Johnnie McLean
Deputy Director, Administration
North Carolina State Board of Elections
PO Box 27255
Raleigh, North Carolina 27603

Dear Ms. McLean,

The following comments are submitted regarding your office's development of a Request for Proposal (RFP) for the certification of voting equipment that will be purchased by North Carolina's counties, in accordance with Federal Voting System Standards (VSS-2002), the Help America Vote Act (HAVA) and North Carolina General Statutes as applicable.

These comments are submitted jointly by North Carolina Verified Voting (NCVoter.net) and the VerifiedVoting Foundation (VerifiedVotingFoundation.org - a national, nonpartisan organization that champions reliable and publicly verifiable elections in the United States).

Introduction

North Carolina should write its voting system RFP in such a way as to allow for a range of equipment types, and most importantly to include optical scan and ballot-marking devices. Optical scan ballots provide an inherent manual audit capacity, and polling-placed-based optical scanners provide similar protections against over-votes and warnings about under-votes as are provided by DRE voting systems, and ballot-marking devices provide voting access for voters with disabilities. Thus, optical scan voting systems, when augmented by at least one ballot marking device per polling place are fully compliant with the requirements of HAVA.

System Considerations

Although the North Carolina HAVA State Plan[1] makes a claim that Direct Recording Electronic (DRE) devices are "preferred… by many voters," in fact voters prefer above all else systems that are reliable, transparent and publicly verifiable.

Recent advances in voting system technology have been most productive in development of auditable and accessible equipment, particularly in ballot-marking devices with assistive features for voters with disabilities and different language abilities. These devices allow for the use of reliable paper-based precinct-count optical scan balloting systems instead of more costly, less trustworthy DREs.

Advantages of these systems are many; the range of assistive features on available ballot-marking devices exceeds those offered by most DREs, including such key advantages as sip-puff options and foot-switches for those with limited mobility. Recent reports from actual disabled

[1] http://www.sboe.state.nc.us/hava/stateplan.htm

users indicate these are the "user-friendliest model" available,[2] and that they offer "better and more comprehensive accessibility features than the touchscreens offered" by some vendors' DREs.[3] More importantly, ballot-marking devices allow audio read-back of the voter's choices, making the voter-verified paper ballot itself accessible. To date, no DRE with VVPAT on a roll offers accessible voter-verified paper audit trails.

Further, on optical scan systems, the paper ballot itself is the audit trail which will be used in North Carolina's newly enacted requirement for a hand-to-eye tally to help ensure the accuracy of vote-counts. Paper ballots are significantly more manageable for such audits than such the thermal paper roll type of voter-verified paper audit trail.

Costs, Operational Issues

Perhaps most important to North Carolina's counties, voters and taxpayers: optical scan systems cost less to purchase[4] and deploy, and less to operate over time as documented in jurisdictions around the country, including North Carolina.[5] The increase in storage costs for the larger quantity of DRE machines versus the smaller number of scanners can be substantial. Most polling places need only one scanner and one ballot-marking device to meet the requirements of the Help America Vote Act's Section 301. When a county opts for DREs, it must deploy multiple DREs in each polling place (and still provide paper ballots as a back-up in case machines fail).

Since most counties with DREs must print paper ballots for absentee voting, and most would use paper ballots for provisional balloting, this "mixing of systems" adds to the complexity and thus the cost. As noted in other states that use optical scan systems statewide, the more balloting methods in operation in a county, the greater the administrative burden and cost to the counties.[6] Optical scan systems are easier to operate, so fewer poll-workers are needed and training is simpler. Training of precinct inspectors (a county responsibility) is greatly facilitated by deploying optical scan.

Accessibility

There are other systems besides ballot-marking devices that provide an accessible voter-verified paper record, though it should be noted that most DRE voting systems do not include that capability. Given the extreme importance of providing accessibility to voters with disabilities, as mandated by HAVA, state certification should take into account the ability of the system to provide audio read-back of the VVPR such that all voters can verify the same hard copy independent record of their vote. California, which represents the single largest market for voting

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[2] http://www.yesweekly.com/main.asp?SectionID=1&SubSectionID=1&ArticleID=603&TM=48903.21 Greensboro, NC, Sept. 27, 2005 and http://www.verifiedvotingfoundation.org/downloads/vendor_fair_summary.pdf

[3] http://www.eff.org/Activism/E-voting/nfb_volusia_amicus.pdf , Handicapped Adults of Volusia County (HAVOC), July 2005 and http://www.verifiedvotingfoundation.org/access Accessibility / Auditability Charts

[4] http://www.ncvoter.net/downloads/Aug25CountyPrecintsCostExcel.xls

[5] http://www.verifiedvotingfoundation.org/vvpbcosts

[6] http://www.michigan.gov/documents/Uniform_Voting_System_2_71047_7.pdf (page 5)

systems, has established accessibility standards[7] for VVPB systems. We encourage you to examine those standards for consideration while developing North Carolina's RFP.

Concerns

DREs have several disadvantages that must be considered. As mentioned above, counties deploying DREs have more complex systems due to different ballot types for different purposes (unlike optical scan). When DREs malfunction, voters either use paper emergency ballots or voting stops altogether (and if problems are not repaired rapidly, paper ballots can run out, resulting in disenfranchised voters). With optical scan, even if a scanner is temporarily out of service, voters can still mark their ballots.

Some (not all) DREs deploy a voter-verified paper audit trail on a continuous reel of thermal paper. Experts identify some of the disadvantages of reel-to-reel VVPAT systems as follows:

- greater burden on elections officials and voters due to increased difficulty of handling the type of paper used for reel-to-reel systems;
- potential for loss of vote secrecy due to the lack of random order of voter-verified paper records, which are printed consecutively and can thus preserve the order in which voters have voted;
- paper record produced is rarely verifiable by blind voters, so they cannot verify their vote on an independent paper record as other voters can.[8]

Finally, some DREs are deployed with wireless communication/networking capabilities. This makes the system unacceptably insecure and wireless capabilities should be prohibited in all of North Carolina's voting systems with no exceptions. Any advantages are offset entirely by the security risks.

Specific Recommendations

We encourage North Carolina to draft its RFP for new voting systems to require vendors to **explain how their system maximizes the probability that voters** (including voters with disabilities) **will actually verify their votes**.

The document should also require vendors to **explain how the order of votes in the paper audit trail will be randomized to protect voter privacy**.

Vendors should be asked to **explain their system's procedure for spoiling the ballot** in case the voter feels it does not match the way he or she voted.

Ask the vendors to **clarify how the verification step is accessible** to disabled voters.

[7] http://www.ss.ca.gov/elections/ks_dre_papers/avvpat_standards_1_21_05.pdf
[8] http://www.eac.gov/docs/EAC.June30-05.testimony.pdf

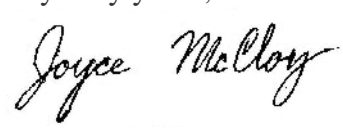
Ask vendors how they will provide **alternative equipment and supplies** in the event that their system becomes decertified for any reason.[9]

Ask vendors to explain how they will provide **updates and improvements** to their systems, and how those updates will be compliant with federal testing and certification requirements.

We urge you to develop North Carolina's RFP so that counties have a full range of HAVA-compliant options so that they can select those voting systems that are most viable and cost effective given their specific requirements. Finally, we urge you to certify machines that meet all standards of HAVA and SB223 as expediently as possible, so counties can purchase what they need at one time rather than piecemeal, and avoid the prospect of temporary solutions that meet only one set of requirements.

Please do not hesitate to contact us if you have any questions regarding the issues raised by these comments. Thank you for your careful consideration of our input and review of the linked and referenced documents.

Very truly yours,



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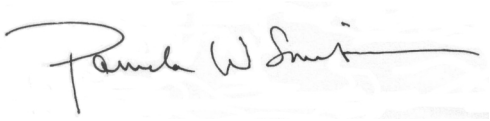

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[9] This was done in San Diego County, California, where the vendor's DRE system was decertified due to significant malfunctions and other reasons. The contract included a provision for the vendor to provide optical scan ballots and scanners for subsequent elections. Because of the foresight in making this requirement, the county incurred no additional cost, nor any complicated dispute resolution. The vendor simply provided the equipment and printed the ballots at its own expense.

APPENDIX A

Suggested language for inclusion[10]

ACCESSIBILITY

The proposed voting system must meet the requirements of HAVA, the Americans with Disabilities Act, federal and state laws and the State's standards on accessibility by allowing voters with disabilities full access to the voting device and the ballot and to vote unassisted. Can you meet this requirement? (yes/no)

Questions:

1. Describe how a voter with visual impairment is accommodated
   a. Does the system have a headset with volume control?
   b. How is the recording created (e.g., human voice)?
   c. Is there an audio jack so the voter if they wish could bring their headphones?
   d. Does your system support voter selected font adjustments for the visually impaired?
   e. If "yes," what is the maximum enlargement allowed (stated as either a font size or percentage of increase)?
   f. When enlarged, does a horizontal scrollbar appear on the bottom and at what dimension of increase does it appear?
2. Describe how a voter using a wheel chair would cast a vote. Include in your description the manner in which such a voter would access the voting device and other accessibility features such as height adjustment, screen tilt, keyboard tray tilt, foot-switch, etc.
3. How will a voter with limited dexterity vote? Does your system provide hardware interfaces and software to support the use of binary switches, including sip-and-puff, foot pedal switches, and jelly switches? Describe.
4. Have you received any awards or endorsements for the system you are proposing from groups that represent voters with specific needs?
5. Does the system allow for curbside voting?
   a. If "yes," describe the procedure for a poll worker to remove a voting unit for curbside voting.
   b. What is the maximum distance from the polling place that unit can operate?
6. To what extent does your system allow all voters an opportunity to cast a ballot without assistance from another person? Explain how you will meet this requirement.

BALLOT SECRECY and VOTER PRIVACY

The voting system provided by the contractor must protect the privacy and identity of every voter. Can you meet this requirement? (yes/no)

Questions:

1. Does each voting unit have an integrated voting booth?
   a. If "yes," does it provide sufficient privacy for the voter?
   b. If no, does your proposal include voting booths or other equipment for privacy?

[10] Some of the proposed language below derives from California's Santa Cruz County RFP, 2005.

The voting system provided by the contractor must store votes randomly so that no ballot can be connected with a voter. Can you meet this requirement? (yes/no)

1. Explain how you will meet this requirement.

OTHER – Logistics, Storage, Etc.

If proposing a DRE voting system, it must print using a non-fading ink. Can you meet this requirement? (yes/no)

Explain how you will meet this requirement**.**

Explain how your voting systems are stored and transported.

1. Does your proposal include carts for transporting voting units?
   a. If "yes" how many units can be transported on one cart?
   b. What is the total weight of carts with units?
   c. Is the cost of carts included in your proposal?
   d. How is cart stored?
3. Can the electronic ballot be loaded onto the voting units while in racking system or must they be removed and loaded in staging area?
   a. How many can be loaded at one time, if left in racking area.
4. What are the storage requirements or recommendations for the proposed system? Include electrical requirements, stacking recommendations, forklift requirements, charging batteries, sprinkler system, etc.
5. Does system overheat or has it ever experienced overheating?
6. Will this system need to be delivered to the polls by a professional hauling or drayage company or can the poll worker transport it?
7. Describe the requirements necessary for optimum operation and storage of the system (e.g., temperature, humidity, lighting)
8. Define the battery cost and lifecycle. How many batteries are needed per device? What is the battery's expected lifecycle/replacement cycle? What is the cost per battery?

Interoperability: Will you allow enabling your system to inter-operate with those of other vendors, e.g., will optical scan vendor X commit to their optical scanners being used in conjunction with ballot-marking devices made by vendor Y, including an agreement to provide technical descriptions of ballot formats and definitions in order to enable such inter-operability?

Non-Exclusivity

The State reserves the right to procure goods and services from other sources when it is in the best interest of the State to do so and without notice to the Vendor. The State via this solicitation makes no guarantee to the selected Vendor that the State will purchase any minimum or maximum amount of equipment and services. The resulting contracts will fix the unit prices for the term of the contract and any subsequent renewal period for any equipment or services ordered by the State. Actual quantities purchased may vary, as the state requires.[11]

[11] This paragraph is derived from similar language in the New Hampshire RFP for voting systems, 2005.