Accessibility and Usability Standards for Next Generation Voting Systems: Transferring the Results of the AVTI Research

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Very Brief History of Voting System Standards for Usability and Accessibility

- VSS 1990, 2002 (FEC, NASED), 5 pages of usability and accessibility (U&A)
- Help America Vote Act of 2002
- IEEE P1583 U&A
- Voluntary Voting System Guidelines (VVSG)
  - ~25 pages, mostly best practices in UI design applied to voting systems
  - Led by the EAC Technical Guidelines Development Committee
  - VVSG 1.0 released in 2005, mandates vendor usability test reports (testing with voters)
  - VVSG 1.1, 2 rounds of public comment, waiting for release
  - VVSG 2.0 completed in 2007, not implemented
  - Voting System Test Labs (VSTLs): qualifications for U&A and consistent testing?
Current voting systems aging out. How do we move from kiosk to COTS mobile device U&A standards?

Mobile devices: I-pads and smart phones

Built-in accessibility; new assistive devices

Web applications

New best practices for accessibility and universal design

Opportunity to transfer AVTI research into next generation of voting systems!
We have:

- Voting accessibility survey data and pollworker education
- Accessibility needs and assistive technology
- Universal design for voter interfaces on mobile devices
- Plain language and interaction
- Better design for wider range of voters with disabilities
- New processes and workflow
  - selection of choices separated from submission and casting of votes
- Results from multiple pilot tests in the field and formal testing with voters

We need:

- U&A guidance, guidelines, standards, education
- Cost information, analysis of COTS issues
- Interaction with best practices in security
The Role of NIST

• Actively monitored the AVTI research and provided testing and VVSG expertise and our medium complexity test ballot as needed
• Roadmap for the creation of next generation guidance, standards, and education for U&A with input from researchers and stakeholders
• “Next Generation Voting Platform Testbed” for demonstrating, exploring, and testing new voting system prototypes to:
  • Identify best practices in design
  • Identify best practices in testing performance
  • Identify research gaps and answers to research questions needed to inform standards
  • Explore accessible solutions and security issues