of the GEMS 1-18-22 System software. This determination of whether this requirement, listed in § 122.001(4) of the TEXAS ELECTION CODE, has been met must be decided based on the technical examiners' conclusions from reviewing the programming data and technical security issues raised by other states reports and published articles in trade publications and Diebold's specific responses and attempts at addressing these issues.
- 3. For the DRE machines included in the GEMS 1-18-22 System intended for use by persons with physical disabilities, the examiners conducted several mock votes. These votes showed that the DRE System met the requirements of §81.57 of Title 1 of the Texas Administrative Code based on the accessibility of each DRE machine and the various manners in which votes could be cast (assistance for the visually impaired, hearing impaired, and those confined to a wheelchair, etc.). My only concern with the GEMS 1-18-22 System DRE equipment that contained an attached printer module (the AccuVote-TSX) is that the tablet portion of the voting device is portable for purposes of curb-side voting; however, the entire unit does not appear to be portable enough to move it to the curbside for voting. Also, it appears that if the printer attachment is connected to the AccuVote-TSX DRE, the removal of the tablet for transfer to the curbside for voting will create anomalies in the printed record of the votes cast and not count the vote cast at the curbside on the spooled tape for the printer. However, since Texas

does not require voter verified paper trails, this issue does not present a circumstance that should preclude certification. In the event the Texas Legislature or the Secretary of State chooses to change the requirements for DRE's to require voter verified paper trails, this issue should once again be addressed to ensure curbside voting does not create gaps in the written record of the votes.

- 4. Additionally, the voting of mock ballots by the examiners showed that DRE systems for the GEMS 1-18-22 System: (1) allowed a voter to review and change their selections before casting a ballot; (2) notified voters if more selection are made in a race than are allowed; (3) provided an on site paper record of the voting done on the machine; (4) provided access and voting capabilities for persons with physical disabilities; and (5) allowed for use of languages other than English in casting ballots.
- 5. The examination did not include a testing of modem transmission of voting data to a central counting location; however, a subsequent demonstration to the Secretary of State staff verified that the GEMS 1-18-22 System is capable of such transmission.
- 6. The height and accessibility of the AccuVote-TSX (that included a self-contained stand) met the requirements of the TEXAS ELECTION CODE. The other voting equipment was portable such that it may be placed on tables so that height and accessibility are not an issue.
- 7. The DRE's and optical scan ballots counters met the requirements of TEXAS ELECTION CODE § 122.033 in that each contained adequate physical security devices to guard against tampering (see No. 2 above for other non-physical security concerns); protected registering counters; a public counter; and a protective counter.
- 8. The audit logs for each piece of the voting equipment in the GEMS 1-18-22 System had adequate audit log capabilities as required by § 81.62 of the Texas Administrative Code.
- 9. The examiners cast provisional ballots, blank ballots and incomplete ballots during the examination and each piece of equipment in the GEMS 1-18-22 System correctly counted and accounted for these differing types of ballots.
- 10. The voter access card creators and the cards for both poll site workers and election administrators were also demonstrated during the examination. The method of creating the voter access cards with both the small card creator and the electronic poll books (Express Poll 4000 and 2000) worked as described. The new delineation between administrator and poll worker cards gives added security to the election process and the integrity of any action taken to alter any of the DRE's configuration or other attributes at the polling place.

11. The GEMS software that is part of the GEMS 1-18-22 System adequately showed zero reports, voting tabulation and security controls to exclude improper votes while still accounting for provisional ballots as required by the Texas Administrative Code.

RECOMMENDATION

Based on the foregoing observations and my examination of the GEMS 1-18-22 System, its accompanying literature and the representations made by Diebold officials both in its literature and at the examination, I recommend that the GEMS 1-18-22 System be certified as compliant with the requirements of the Texas Election Code and the Texas Administrative Code so long as the technical examiners conclude that the security concerns with the potential for manipulation of the GEMS 1-18-22 System software do not present a serious threat such that the requirement that a voting system is free from fraudulent or unauthorized manipulation has been satisfied.

The Secretary of State also asked the examiners to provide an opinion about the printer module used on the AccuVote- TSX DRE machine. As discussed at the examination, since the printer module is not a requirement under Texas law, that opinion will be provided under a separate cover so that there is no possibility for confusion as to whether the opinion is also a report or recommendation under the Texas Election Code.

This report should not be construed as a tacit or implied comment on any of the technical aspects of the GEMS 1-18-22 System other than as expressly stated herein. In the event any of the equipment, software or security devices examined is altered, changed or decertified by any accrediting agency (other than a "minor modification qualified for administrative certification process" as that term is defined in § 81.65 of the Texas Administrative Code), this report should be considered withdrawn and not relied upon from that point forward.

Thank you for the opportunity to serve as an examiner and participate in this important process that protects the integrity of Texas' voting systems.

Brandon T. Hurley