

**Subject:** RE: Comment on draft criteria for top-to-bottom review of voting systems

**Sent:** Wednesday, April 04, 2007 8:00 AM

**To:** Voting Systems

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Secretary Bowen:

I apologize for missing the public comment period on the draft guidelines for the top-to-bottom review of California voting systems. I hope my comments may be considered before the final version is issued on April 6.

I am concerned with **accessibility and usability** of voting systems. While I was delighted to see important requirements for accessibility and usability, I think the draft falls short in a few ways.

-- There appears to be no funding for conducting usability/accessibility tests of voting systems with voters and pollworkers.

-- The Usability section focuses on elections workers, and does not mention voters. Both must be served, since both interact with the voting machine, whether it is DRE or optical scan.

-- If focuses on the machine itself, without regard to whether ballots are well-designed and usable. (This is, after all how all of this started.) The machine and the ballot (along with supporting documentation) make up a voting system.

### **Funding**

It appears that there is funding for security testing, but not for usability/accessibility testing with pollworkers and voters. ("The Secretary of State will conduct a review...") This is a serious shortcoming. Although security clearly is an important concern, the real, documented problems in voting have come from usability issues: mainly that voters make mistakes in marking their ballots (the 2000 presidential election, the Florida CD 13 election in 2006). This problem can be minimized by usability testing ballots before they are used in elections.

Looked at another way, the design capabilities of voting systems don't produce ballots that are usable by voters. (This ripples into problems with counting, recording, and conducting recounts, as we have seen.)

### **Pollworker and documentation focus**

Providing documentation for pollworkers will not be enough to ensure the usability of voting systems. The documentation itself must be available, accessible, and usable. The usability of the documentation can only be measured by testing it with the intended users. That said, just having usable documentation is not enough. Research in technical communication shows that people don't read and use the documentation they get.

Pollworkers are a classic case. While the classroom training I have observed for pollworkers has been very good, the training materials are supplemental to the classes. They're carried out of the classroom and never looked at again. They usually don't get to the polling place.

Voting systems *can* be designed to help pollworkers set them up, open the polls, calibrate, deal

with temporary outages, generate totals, take them down, and close the polls -- without having to follow the manual or guess. California should insist on improved design in these areas rather than only demanding supporting documentation.

Efficiency and effectiveness can be measured for the interactions that pollworkers have with the voting machines in usability testing. They can also be measured for supporting documentation. But when machine and documentation are separate elements of the overall system, the overall system is less effective and efficient. We know this from 30 years of research on user assistance in the use of computers.

### **Usability of ballot design software and ballots themselves**

Finally, I strongly urge you to go further in demanding that:

--the software for designing and generating ballots be made easy enough to use that local elections officials can use it to design their own ballots and

-- ballots themselves be usability tested with voters to identify and remedy design problems that could lead to mistakes *before* elections. (The state of Washington is beginning to include training for elections officials on usability testing ballots and other election materials.)

Most counties rely on the manufacturer (or a subcontractor) to design and lay out ballots. This is expensive, inefficient, and another possible security hole. Making the software usable for ballot design and layout gives more control to local elections officials and should shorten the process.

The state of California could also certify basic ballot templates, vocabulary, and design elements (such as type face and size, color, line height and spacing, and so on) of ballots. The EAC has already sponsored projects in this area, conducted by Design for Democracy. Oregon has been working with Design for Democracy in many aspects of its elections to improve usability and accessibility throughout the election process.

As a California voter, usability and technical communication professional, and fellow Michigan State University graduate, I am proud that you have initiated this important review of voting systems. I hope to see more forward-thinking policy and practice from your elections division.

Sincerely,