

The State of Texas




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Roger Williams
Secretary of State

MEMORANDUM

TO: Ann McGeehan, Director of Elections, Secretary of State's Office

FROM: Paul Miles, Staff Attorney, Election Division Legal Section 

DATE: February 22, 2007

RE: Election System and Software Voting Systems Examination

On January 19, 2007, Election Systems and Software ("ES&S") presented modifications to its previously certified voting systems for examination. The voting systems had undergone review at an independent testing authority ("ITA") and a copy of the ITA reports along with the EAC/NASED certification numbers were included with the application. In reliance on the ITA review, the examination focused on the voting systems' compliance with Texas voting system standards as set out in Chapter 122 of the Texas Election Code.

AutoMARK Information Management System ("AIMS") v. 1.2.18 AutoMARK Voter Assist Terminal ("VAT") v. 1.1.2258

The AutoMARK is a previously certified electronic ballot marking device designed to be used in conjunction with the vendor's optical scan voting systems. There appeared to be no major functional changes from the AutoMARK as reviewed in previous examinations. The ballots cast on the AutoMARK were successfully tabulated on Models 100 and 650 ("M100" and "M650") optical scanners. As in previous examinations, the ballot image took a long time to load onto the touch screen when inserted in the AutoMARK. The ballot printing also takes a significant amount of time after the voter has completed voting on the touch screen. The outputted ballot also required a bit of force to release from the AutoMARK.

Additionally, we reviewed the AutoMARK's compliance with the accessibility requirements as set out in 1 T.A.C § 81.57 of the Texas Administrative Code.

I recommend certification of the AutoMARK Information Management System v. 1.2.18 and Voter Assist Terminal v. 1.1.2258.

M100 OMR Precinct Counter v. 5.2.1.0

The M100 Precinct Counter v. 5.2.1.0 is a previously certified precinct-level optical scanner. There appeared to be no functional changes from the M100 as originally certified. Both hand

marked and ballots originated on the AutoMARK were cast on the M100. The results of ballots cast on the M100 were successfully tabulated and uploaded into Unity. In past examinations, a "bleed through" issue had arisen with certain markers and mistimed races on the front and back of the ballot. This has been corrected through changes in Image Manager, which prohibit creation of a ballot with races lined against each other on the front and back of the ballot and the vendor's emphasis on voter use of the correct marking devices.

I recommend certification of the M100 Precinct Counter v. 5.2.1.0 with a condition in the certification that the user comply with the vendor's directives on mark sensitivity and marking devices.

M650 Central Count Ballot Tabulator (Green Light) v. 2.1.0.0

The M650 Central Counting Ballot Tabulator v. 2.1.0.0 is the vendor's previously certified central counting station tabulator. The reader has been changed from a visible red light to a green light which provides greater sensitivity to voter's marks.

I recommend certification of the M650 Central Count Ballot Tabulator v. 2.1.0.0. with a condition in the certification that the end users comply with the vendor's directives on mark sensitivity and marking devices.

iVotronic, v 9.1.6.2 - 12" Non ADA Voter Terminal and attached RTAL printer iVotronic, v 9.1.6.2 - 12" ADA Voter Terminal with 3 button audio and attached RTAL printer iVotronic, v 9.1.6.2 - 12" Supervisor Terminal iVotronic, v 9.1.6.2 - 15" Supervisor Terminal iVotronic, v 9.1.6.2 - 15" Non ADA Voter Terminal and attached RTAL printer iVotronic, v 9.1.6.2 - 15" ADA Voter Terminal with 3 button audio and attached RTAL printer iVotronic, v 9.1.6.2 - 15" ADA Voter Terminal with 4 button audio and attached RTAL printer

The iVotronic is ES&S' previously certified DRE voting machine, presented for examination in a smaller 12" version, in addition to the prior 15" device. In addition, the vendor showed both 12" and 15" versions with attached printers for voter verification, termed the real time audit log (RTAL). Both versions of the iVotronic were also presented with and without the disability component. On January 18, prior to the full examination, we reviewed the disability component of the iVotronic and determined that the system still meets the requirements set out in 1 T.A.C § 81.57 of the Texas Administrative Code.

During the examination, the examiners split into groups and cast ballots on each version of the iVotronic. ES&S was initially unable to open the polls on the iVotronics and received an error message that the databases did not match. ES&S surmised that the issue may have arisen because the election definition had been done in Unity the day before, but the Personalized Electronic Ballots (PEB) themselves retained incompatible data from a previous election. Their solution was to reburn the PEBs and compact flash cards with the data for the examination test election. Once this was resolved, they were able to begin voting the provided script votes on the iVotronics and the cast votes were successfully uploaded into Unity.

I recommend certification of the iVotronic in the non-RTAL configurations. If the use of voter verified paper audit trails is authorized or required by the Legislature, along with any necessary rules from the Secretary of State on their use, a full re-examination of the iVotronic with RTAL should not be necessary and the certification could be modified to include use of the printer.

Unity Election Management System v. 3.0.1.1
Election Data Manager, v. 7.4.4.0
ES&S Image Manager, v. 7.4.2.0 to include Ballot On Demand
Hardware Programming Manager, v. 5.2.4.0
Data Acquisition Manager, v. 6.0.0.0
Election Reporting Manager, v. 7.1.2.1
Audit Manager, v. 7.3.0.0
iVotronic Image Manager, v. 2.0.1.0

Due to the time spent examining and voting on the AutoMARK, iVotronic, and M100/M650, there was not time for a sufficient review of the Unity system. The ballot definition procedures were not reviewed at all. The initial upload of votes from the iVotronics into the Election Reporting Manager ("ERM") contained a discrepancy, showing only 3 votes where there should have been 9 (with one provisional vote). The 9 votes were successfully uploaded on the second attempt. After the examination, ES&S determined that the 3 votes were data from a prior election. The user failed to move the data read from the compact flash card to the correct ERM folder. This is a concern: the reason the problem was noticed in this case was because of the discrepancy in the number of votes. Had the total number of votes from the prior election been closer to the number being uploaded, it is unclear whether the problem would have been noticed by the examiners or the vendor. On an actual election night, while election officials should be auditing their data by comparing the printed precinct tapes to the number of voters on the combination form and against the precinct result in ERM, this is the sort of problem that might not be immediately noticed. As other examiners have noted, it is best when past election results are automatically zeroed out or segregated to relieve election officials from the need to manually ensure that no past election results remain in the system.

I recommend that Unity be re-examined with a concentration on ballot definition and tabulation procedures with an eye towards user ease of use. Such an examination could use pre-cast ballots in a more typical election configuration rather than the complete product line as in the January examination.