



United States Election Assistance Commission



Certificate of Conformance

MicroVote EMS 4.4

The voting system identified on this certificate has been evaluated at an accredited voting system testing laboratory for conformance to the *Voluntary Voting System Guidelines Version 1.0 (VMSG 1.0)*. Components evaluated for this certification are detailed in the attached Scope of Certification document. This certificate applies only to the specific version and release of the product in its evaluated configuration. The evaluation has been verified by the EAC in accordance with the provisions of the *EAC Voting System Testing and Certification Program Manual* and the conclusions of the testing laboratory in the test report are consistent with the evidence adduced. This certificate is not an endorsement of the product by any agency of the U.S. Government and no warranty of the product is either expressed or implied.

Product Name: EMS _____

Model or Version: 4.4 _____

Name of VSTL: Pro V&V _____

EAC Certification Number: MVTEMS44 _____

Date Issued: 05/01/2020 _____

Mona Harrington
Executive Director

Scope of Certification Attached

Manufacturer: *MicroVote General Corporation*
System Name: *EMS 4.4*
Certificate: *MVTEMS44*

Laboratory: *Pro V&V*
Standard: *2005 VVSG*
Date: *05/01/2020*



Scope of Certification

This document describes the scope of the validation and certification of the system defined above. Any use, configuration changes, revision changes, additions or subtractions from the described system are not included in this evaluation.

Significance of EAC Certification

An EAC certification is an official recognition that a voting system (in a specific configuration or configurations) has been tested to and has met an identified set of Federal voting system standards. An EAC certification is **not**:

- An endorsement of a Manufacturer, voting system, or any of the system's components.
- A Federal warranty of the voting system or any of its components.
- A determination that a voting system, when fielded, will be operated in a manner that meets all HAVA requirements.
- A substitute for State or local certification and testing.
- A determination that the system is ready for use in an election.
- A determination that any particular component of a certified system is itself certified for use outside the certified configuration.

Representation of EAC Certification

Manufacturers may not represent or imply that a voting system is certified unless it has received a Certificate of Conformance for that system. Statements regarding EAC certification in brochures, on Web sites, on displays, and in advertising/sales literature must be made solely in reference to specific systems. Any action by a Manufacturer to suggest EAC endorsement of its product or organization is strictly prohibited and may result in a Manufacturer's suspension or other action pursuant to Federal civil and criminal law.

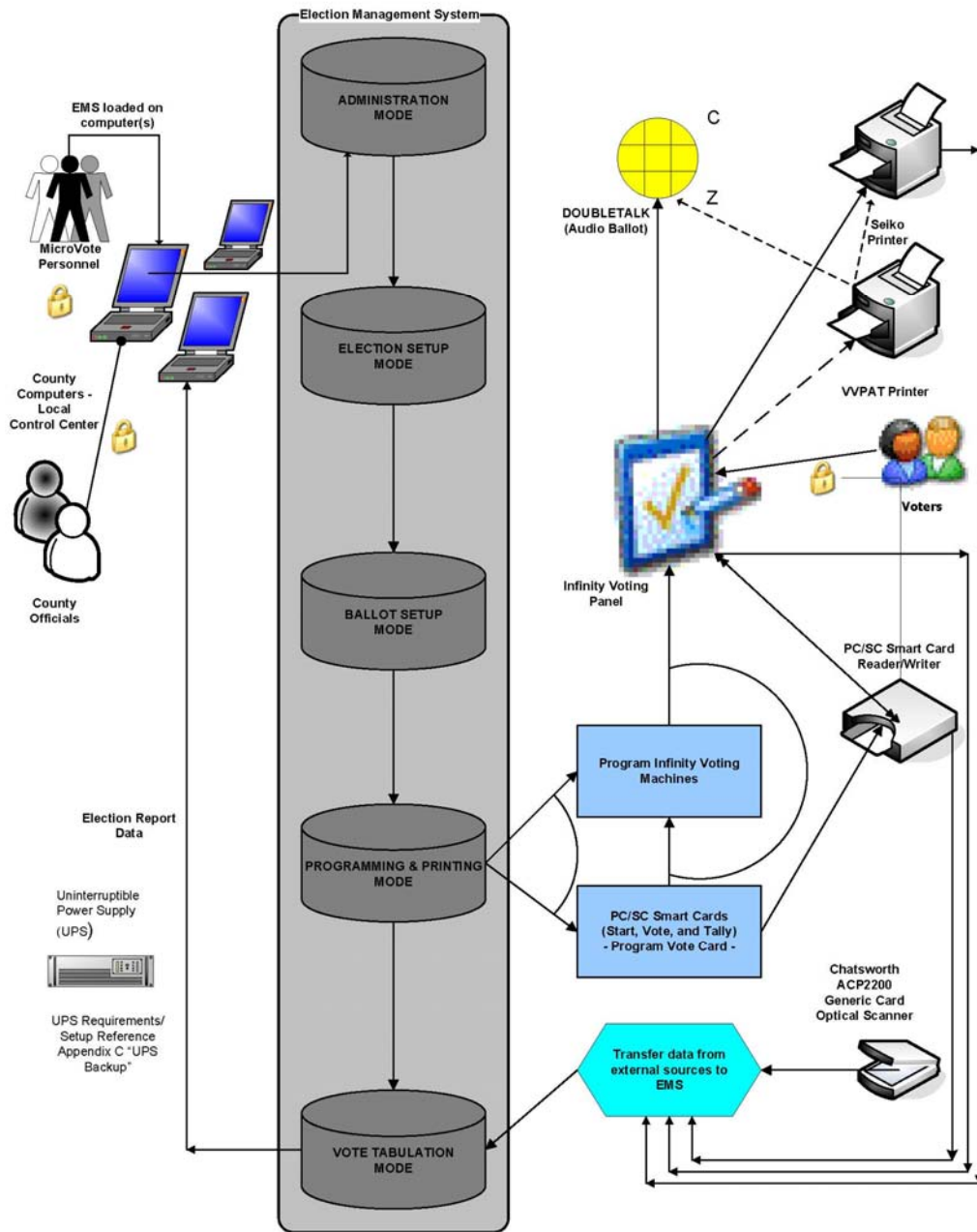
System Overview:

The MicroVote EMS 4.4 software functionality is divided by activity, based on each stage of the election. These activities are further divided into five modes, all building on each other to complete the election process: Administration, Election Setup, Ballot Setup, Programming & Printing, and Vote Tabulation.

The EMS software supports the MicroVote Infinity voting panel. This panel is a direct recording electronic (DRE) device, and is connected to EMS via a serial port. Data/Vote tabulations exchange between the EMS and the Infinity machine is done directly through the serial port or

via a Smart Card programmed for each election. OMR Ballot Cards, sometimes referred to as Absentee Cards, are optically scanned by a Chatsworth ACP 2200 reader. Several COTS hardware items and software are used with the EMS software. EMS is designed to be used with Microsoft Windows 10 Pro X86/X64, and is installed on a Dell computer desktop and/or laptop. The database software is SQL Server 2017 Express. There is a COTS DOUBLETALK LT text-to-speech converter box attached to the Infinity machine. There are also COTS Smart Cards and Smart Card readers/writers. All OMR/Absentee ballot cards are optically scanned by the ACP 2200 reader.

System Diagram



Certified System before Modification (If applicable):

- EMS Release 4.0 Certificate ID: MVTEMS40
- EMS Release 4.0B Certificate ID: MVTEMS40B
- EMS Release 4.1 Certificate ID: MVTEMS41
- EMS Release 4.2 Certificate ID: MVTEMS42
- EMS Release 4.3-A Certificate ID: MVTEMS43A

Language capability:

English, Spanish and an optional third language (including pictographic / character languages)

Components Included:

This section provides information describing the components and revision level of the primary components included in this Certification.

| System Component | Software or Firmware Revision | Hardware Revision | COTS Information | Dependency Notes |
|---|--|--|------------------|-----------------------|
| EMS Software MicroVote 4.4 | EMS Software V4.4 | N/A | -- | MicroVote EMS 4.2 |
| EMS Server Dell Desktop | | Dell Optiplex GX520, 3010, or 3020 | | MicroVote EMS 4.2 |
| Microsoft SQL Server Express 2017 | Express 17 | | -- | |
| Microsoft Windows 10 Professional | 10 Professional ver 1909 | | -- | |
| Laptop(s) Dell | | Dell Latitude E5440, E5570, E5580 | | |
| Infinity Model VP 1 Voting Panel | Firmware V4.3 (Rev D) V4.4 (Rev E) | Rev D or Rev E | -- | Rev D – 4.2 |
| VVPAT Printer | N/A | Rev A | | |
| Scanner Dual Sided Chatsworth ACP 2200 | N/A | Model 605000- 190 | -- | All Certified Systems |

| System Component | Software or Firmware Revision | Hardware Revision | COTS Information | Dependency Notes |
|-----------------------------|-------------------------------|--------------------------------------|--|-----------------------|
| Printer Seiko | N/A | COTS Model DPU-414 or DPU-3445 | -- | All Certified Systems |
| Doubletalk Model LT3 | BIOS0212 | V1.0 LT RC8650 | -- | All Certified Systems |
| Smartcard Reader | | HWP109380 B | PC/SC compatible USB contact reader/writer | MicroVote EMS 4.2 |
| Smart Cards | N/A | 16K or 115K | -- | |
| Voting Booth | N/A | Model 2000 | -- | All Certified Systems |
| MinuteMan UPS | N/A | EP1000LCD | UPS | |
| APC Back-UPS Pro | N/A | BN110M2 | UPS | |
| Hamilton Buhl Headphones | N/A | PRM100B | Headphones | |
| Head Stick | N/A | | Pointer for ADA voters. | |

System Limitations

This table depicts the limits the system has been tested and or calculated and certified to meet.

| Characteristic | Limiting Component | Evaluated | EMS | Infinity | ACP 2200 |
|---|---|-----------|-----------|-----------|-----------|
| Maximum Ballot Positions | Ballot Design Form | 150 | 600 | 600 | 402 |
| Maximum Precincts in Election | Precinct Number | 600 | 9,999 | 9,999 | 9,999 |
| Maximum Contests in Election | Contests in Ballot Style * Ballot Styles/Election | 100 | 300,000 | 2,999,700 | 2,009,799 |
| Maximum Candidates/Counters in Election | Precinct Counters * Total Precincts | 300 | 5,989,401 | 5,989,401 | 4,019,598 |
| Maximum Candidates/Counters in Precinct | Ballot Design Form | 300 | 599 | 599 | 402 |
| Maximum Candidates/Counters in Activation | Ballot Design Form | 300 | 599 | 599 | 402 |
| Maximum Ballot Styles in Election | Ballot Style Number | 300 | 1000 | 9999 | 1000 |

| Characteristic | Limiting Component | Evaluated | EMS | Infinity | ACP 2200 |
|--|---|-----------|------------|----------|------------|
| Maximum Contests in a Ballot Style | Ballot Design Form | 100 | 300 | 300 | 201 |
| Maximum Candidates in a Contest | Ballot Design Form | 10 | 599 | 599 | 401 |
| Maximum Count for any Precinct Element | Transact-SQL Bigint | 600 | See Note 1 | 65,000 | See Note 1 |
| Maximum Ballot Styles in a Precinct | Precinct Style Assignment Form | 1 | 1 | 1 | 1 |
| Maximum Activations per Ballot Style | Build Activations Form | 25 | 99 | 30 | 99 |
| Maximum Activations per Election | Act/Ballot Style * Ballot Style/Elec | 1500 | 99,000 | 299,970 | 299,970 |
| Maximum Number of Parties | Party Code Combinations | 10 | 50,653 | 598 | 400 |
| Maximum Vote For in Contest | Office Vote Limit | 60 | 99 | 64 | 99 |

Note 1: 9,223,372,036,854,770,000

Functionality

2005 VVSG Supported Functionality Declaration

| Feature / Characteristic | Yes / No | Comment |
|---|----------|---------|
| Closed Primary | | |
| Primary: Closed | Yes | |
| Open Primary | | |
| Primary: Open - Public Selection A primary election in which voters, regardless of political affiliation, may choose in which party's primary they will vote. Choice of party ballot at the polling place, after which the poll worker provides or activates the appropriate ballot. | Yes | |
| Primary: Open - Private Selection A primary election in which voters, regardless of political affiliation, may choose in which party's primary they will vote. The voters chooses the party ballot within the privacy of the voting booth. | No | |
| Partisan Offices | | |
| Handles vote for 1 races | Yes | |
| Handles N of M races | Yes | |
| Handles partisan contests in a primary election | Yes | |

| Feature / Characteristic | Yes / No | Comment |
|---|----------|--|
| Handles partisan contests in a general election | Yes | |
| Non-partisan Offices | | |
| Handles vote for 1 races | Yes | |
| Handles N of M races | Yes | |
| Handles non-partisan contests in a primary election | Yes | |
| Handles non-partisan contests in a general election | Yes | |
| Write-In Voting: | | |
| A separate voting position is identified for write-ins. | Yes | |
| Write-in for an N of M contest has M write-in positions. | Yes | |
| Write-in with no candidates (partisan & non-partisan contests) | Yes | |
| Method to flag write-ins for resolution at central count | Yes | |
| Primary Presidential Delegation Nominations | | |
| Slates of delegates are displayed for each presidential primary candidate | Yes | Use the Ballot text features to create a slate |
| Slates of delegates are chosen with one selection. | Yes | |
| Ballot Rotation: | | |
| Names of candidates rotate. | No | |
| Straight Party Voting: | | |
| Make one selection to vote for all candidates of one party in a general election | Yes | |
| Undervote the straight party selection and choose each candidate individually | Yes | |
| Vote straight party and then change votes to cross over to another party's candidate. | Yes | |
| Vote straight party for a party without a candidate in one of the races. | Yes | |
| Votes straight party in an: N of M contest (N>1) | Yes | |
| Cross-Party Endorsement: | | |
| One candidate is endorsed by multiple parties. | Yes | Set up the candidate for each party. Manually combine votes in the canvas. |
| Cross Party Endorsement is supported in straight party contests | Yes | |
| Split Precincts: | | |

| Feature / Characteristic | Yes / No | Comment |
|--|----------|--|
| Precincts splits with multiple ballot styles | Yes | |
| The number of voters is identified for the precinct split. | Yes | |
| The vote totals are not reported for the precinct split. | Yes | |
| Ballot faces match the correct contests and ballot identification for each split. | Yes | |
| The correct contests are presented for the appropriate ballot split. | Yes | |
| Vote N of M: | | |
| Counts each selected candidate, if less than or equal to "M" candidates are selected. (Overvote if >M) | Yes | |
| Identifies an undervote if less than "M" candidates are selected. | Yes | |
| Recall Issues, with options: | | |
| The recall vote is a Yes or No question. | No | |
| The recall is a vote for 1 of M vote with the Retain one choice and each replacement candidate a separate choice. | No | |
| Two contests are on the ballot. The voter must vote Yes to recall in order to vote in the second contest for the replacement candidate. A No, undervote or overvote will not allow a vote in the second contest to be counted. | No | |
| Two contests are on the ballot. If a voter votes Yes or No they may vote in the second contest for the replacement candidate. An undervote or overvote will not allow a vote in the second contest to be counted. | No | Functionality overturned - US District Court 7/29/03: CA Election Code sect. 11383 |
| Cumulative Voting | | |
| Voting method exclusive to multi-member boards. Each voter may cast as many votes as there are seats to be filled and may cast two or more of those votes for a single candidate. | No | |
| Ranked Order Voting | | |
| Voters rank candidates in a contest in order of choice (1,2,3,etc.) | No | |
| A write in vote can be ranked. | No | |
| Tabulation of Ranked Order Votes | | |
| Ballots are sorted according to the 1st ranked choice. If no candidate receives a majority of first ranked choice the candidate with the least 1st ranks is eliminated. Votes are recounted and are distributed to the remaining candidates according to the 2nd ranked choice. If still no candidate has a majority the candidate with the process repeats to next rank choice s until a candidate has obtained a majority. | No | |

| Feature / Characteristic | Yes / No | Comment |
|---|----------|---------|
| A ballot is no longer counted if all ranked choices have been eliminated | No | |
| Once candidates are eliminated no votes can be transferred to them. Ballots being recounted which identify an eliminated candidate go to the next ranked candidate. | No | |
| If a rank is skipped the vote for the next rank is counted. | No | |
| Provisional or Challenged Ballots | | |
| Provisional ballots maintain the secrecy of the ballot. | Yes | |
| A voted provisional ballot that is not included in the poll close report can be identified for determination. | Yes | |
| Valid provisional votes can be added in the central count report. | Yes | |
| A voted provisional ballots which is included in the poll close report can be identified and subtracted in the central count. | Yes | |
| Secondary Vote Limit | | |
| A voting variation outside the VVSG, which is supported by an additional vote limit that can be placed on grouped contests, so that multiple limits are placed on the vote. | Yes | |

Baseline Certification Engineering Change Orders (ECO)

This table depicts the ECOs certified with the voting system:

| Change ID | Date | Component | Description | Inclusion |
|-----------|----------|------------------------|--|-----------------------|
| ECO 125 | 04/29/20 | UPS for Infinity Panel | Replace APC BN1100M2 with BX1000M due to EOL | DeMinimis Optional |