

iVOTRONIC LOGIC & ACCURACY TESTING

November 28, 2001

1. ACCURACY OF VOTE TABULATION

The iVotronic firmware accepts voter selections and stores each voter's ballot image when a ballot is CAST. The accuracy of the firmware has been ITA tested and proven by NASED.

2. CONTEST AND CANDIDATE VOTE SELECTION VERSUS VOTING POSITION SELECTION

How does one know candidate "John Smith" selected in ballot style one, located on page one of the ballot also will receive a vote if selected in ballot style two, located on page five of style two? How does one know candidate "John Smith" rotated in a contest from one ballot style to another style will receive the vote if selected regardless of rotated position?

To answer the above two questions and others like them one must understand the difference between how iVotronic tabulates a vote versus how traditional paper; lever machines and other DRE systems tabulate a vote.

Traditional paper, lever machines and other DRE systems rely on contests and candidates being in a predetermined voting position/location on a ballot to accurately tabulate. As an example, on paper systems, candidate "John Smith" in ballot style one is located opposite timing mark 10 or punch location 16, in ballot style two "John Smith" is located opposite timing mark 11 or punch location 17. Lever machines and other DRE systems also rely on a candidate being positioned under a specific lever, opposite a certain button or in a predetermined touch-screen location to be accurately tabulated.

All of the above system types tabulate a vote for a candidate utilizing software or firmware that read or sense a voting position/location by ballot style and then correlates that position/location to a counter for a candidate. Therefore, if the paper ballot, punchcard pages, ballot strips, etc. don't match the positional programmed software or firmware, candidate votes may be placed into the wrong candidate counter. This is why any system that utilizes positional voting positions/locations to tabulate a candidate vote are prone to errors and a L & A test must be conducted in a manor where every ballot style and every candidate in every style must be voted and checked for accuracy.

iVotronic does not utilize predetermined positions/locations to tabulate a candidate vote correctly. iVotronic stores all contest and candidate data for an election in one contest/candidate table. This table is utilized by every ballot style for presentation of the

ballot and to determine where individual votes are stored. The iVotronic firmware utilizes this table to self-format the contests, candidates, rotation, etc. ballot screens for each ballot style. This method of self-formatting ballot presentation and tabulation ensures that "John Smith" regardless of his physical location within a ballot style will always receive a vote if selected.

With iVotronic, "John Smith's" counter goes wherever he goes on a ballot, "John Smith" does not have to worry about making sure he goes to the voting position/location he has been assigned on a ballot style. This advanced self-formatting iVotronic method of having the counter go with the candidate, instead of having the candidate go to a voting position/location simplifies L & A for iVotronic.

3. *iVOTRONIC TERMINAL TESTING*

If I test vote a ballot on one iVotronic terminal will it vote correctly on another?

YES. Prior to every election each iVotronic terminal must be Cleared and Tested. This function is an iVotronic firmware application item located on each terminal's Service Menu. This function tests each of the three internal terminal memories to ascertain that each is receiving and storing votes correctly. This test also checks the terminal's processor board, LCD screen and touch-screen. Since each terminal must have this function performed and each terminal operates identical to another, ballots test voted on one terminal will also perform properly on any other terminal utilized in the election.

4. *HOW TO CONDUCT A iVOTRONIC L & A TEST*

Step 1.

Definition of Polling Location as used in this document is a location where voters may vote. It may contain several individual precincts, in the case of an Early Voting location or one voting precinct.

Develop a voting matrix that includes the allocation of predetermined test votes for all contests and candidates for the election. The test votes should then be summarized into the same total groups by which the vote totals from iVotronic are to be compared. The test vote matrix maybe generated by utilizing the mail absentee ballots, graph paper or a print-out from ballot design system. Please utilize the easiest, most efficient method to develop the test vote matrix.

If the county is utilizing the iVotronic "coded ballot feature" a unique number should be assigned to each paper test ballot to be voted. By utilizing a unique number for each test ballot, audit data from the test iVotronic(s) can be examined to help resolve any test vote discrepancies.

Develop a list of polling locations, precinct (numbers) and the ballot styles associated with each polling location and/or precinct. This list will be used to check the zero tape

from each polling location and/or precinct to make sure the correct precinct(s) and ballot style(s) are assigned.

Step 2.

Prepare a test Master PEB for each polling location in the election.

Step 3.

Open iVotronic terminal(s) with the appropriate polling location(s) test Master PEB. Print a zero tape. Check zero tape for correct precincts (if more than one is assigned to a polling location), ballot styles, contests and candidates that are to appear in polling location.

Step 4.

Vote test ballots prepared in Step 1, one at a time onto the Opened iVotronic(s). Visually verify the hand prepared test ballot with the test ballot entered onto the iVotronic prior to pressing the "VOTE" button on the iVotronic(s) to cast each test ballot. The visually verification of each test ballot will help insure the accuracy of the test vote.

If the "coded ballot feature" is being utilized, make sure the unique ballot number assigned in Step 1 is entered for each test ballot voted on iVotronic terminal(s).

Each precinct (if appropriate), ballot style, contest and candidate should be voted at least once during the test.

Step 5. After casting test ballots, Close terminal(s) and print results tape. Check iVotronic tape totals against paper test ballot totals for accuracy of iVotronic test vote. **Resolve any discrepancies.**

Repeat Step 3 for each polling location.

Repeat Steps 4 and 5 as many times as required to test all contests and candidates.

Note: If iVotronic terminal(s) utilized during the test are to be utilized in the actual election, each terminal must be Cleared and Tested prior to actual election use.

