

Media Backgrounder

Multilevel Equipment Testing Program Designed to Assure Accuracy & Reliability of Touch Screen Voting System

The adoption of any new technology brings with it questions about the accuracy, reliability and “roadworthiness” of the new system. Public confidence in the elections process is central to the health of our democratic institutions, making it essential that any new voting system be subjected to rigorous testing to assure its performance on election day.

The Diebold Accuvote TS touch screen voting terminals (and the optical scan ballot tabulators used to count absentee votes) have endured just such scrutiny – beginning with their design and manufacture all the way through delivery and deployment into each Georgia county.

Georgia election law requires that any voting system deployed in Georgia meet both national and state certification requirements, pass acceptance testing once deployed to a county and be subjected to “Logic and Accuracy” testing before being put into service on Election Day. Major components of this multi-tiered testing regimen are:

National Certification: National election equipment standards are established by NASED (the National Association of State Elections Directors) in cooperation with the Federal Elections Commission and require that any new system successfully complete testing by Independent Test Authorities (ITA’s). Separate labs test the hardware and software components of the new systems. The two testing facilities, Wyle Laboratories and Ciber, Inc. are located in Huntsville, Alabama and have extensive experience in NASA-related testing. Software is examined for reliability and hardware is subjected to a variety of “torture tests” including exposure to temperature extremes, electrical spikes and even being dropped on the floor.

State Certification: Following NASED certification units then must pass state certification tests. Dr. Britt Williams of Kennesaw State University’s (KSU) Computer Science department, who is a nationally recognized expert on election systems, serves as the state’s consultant and performs all testing. The state testing examines both hardware and software for accuracy and reliability, and mock elections are conducted on the equipment, witnessed by county election officials.

Diebold’s touch screen and optical scan (for absentee balloting) systems passed both levels of testing before being considered for acquisition in Georgia. Following the contract award, as units were manufactured and shipped into the state, an entire new series of tests were conducted on each individual voting unit.

Individual Unit Testing: Before leaving the factory, each touch screen terminal receives a diagnostic test. Upon arrival at Diebold’s central warehouse in Atlanta, each unit was put through a diagnostic sequence to test a variety of functions, including the card reader, serial port, printer, the internal clock and the calibration of the touch screen itself. These tests were audited by experts from KSU’s Center for Election Systems, who tested a

representative sampling of the voting units. After shipment to each of Georgia's 159 counties, county acceptance testing (which consists of the same types of diagnostic procedures) was performed by KSU staff on each voting terminal and the thousands of encoders (at least three per precinct) used to activate voter cards.

Georgia law requires that before an election, each of the 22,052 voting units also undergo "Logic and Accuracy" testing which examines system features, insures that votes that are cast are properly recorded, and assures that all candidates and questions for each ballot style in each precinct are properly loaded onto the system. Sample votes are cast on the equipment and these totals are verified. (Logic and Accuracy differs from the previous rounds of examination because the testing is specific to the exact ballot that will be displayed in a specific precinct on election day). Voter card encoders and optical scan ballot tabulators are also tested at this time, and at least one memory card from each precinct is uploaded to the county server to ensure that the upload features necessary to compile and count the votes are working properly. At the conclusion of this testing phase, the units are put into election mode and checked to insure no votes have been recorded in any race. Touch screen terminals are then locked and sealed – and the numbered seal is not broken until they are placed into service on election day.

Georgia's multi-tiered election equipment testing program, among the most rigorous in the nation, is designed to assure the highest possible level of system reliability on election day. To recap, major components of testing are:

- National certification via NASED
- State certification by KSU
- Individual unit testing by Diebold upon arrival in Georgia (with KSU oversight)
- County acceptance testing
- Pre-election Logic and Accuracy testing