



Preliminary Evaluation of NYS Lot 2 (BMD) Submissions to SBOE Machines delivered to SBOE as of 1/17/08

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Citizens Election Modernization Advisory Committee
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On Friday, January 18, 2008, members of the Citizens Election Modernization Advisory Committee (CEMAC) were invited to a demonstration of the devices submitted for the New York State Lot 2 Ballot Marking Device submissions. During the day I had an opportunity to see some of the operational capabilities of the six submitted systems.

New York State law stipulates that CEMAC :

"...shall have access to each machine or system submitted for examination and assist the State Board of Elections in the examination of the voting machines or systems pursuant to this section by recommending which machines or systems meet the requirements of section 7-202 of this title and the federal Help America Vote Act...

The state board of elections shall take such recommendation into consideration when determining whether a machine or system meets the requirements of section 7-202 of this title and the federal Help America Vote Act...."

In order to fulfill that role, I offer this brief evaluation of the submitted systems to the Board, along with my preliminary recommendations.

Because I spent only a short time with each machine, this evaluation must necessarily be very limited. I do not present it as in any way comprehensive or complete. It was all that could be accomplished given the brief time with each system – but it is a good start. Due to the short deadline imposed by the meeting of the Commissioners on January 23, 2008 where devices will be approved for purchase, I feel it is important to provide a preliminary opinion to the Board prior to this important decision.

Please note this is my own evaluation and recommendation and does not represent the opinion of any other CEMAC member or the committee as a whole.

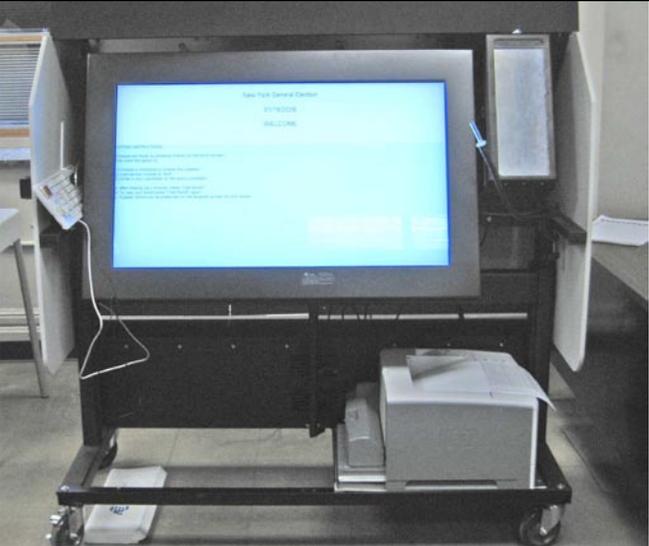
What Was Not Evaluated

Given the brief time with the devices, this review is restricted to a high level overview of the basic usability features of each device, focusing primarily on the following:

- Printed Ballot
- Screen Display
- Independent Verification of the Paper Ballot
- Noted Problem Areas

Having had no opportunity to observe any of the following, I specifically DO NOT evaluate:

- Election Management Systems
- Ballot Programming
- Machine Setup and Configuration
- Safety Seals and Security Measures
- Object code verification methods
- Alternate accessibility input devices (other than audio menu and keypad)

<p>Vendor Name: Avante</p> <p>System Name: Vote-Trakker (EVC308-FF-42-BMD), Full Face Presentation and Printout</p>	
<p>System Description:</p> <p>The Avante EVC308-FF is Avante's full face ballot DRE with modifications. By far the largest of the submitted devices, it takes up more floor space than a lever machine when deployed.</p> <p>This machine differs from the DRE version in that the DRE VVPAT is gone from the rectangular container on the upper right. The software is also said to be different, but this could not be verified.</p> <p>The device prints out a New York State full face ballot on an attached off the shelf Hewlett Packard 11x17 printer, seen at the lower right.</p>	

Paper Ballot or VVPAT

- Prints/Marks NYS Full Face Layout: **Yes**
- Marks a Preprinted Ballot: **No**
- Creates a Marked Full Face Ballot: **Yes**
- Prints a VVPAT style ballot: **No**

Screen Display

- Displays NYS Full Face Layout: **Yes**
- Can Adjust display font size: **Yes**
- Can Display White Text on Dark Background: **Yes**
- Can Adjust display contrast: **Yes**
- Has visual feedback while using audio vote: **Yes**
- Capable of displaying multiple ballot styles: **Yes**
- Capable of displaying multiple languages: **Yes**

Independent Verification of Ballot

- Voter can verify printed ballot: **No**

Problem Areas

- Extremely large size device, taking up more floor space than a lever machine.
- Although this device prints what appears to be a valid NYS full face ballot in a large format, the machine provides no independent means of verification of the ballot. This violates Section 7-202(1)(e) of NYS law which states voting system approved by the state board must:

“provide the voter an opportunity to privately and independently verify votes selected and the ability to privately and independently change such votes or correct any error before the ballot is cast and counted.”

Recommendation

The lack of an ability for a voter to independently verify the contents of the ballot violates Section 7-202(1)(e).

This Avante device should not be approved for purchase.

Vendor Name: Avante
System Name: Vote-Trakker (EVC308 SPR BMD), Full Face Printout

System Description:
The Avante EVC308 SPR is nearly identical to the ballot marker used by many counties for the 2006 interim solution. This version briefly displays a full face ballot on screen (see photo at right), then reverts to the paging style display found on the earlier Avante BMD.
The device prints out a New York State full face ballot on an attached off the shelf Hewlett Packard 11x17 printer.



Paper Ballot or VVPAT

- Prints/Marks NYS Full Face Layout: **Yes**
- Marks a Preprinted Ballot: **No**
- Creates a Marked Full Face Ballot: **Yes**
- Prints a VVPAT style ballot: **No**

Screen Display

- Displays NYS Full Face Layout: **Only for several seconds at vote start**
- Can Adjust display font size: **Yes**
- Can Display White Text on Dark Background: **Yes**
- Can Adjust display contrast: **Yes**
- Has visual feedback while using audio vote: **Yes**
- Capable of displaying multiple ballot styles: **Yes**
- Capable of displaying multiple languages: **Yes**

Independent Verification of Ballot

- Voter can verify printed ballot: **No**

Problem Areas

- Although this device prints what appears to be a valid NYS full face ballot in a large format, the machine provides no independent means of verification of this ballot. This violates Section 7-202(1)(e) which states voting system approved by the state board must:

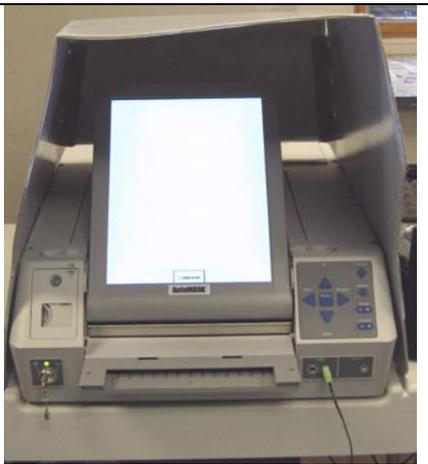
“provide the voter an opportunity to privately and independently verify votes selected and the ability to privately and independently change such votes or correct any error before the ballot is cast and counted.”

Recommendation

The lack of an ability for a voter to independently verify the contents of the ballot violates Section 7-202(1)(e).

This Avante device should not be approved for purchase.

<p>Vendor Name: ES&S</p> <p>System Name: Automark 1.2, Model A200, BMD</p>
<p>System Description:</p> <p>Different from other ballot marking systems, the Automark does not print a ballot but accepts preprinted ballots which are then marked by the device.</p> <p>The touch screen display is large and clear but does not at any point display a New York State full face ballot.</p> <p>Ballots are verified by reinserting them into the device, which reads back the contents via the audio.</p> <p>In terms of accessibility features and basic operation, the Automark system offered by ES&S is identical to the Premier submission.</p>



Paper Ballot or VVPAT

- Prints/Marks NYS Full Face Layout: **Yes**
- Marks a Preprinted Ballot: **Yes**
- Creates a Marked Full Face Ballot: **No**
- Prints a VVPAT style ballot: **No**

Screen Display

- Displays NYS Full Face Layout: **No**
- Can Adjust display font size: **Yes**
- Can Display White Text on Dark Background: **Yes**
- Can Adjust display contrast: **Yes**
- Has visual feedback while using audio vote: **Yes**
- Capable of displaying multiple ballot styles: **Yes**
- Capable of displaying multiple languages: **Yes**

Independent Verification of Ballot

- Voter can verify printed ballot: **Yes**

Problem Areas

- No notable problem areas

Recommendation

The fact that this device is designed primarily as an accessible ballot marking device makes it no surprise that it provides excellent capabilities for accessible voting. It is well regarded among many in New York States disability community.

It appears to fulfill the requirements of the Help America Vote Act and NYS Election law Section 7-202(1)(e).

This Automark device should be approved for purchase.

<p>Vendor Name: Premier</p> <p>System Name: Automark VAT, Model A300, BMD</p>
<p>System Description:</p> <p>Different from other ballot marking systems, the Automark does not print a ballot but accepts preprinted ballots which are then marked by the device.</p> <p>The touch screen display is large and clear but does not at any point display a New York State full face ballot.</p> <p>Ballots are verified by reinserting them into the device, which reads back the contents via the audio.</p> <p>In terms of accessibility features and basic operation, the Automark system offered by Premier is identical to the ES&S submission.</p>



Paper Ballot or VVPAT

- Prints/Marks NYS Full Face Layout: **Yes**
- Marks a Preprinted Ballot: **Yes**
- Creates a Marked Full Face Ballot: **No**
- Prints a VVPAT style ballot: **No**

Screen Display

- Displays NYS Full Face Layout: **No**
- Can Adjust display font size: **Yes**
- Can Display White Text on Dark Background: **Yes**
- Can Adjust display contrast: **Yes**
- Has visual feedback while using audio vote: **Yes**
- Capable of displaying multiple ballot styles: **Yes**
- Capable of displaying multiple languages: **Yes**

Independent Verification of Ballot

- Voter can verify printed ballot: **Yes**

Problem Areas

- No noted problem areas.

Recommendation

The fact that this device is designed primarily as an accessible ballot marking device makes it no surprise that it provides excellent capabilities for accessible voting. It is well regarded among many in New York States disability community.

It appears to fulfill the requirements of the Help America Vote Act and NYS Election law Section 7-202(1)(e).

This Automark device should be approved for purchase.

<p>Vendor Name: Sequoia/Dominion</p> <p>System Name: Democracy Suite, Model 2.0, BMD</p>
<p>System Description:</p> <p>This device combines a ballot marking device and an optical scanner into a single unit. When scanning is enabled, ballots can be scanned while voters simultaneously use the accessibility interface (except when the ballot verification feature is used, see below).</p> <p>The accessibility screen is not a touch screen. It swings to the back so that a privacy curtain can be placed between voters using accessibility features and those who are scanning ballots.</p> <p>The device prints a marked New York State full face ballot which can be scanned by the scanner component.</p> <p>Ballots are verified by reinserting them into the scanner, which reads back the contents via the audio.</p>



Paper Ballot or VVPAT

- Prints/Marks NYS Full Face Layout: **Yes**
- Marks a Preprinted Ballot: **No**
- Creates a Marked Full Face Ballot: **Yes**
- Prints a VVPAT style ballot: **No**

Screen Display

- Displays NYS Full Face Layout: **Yes**
- Can Adjust display font size: **Yes**
- Can Display White Text on Dark Background: **Yes**
- Can Adjust display contrast: **Yes**
- Has visual feedback while using audio vote: **Yes**
- Capable of displaying multiple ballot styles: **Yes**
- Capable of displaying multiple languages: **Yes**

Independent Verification of Ballot

- Voter can verify printed ballot: **Yes**

Problem Areas

- Scanner can be used independently while a voter is using the accessibility features but while a voter is verifying the printed ballot this is not the case. The ballot is inserted into the scanner and remains there while the contents are read back to the voter. During this period, which could take some time to complete on a large ballot, no scanning can be performed by other voters. This will cause polling places with only one machine to experience delays anytime a voter is verifying their ballot using the audio review feature.
- While the display provides necessary accessibility features as noted in the screen display section above, it is not a touch screen. Touch screen capability enhances the usability of the device for many voters with disabilities.
- Ballot Printing takes far too long – up to five minutes for a single ballot.
- Screen and scanner are mounted very high, possibly too high for voters using wheelchairs.

Recommendation

The Sequoia device appears to provide at least the basic features required of an accessible ballot marking device, including a means to independently verify the printed ballot.

It appears to fulfill the requirements of the Help America Vote Act and NYS Election law Section 7-202(1)(e).

The Sequoia/Dominion device should be approved for purchase.

Vendor Name: Liberty Vote

System Name: LibertyVote (BMD) with EMS LibertyControl, EPU 1

System Description:

This device is essentially the LibertyVote DRE with a modified VVPAT. This model DRE does not have a touch screen, but uses a printed overlay positioned over pressure switches.

Because the full face ballot display on the front of the machine is printed, it provides no ability to change font sizes or display contrasts and colors.

The ballot produced is a VVPAT from a paper roll in a list format.

An independent verification method is provided, but it is unusable by voters with disabilities.



Paper Ballot or VVPAT

- Prints/Marks NYS Full Face Layout: **No**
- Marks a Preprinted Ballot: **No**
- Creates a Marked Full Face Ballot: **No**
- Prints a VVPAT style ballot: **Yes**

Screen Display

- Displays NYS Full Face Layout: **Yes**
- Can Adjust display font size: **No**
- Can Display White Text on Dark Background: **No**
- Can Adjust display contrast: **No**
- Has visual feedback while using audio vote: **Very Poor**
- Capable of displaying multiple ballot styles: **No**
- Capable of displaying multiple languages: **No**

Independent Verification of Ballot

- Voter can verify printed ballot: **No**

Problem Areas

- Screen display does not provide adequate visual feedback.
- The printed overlay display screen eliminates any possibility of providing necessary features for voters with visual impairments as noted in the Screen Display section above.
- The provided verification scheme machine is unusable for most voters, whether or not they have disabilities. It is difficult to imagine how voters with visual disabilities and any sort of mobility impairment will be able to use the system's digital pen, which is meant to "read back" a voter's choices through the audio interface.

The Liberty device does not meet the requirements of both State and Federal law:

Section 301 of the Help America Vote Act (HAVA) provides that the accessible system must *“be accessible for individuals with disabilities, including nonvisual accessibility for the blind and visually impaired, in a manner that provides the same opportunity for access and participation (including privacy and independence) as for other voters.”*

New York State Election Law Section 7-202(1)(e) states voting system approved by the state board must *“provide the voter an opportunity to privately and independently verify votes selected and the ability to privately and independently change such votes or correct any error before the ballot is cast and counted.”*

Recommendation

This device is unsuitable for almost any voter with visual disabilities or mobility impairment. In light of the fact that this device provides no usable mechanism for independent verification, it is unsuitable for use as a ballot marking device.

The lack of an ability for a voter to independently verify the contents of the ballot violates New York State Election Law Section 7-202(1)(e) and HAVA Section 301.

The Liberty device should not be approved for purchase.