

**Testimony before the Committee on Oversight and Government Reform  
Information Policy, Census, and National Archives Subcommittee Hearing  
Ensuring Fairness and Accuracy in Elections Involving Electronic Voting Systems  
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*Presented by*

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Chairman Clay and members of the committee, thank you for the invitation to testify today. My name is Diane Golden and I currently work as the Director of Missouri Assistive Technology, the congressionally mandated statewide program in Missouri that provides assistive technology, including computer adaptations, for individuals with all types of disabilities. In addition to program administration duties, I serve on the Board of the Association of Assistive Technology Act Programs and provide technical support to the National Disability Rights Network on voting equipment access issues. I currently serve on the Telecommunications and Electronic and Information Technology Advisory Committee of the U.S. Access Board working on revising the standards for information technology accessibility as required by Section 508 of the Rehabilitation Act. I have also provided invited testimony to the Election Assistance Commission (EAC) and the Technical Guidelines Development Committee (TGDC) on accessible voting systems.

Congress has recognized the need for specialized expertise in assistive technology by funding State Assistive Technology Programs in the 56 states and territories. These programs are required to address the assistive technology needs of individuals with all types of disabilities. A multitude of other federally funded programs focus on unique aspects of assistive technology and specific populations of individuals with disabilities. Historically in the discussions surrounding voting security and how to ensure accessibility, assistive technology expertise has not been effectively utilized. Individuals with unbiased knowledge and expertise in assistive technology have not typically been involved in discussions regarding voting security even though many proposed solutions impacted accessibility.

As a preface to these comments, I want to emphasize that the disability community shares the interest of all Americans in ensuring that elections are fair, secure and accurate. From a personal perspective, I do not support or oppose a requirement for paper ballots if deemed necessary to ensure security nor do I want to outlaw or promote any particular voting system. My expertise and focus is on accessibility. To that end, I am here today to identify issues critical to ensuring fair, accurate and accessible voting and to highlight the challenges posed by voting equipment current available. In considering accessibility of voting systems, the following three points are critical:

- 1) The determination of whether or not a voting system, with or without a paper ballot, is "accessible" (and therefore meets any legal requirements to be "accessible") should be based on conformance to a set of appropriately developed, nationally accepted, technical access standards. Such determinations should not be based on individual anecdotal experiences.

2) If the decision is made to require a paper ballot, as a determinative vote of record to ensure security, that paper ballot must be accessible. Accessibility cannot and should not be knowingly compromised in response to unreasonable concerns regarding security.

3) A robust testing process should be in place to verify that a voting system conforms to accepted access standards. The entity performing such testing must have comprehensive knowledge and understanding of accessibility features along with expertise and experience in assistive technology.

### **Status of Accessibility Standards and Conformance**

The adoption of access standards as part of the Voluntary Voting System Guidelines (VVSG) required by HAVA has provided much needed direction regarding what is and is not considered to be “accessible.” These access standards provide technical specifications regarding the access features that must be provided by a voting system for it to be considered an accessible system pursuant to HAVA requirements.

For example, the VVSG indicates that an accessible voting system must provide –

- An audio-tactile interface so that a blind voter can listen to the ballot and navigate/mark the ballot through tactile controls;
- Enlarged and enhanced text for individuals who have vision loss but cannot use an audio ballot;
- Simultaneous audio and enhanced visual display for individuals who have vision loss and those with print disabilities such as dyslexia; and
- A “non-manual” input option (usually dual switch) that allows individuals with very limited motor skills navigate/mark the ballot.

In reviewing products over the past several years, it appears that most of the access features required by the VVSG (excluding those related to accessibility of paper ballots) are being delivered by one or more direct response electronic (DRE) systems or ballot marking devices (BMD) with an electronic interface currently on the market. Features not currently available on existing products could be readily added as part of a redesign of the electronic interface of a DRE or BMD system. These electronic interfaces (absent paper ballots) that conform to the VVSG access standards deliver a wide range of access features that allow individuals with a variety of disabilities to vote secretly and independently, like all other Americans. As a result, many Americans with disabilities have enjoyed a certain level of accessibility in voting for the first time in their lives.

### **The Paper Challenge**

If paper ballots are used to ensure security, those paper ballots must also be accessible to ensure the security of the entire election system and to uphold the rights of voters with disabilities to generate, verify and cast their vote privately and independently. Unfortunately, providing the same range of accessibility for a paper ballot, as is readily available with an electronic interface, is a bit more challenging, though not impossible. Two major shortcomings exist in current voting systems that use a paper ballot.

- 1) Direct electronic voting systems with voter verified paper audit trail (VVPAT) printers do not provide a mechanism for alternative access to the print on the

VVPAT. As a result, voters with vision disabilities cannot verify the paper ballot privately or independently.

2) Ballot marking devices require voters with disabilities to manually handle paper to verify and cast their ballot. As a result, voters with motor and other disabilities cannot verify or cast the paper ballot independently.

The VVSG requires that systems utilizing a voter verified paper ballot as a determinative vote of record ensure that the paper ballot itself (not the electronic ballot) is accessible to voters with vision disabilities. The VVSG also requires that voters with motor disabilities be able to submit/cast the paper ballot without assistance. This means –

- Voters with disabilities should not be required to handle a paper ballot at any point in the voting process;
- Blind voters should be able to generate their vote using an audio-tactile interface and then should be able to verify/edit and cast the content of the paper ballot using that same interface;
- Voters with low vision who used enhanced visual display on the screen of a voting system to generate their vote should have enhanced visual display available to verify/edit and cast the paper ballot; and
- Voters with motor limitations who used switch input (e.g. sip and puff) to generate their vote should be able to use that same switch input to verify/edit and cast the paper ballot.

### **Paper Ballot Accessibility Requirements**

Accepted public policy dictates that accessibility levels not be rolled back or decreased over time. The current level of access delivered by current VVSG requirements for paper ballots, must be preserved. Individuals with disabilities who have used paperless voting systems should not experience a decrease in their ability to privately and independently vote due to the addition of a paper ballot requirement. In addition, the same level of accessibility should be required for either a paper ballot or an electronic vote record.

The most likely option for addressing access barriers in a DRE with VVPAT will be the utilization of a scanner capable of automatically converting the human readable text of the VVPAT into electronic text. That electronic text can then be used to generate audio/speech output (through text-to-speech software or other mechanism used by the core DRE system) and enhanced visual display (on the visual display of the DRE.) The base DRE system will already have the capacity to deliver audio/speech output and enhanced visual display as it does for an electronic vote record. The same output mechanisms can be used, but will be based on the scanned content of the VVPAT, instead of the content of the electronic ballot.

Some voting systems are using or considering use of bar coded information printed on a paper ballot to support automatic vote counting. While scanning bar code information is an attractive option to deliver accessibility, it is important to remember that voters with disabilities must be able to verify that information that is or can be the determinative vote record. If bar code data is the only print information that can or will be counted, then using bar code data as the content to be verified by voters with disabilities is appropriate. If however, the human-readable print is or can be a determinative vote record, then that print will need to be scanned and converted into accessible form so voters with disabilities, just like all other voters, can verify the human readable information.

The most likely option for addressing access barriers in a BMD will be the addition of an automatic paper handling mechanism. If the paper ballot can be manually fed into the system prior to beginning the vote process, and from that point on all paper handling is done via automatic feeding mechanisms, the access barrier will be eliminated.

While this all sounds complex, the technology to make this happen is either currently available or can be developed if manufactures are given adequate time and unreasonable design requirements are not imposed. For example, in recent deliberations it appears the TGDC is considering separate output hardware be required to deliver the accessible media. In other words, once the print content of the VVPAT or electronically marked ballot is scanned, it must be delivered to the voter through a separate output device from the one used to deliver information during vote generation.

So for a DRE with VVPAT that means a voter using the audio tactile ballot would have to unplug their headset from a jack on the machine used to generate the vote record and plug it into a jack on a physically separate machine to verify the scanned information of the paper ballot. For a voter who used large visual display on a DRE to generate the vote record, they would have to use a separate visual display to verify the VVPAT paper ballot. For a ballot marking device the situation is even more convoluted in that the voter would have to manually carry their marked paper ballot to a separate machine to have the scanning done and delivered to separate output devices. If this requirement is put in place, the time necessary to develop and deploy accessible voting systems will be significantly increased and during the interim individuals with disabilities will not have access to accessible vote verification and vote casting.

## **Independent Testing Labs**

Testing entities entrusted with verifying voting system conformance to the access standards must have adequate knowledge and understanding of accessibility to do the job. While the EAC has taken dramatic steps to improve the independent testing process for voting equipment, it is unclear what expertise and experience the testing labs have to adequately ensure compliance with the accessibility standards. Based on past experience with these same entities, it did not appear as if sufficient expertise existed to appropriately judge conformance to access standards. Time and time again, it was discovered that systems certified as conforming to existing Federal Election Commission access standards, in fact did not conform.

## **Summary**

If Congress determines that in order to secure the voting process every voter must be able to verify and cast a paper ballot -- then *all* voters must be able to verify and cast paper ballots for our elections to be truly be secure. Moreover, verification measures must safeguard the rights voters with disabilities gained under HAVA and must allow all voters to verify their ballot privately and independently. A new access barrier should not be created by the addition of a verification requirement or a paper ballot mandate. Congress should not develop election access requirements to accommodate equipment vendors or the status of currently available voting products. Accessible verification technology will only develop if the law clearly requires it, and the technology will only be adequate if reasonable time and appropriate resources are allocated to support that development.