# Voting System Examination
# Election Systems & Software (ES&S)

Prepared for the
Secretary of State of Texas

James Sneeringer, Ph.D.
Designee of the Attorney General

This report conveys the opinions of the Attorney General's designee from an examination of the equipment listed, pursuant to Title 9, Chapter 122 of the Texas Election Code, section 122.036(b).

**Examination Date**  July 10, 2018
**Report Date**  August 9, 2018

## Examination of ES&S Voting System (EVS) 5.2.4.0

EAC Certification Number:  ESSEVS5240

| Components Examined | Version |
|---|---|
| AutoMARK Voter Assist Terminal | 1.8.6.1 |
| DS200 Precinct Ballot Counter | 2.12.2.0 |
| DS450 Central Scanner and Tabulator | 3.0.0.0 |
| DS850 Central Scanner and Tabulator | 2.10.2.0 |
| Electionware | 4.7.1.4 |
| Event Log Service | 1.5.5.0 |
| ExpressLink | 1.3.0.0 |
| ExpressVote & Previewer, HW v. 1.0 | 1.4.1.7 |
| ExpressVote & Previewer, HW v. 2.0 | 2.4.2.0 |
| PaperBallot | 4.6.1.0 |
| Removable Media Service | 1.4.5.0 |
| Toolbox | 3.1.0.0 |

## Changes from Last Version Examined

This equipment is being re-examined because the ExpressVote voting station needed some minor changes, due to hardware components that are no longer manufactured.  A few other changes we made as well.  The last certified version was 5.2.

Here are the major changes:

1. Code optimization (Electionware, no change ID)
2. Updated audio prompts for enhanced support of ADA voting (Electionware, change ID EW-5958)
3. Resolved an issue with write-in entries in ADA voting in multi-language elections (ExpressVote, change ID EV1-250)
4. Resolved an issue where very long candidate text can truncate (Express Vote, change ID EV1-255)

## System Overview

EVS is a comprehensive election system that supports most modern voting methods.

Election setup is done using Electionware and then transported to the various Election-Day devices on encrypted USB memory sticks.

On Election Day, voters can mark paper ballots manually, or use ExpressVote or AutoMARK. ExpressVote is a touch-screen voting station that can be used either as a direct recoding electronic (DRE) device that records voters' choices on electronic media, or for printing their choices on a paper *Voter Summary Card* for separate tabulation.  In the configuration being examined, the ExpressVote cannot be used as a DRE – it can only be used to print Voter Summary Cards.

The Voter Summary Card contains a complete record of the voter's choices in both human-readable form (so the voter can verify it) and machine-readable form (for tabulation), so it serves the same function as a paper ballot.  The older AutoMARK voting stations can also be used to record votes on paper ballots.

At the polls, election workers first identify a voter's precinct and split, and then use ExpressLink to print an activation card for ExpressVote.  For manual voting or voting on an AutoMARK, the voter is given a paper ballot.  The AutoMARK recognizes the ballot and shows the voter the appropriate choices.

The paper ballots can be scanned in the precinct using the DS200, or in a central-count location using the DS450 or DS850.  The results of DRE voting and the ballots scanned in the precinct are written on USB memory which is then carried to the central-count location for final tabulation.

## Examination Procedures

This was a three-day examination. We observed as the vendor installed the firmware and software using files obtained directly from the VSTL by the Secretary of State, thus providing chain of custody. Then we verified version numbers, asked technical questions, and discussed the technical aspects of the system.

Finally, we heard a presentation about the system, voted on the different voting stations, tabulated using each scanner, transported election results to the central-count system, and verified that the results were tabulated properly.

## Concerns

There are several changes that I recommend for EVS 5.2.4.0. These do not rise to the level that certification of this version should be denied, but in my opinion, certification of future versions should require them to be addressed.

*Crossover voting.* Voters who vote a straight-party ballot, and then override by selecting a different candidate in one particular race (called crossover voting), may be very confused by the message they receive, which says "You have removed a candidate that was selected by your Straight Party vote. Your Straight Party selection will also be removed."
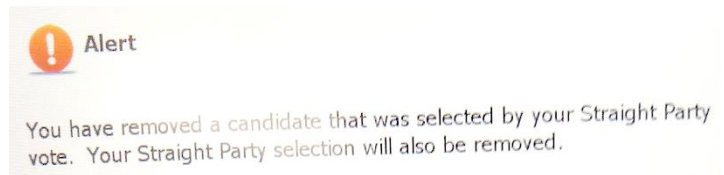


That message is very confusing, and will almost certainly be interpreted by many voters to mean that their straight-party vote has been removed from all other candidates.

I suggest a message like this: You have changed your vote for a candidate selected by your straight-party vote. Your straight-party vote remains in effect for all other candidates."

*Not voting straight-party.* A voter who decides against a straight-party vote receives the following message, which is also quite confusing: "Contest Not Fully Voted. You have selected fewer choices than the number allowed in this contest."

"Not Fully Voted" implies that the voter has made a mistake or overlooked something, when in fact this is a perfectly valid choice. This is exacerbated by the word "contest," because the straight-party vote is not a contest in the ordinary meaning of the word.



For the straight-party vote *only*, I recommend completely removing this message, and instead go immediately to the first race. This is not something that requires a warning.
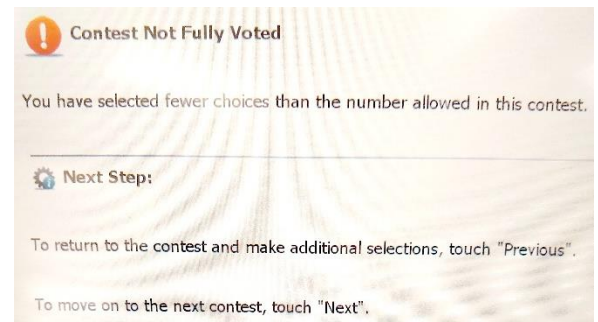
On the verification screen, it suffices to simply remove the line "Contest Not Fully Voted" from the straight-party box.

***Casting the ballot.***  When the voter has indicated that the ballot is complete, the message is "Print Card. Your selections will now be printed on the inserted card."  Since the ExpressVote is being used as a ballot marking device, and not a direct recording electronic (DRE) device, the message is perfectly accurate, and to those of us familiar with ballot-marking devices, it's perfectly clear.

However, it is not very clear for voters.  To see this, consider that many voters will have previously used a DRE, and will think they are done.  Others may have never voted electronically, and not understand ballot-marking devices.
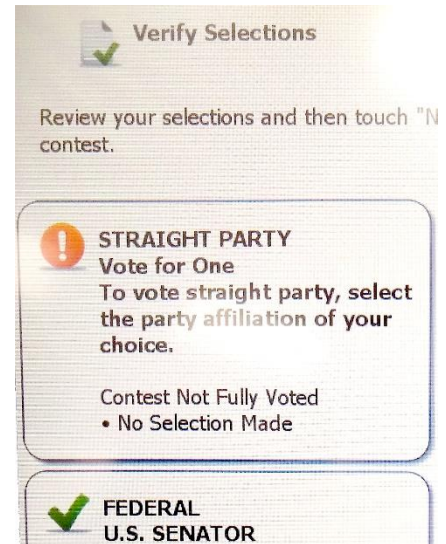
I suggest a message like this:

> **Print Card**
> Your selections will now be printed.
> To cast your ballot, insert the printed ballot into the ballot box or scanner.

This will significantly help voters to understand the process.

## Summary

If the three confusing messages I identified were fixed, the EVS 5.2.4.0 would be a good election system.  Since this is a minor upgrade to a system already being used in Texas, these concerns should not prevent certification of this version, but they should be fixed before the next certification.

I recommend certification of EVS 5.2.4.0.