DEPARTMENT OF INFORMATION RESOURCES

July 11, 2003

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State of Texas

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

RE: Re-examination of the Unity Election System Version Release 2.4 and
Firmware for vote tabulation devices from Election Systems and Software
(ES&S)

Dear Ms. McGeehan:

I attended a scheduled examination May 28, 2003, at 9:30 am, for the purpose of
examining the voting systems from Election Systems and Software (ES&S). The
report below summarizes my findings.

Voting Systems Versions

Hardware/Software Version

Unity Election System v2.4
Audit Manager v7.0.2
EDM – Election Data Manager v7.2:0.0
Ballot Image Manager v7.2.0.0
HPM – Hardware Program Manager v5.0.0.0
DAM – Data Acquisition Manager (Host) v5.0.0.0
ERM – Election Reporting Manager v 6.4.0.0

Tabulation Systems (all currently certified)
Model 100 Precinct Count System Firmware v5.0.0.0
Model 650 Central Count v1.2.0.0

DRE voting systems

IVotronic DRE Voting System Firmware v8.0.0.0

System description

Unity is an umbrella marketing designation that includes all of the software
modules noted above. The modules are upgraded as a single package; none of
them can be upgraded individually.

The core functionality demonstrated in prior versions has not been changed.
Changes to be certified at this examination addressed issues that reviewers
brought up at the September 11, 2002 review. In addition, ES&S made changes
to the way votes were tabulated for large jurisdictions to eliminate most

unnecessary entries printed to the log printer.

Issues addressed

Issues addressed by this examination and their resolution are as follows:

- *The ES&S Model 550 Central Tabulator audit log option was not initially enabled, and therefore did not print until it was reconfigured.* Resolution: the default setting was changed in the software as shipped from ES&S.

- *The Unity Real Time Audit Log was confusing, must have accurate time stamps, needs to be clearer and must be more usable.* The audit log messages were considerably improved. It might be advisable to develop an online viewer for the log that would include even more detailed information for each entry. This would help auditors decipher the audit trail more easily. The time stamp problem was just an artifact of the way the prior examination was set up, not one of system malfunction.

- *The ES&S Model 100 Precinct Tabulator does not have a real time audit log printer.* This issue was addressed by change to 1TAC 81.62 that removed some requirements for precinct-level tabulation device audit logs.

- *The slow initialization of the ES&S iVotronic Precinct Tabulator was noted.* The vendor demonstrated an elegant, low-cost solution to this problem. In addition, the system now provides better boot-up and administration messages, eliminating some areas of potential errors.

- *An iVotronic supervisor PEB used to open the polls already contained previous vote counts.* This issue surfaced just because of the way the prior examination was set up. The vendor addressed this by providing additional warning messages and including the warnings and responses in the audit log for the device.

- *A printer is not always attached to the iVotronic for the purpose of real time log functions, forced printing of zero tapes from each terminal, and real time printing of events such as the transfer of vote totals from an iVotronic terminal to the PEB.* This issue was addressed by 1TAC 81.62 that removed some requirements for precinct-level tabulation device audit logs.

The vendor illustrated the problems Bexar County was having with the real time log printer. The proposed solution was to not transfer any vote totals that were zero. This reduced the number of log entries by more than an order of magnitude. In addition, this made the log much easier to read since all the entries contained useful data rather than zeros.

The vendor demonstrated changes to the model 650 Central Tabulator audit log. The audit messages have been expanded and the usability of the log has been improved.

The Model 100 scanner was demonstrated with the new firmware that improves scanning accuracy.

The software is now supported on Windows 2000 and Windows XP, and the HPM and DAM modules have been ported to Windows.

Recommendations

The vendor continues to make significant strides in integrating its diverse product line and improving its auditability and security. This exam also set new standards for documentation and delivery.

The Department of Information Resources (DIR) finds no technical objection to certifying the Unity Election System and firmware demonstrated at this examination.

Respectfully,

Nick Osborn
Systems Analyst

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