

# The Usability of Electronic Poll Books

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# NIST

- What is NIST?
- Usability Group
  - User-centered measurement and evaluation R&D
    - methods, guidelines, and standards

# NIST Voting Program

- Voting system standards R&D
- Collaborate with EAC and support TGDC
- Standards Work
  - VVSG 1.1
  - VVSG test assertions

# NIST Voting Usability & Accessibility

- VVSG Section 3
- VVSG test assertions & test methods
- Next generation U&A roadmap
  - <http://civicdesign.org/projects/roadmap>
- Electronic pollbook usability

# Electronic Pollbooks @NIST

- Working with IEEE Voting System Standards Committee (VSSC/1622)
  - Electronic Pollbook Working Group
- Usability Project
  - Started Summer 2014
  - Collaboration with Center for Civic Design

# State of Electronic Pollbook Use

- Presidential Commission on Election Administration (PCEA) report
  - “E-pollbooks can make a singular contribution in resolving registration problems at check-in stations”
- Diverse innovations in SW & HW design
- Gaps in electronic pollbook usability literature
  - Decentralized standards and requirements
  - Minimal guidance on usable design

# Usability Project Goals

- Goal
  - To help ensure electronic pollbooks are designed with good usability and accessibility for poll workers, voters, and election officials
- Landscape analysis
- Fill gaps
- Focus on usability and interactions, not
  - Election administration
  - Voter registration practices and databases
  - Voter identification laws and statutes
  - Security of electronic pollbook technologies

# Usability Project Data Sources

- NCSL
  - Report on *E-Poll Books in the States*
  - Election codes prohibit, omit, allow, or require use
  - State approval, certification, single system
- Discussions with state and local election officials about electronic pollbook use
- Met with vendors for system demos
- Piloting reports



# Types of systems

- Hardware
  - Laptop
  - Tablet
  - Custom
- Software
  - Windows
  - iOS
  - Android
- Peripherals
  - Standalone system (e.g., built-in camera)
  - Add-on accessories (e.g., barcode reader)

# Methods of Use

- Primary functions
  - Check-in voter
  - Mark as “voted”
- Impact on election usability
  - Update voter & voter history records
  - Real time election monitoring from election office
    - Line management
  - Election day audits & reports
- Integration into workflow of election processes

# Testing the Usability of EPBs

- Poll worker (user) interaction
- Effectiveness
  - Common and infrequent scenarios
- Efficiency
- Satisfaction

# Testing the Usability of EPBs

- Common poll worker (user) task
- Voter check-in
  - Find voter
  - Confirm voter identity
  - Capture voter signature (or other authentication)
  - Issue ballot (or activation materials)
  - Mark voter as voted

# Testing the Usability of EPBs

- Infrequent poll worker (user) tasks
  - Handling newly registered voters
  - Checking voter addresses
    - Recently moved voters
    - Updating addresses
  - Handling voter in wrong polling place
  - Handling voters marked for mail-in ballots
  - Processing “Jr.” & “Sr.” voters

# Testing the Usability of EPBs

- Additional functionalities
  - Opening polls
  - Closing polls
  - Loading DB records on device
  - Using the “central command”
  - Line auditor
  - Built-in help manuals

# Electronic Pollbook Usability Project

- Outcomes
  - Report on landscape analysis
  - Visualization of electronic pollbook usage
  - Usability testing protocol (for EOs)
- June workshop with subject matter experts

# QUESTIONS?

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