

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

Sharon Laskowski

[sharon.laskowski@nist.gov](mailto:sharon.laskowski@nist.gov)

Visualization and Usability Group

Information Access Division

Information Technology Lab

# 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, certification to this standard, 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?

# Transformational Technology and IT Accessibility: Implications for Voting Systems

- 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!

# AVTI Research into Practice: Informing Next Generation Systems and Processes

- 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