VVSG Use Case Discussions

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Overview

- 7 use cases
  - Represent steps in the election process
  - Based on priority themes discussed at Feb 2016 TGDC meeting, subsequent feedback

Use Cases

1. Voter Registration (VR)
2. Electronic Pollbooks (EPB)
3. Ballot Delivery (BD)
4. Ballot on Demand (BoD)
5. Ballot Marking (BM)
6. Election Night Reporting (ENR)
7. Auditing (AUDIT)

Voter Registration (VR)

- **Purpose: Support reliable and accurate voter registration and identification**

- Scenarios:
  - Online voter registration
  - Paper registration forms
  - Management of voter records

Voter Registration (VR)

- **Coverage in VVSG 1.1**
  - None
- **Considerations**
  - CDF underway for VRDB and voter registration transactions
  - Need to protect confidentiality and integrity of voter records, and ensure availability of systems
    - Many VRDBs are networked
    - 31 States plus DC provide online voter registration
  - Usable, accessible interfaces for voters and election officials
    - Reduce online data entry errors for voters and election officials
- **Discussion**
  - Websites?
  - Interfacing with EPBs, election management systems (EMS)?

Electronic Pollbooks (EPB)

- **Purpose: Check-in and manage voters during election**

- Scenarios:
    - Check-in voter
    - Activate blank ballot
    - Voter management
    - Connectivity: standalone vs. networked

Electronic Pollbooks (EPB)

- Coverage in VVSG 1.1
  - Ballot activation
- Considerations
  - CDF underway for loading from VRDB and updating to VRDB
  - Usability and accessibility for poll workers and voters
    - Reduce poll worker errors in finding and selecting voter
    - Performed usability analysis to support development of guidance
  - Protect confidentiality/integrity of data stored on EPBs and sent/received from VRDBs
  - Ensure systems do not compromise voter privacy
- Discussion
  - Expand beyond ballot activation?
  - Interfacing with other systems?
    - e.g., upload/download VRDB, other EPBs, election management systems

Ballot Delivery (BD)

- **Purpose: Transfer ballot to voter and return voted ballot to EO**

- Cases:
  - Blank ballot delivery
  - Voted ballot return

- Scenarios:
  - Process type: absentee/remote vs. polling place
  - Ballot type: electronic vs. paper

- Tightly coupled with ballot on demand and ballot marking

Ballot Delivery (BD)

- Coverage in VVSG 1.1
  - Only where overlaps with ballot marking in the polling place
- Considerations
  - *Blank Ballot Delivery*
    - e.g., Vote-by-Mail, E-mail, Web Portals, Pre-Voting, Polling Places
    - Availability and accuracy of received blank ballots
    - Accessibility of paper ballots for voters
  - *Voted Ballot Return*
    - Polling place: addressed by other use cases
    - Accessibility of handling marked voted ballots
    - Significant security challenges associated with email/online return
    - Related issue of ballot duplication of received ballots
- Discussion
  - Absentee / remote ballot marking / pre-voting?

Ballot on Demand (BoD)

- **Purpose: Create blank ballots or voted ballots as needed**
- Cases:
  - Blank ballot generation
  - Voted ballot generation
- Scenarios:
  - Process type: absentee/remote vs. polling place/vote center
  - Ballot type: electronic vs. paper
- Tightly coupled with ballot delivery and ballot marking
  - Does not include ballot transfer

Ballot on Demand (BoD)

- Coverage in VVSG 1.1
  - Only where overlaps with ballot marking in the polling place
- Considerations
  - Voters receive correct ballot style
  - Generated ballots will be read correctly by scanners
  - Usability of poll worker interaction between EPB and BoD (e.g., remembering sequence of numbers)
  - Accessibility of paper ballots for voters
- Discussion
  - Limited to polling place / vote centers?

Ballot Marking (BM)

- **Purpose: Make vote selections during voting process**
- Scenarios:
  - Polling place ballot marking
  - Remote ballot marking
    - Absentee
    - Pre-voting
- Tightly coupled with ballot delivery and ballot on demand

Ballot Marking (BM)

- Coverage in VVSG 1.1
  - Only in polling place
- Considerations
  - High-level guidance developed for remote ballot marking
  - Includes marking by-hand, EBMs, pre-voting, online marking
  - Ensure accuracy and privacy of marking
  - Use of personal devices and personal assistive technology (PAT)
  - Use of OCR and/or QR codes
  - Tension between voter-verifiable paper & accessibility
- Discussion
  - Absentee / remote ballot marking / pre-voting?
  - PAT use in polling place?
  - Is online ballot marking in scope?

Election-Night Reporting (ENR)

- **Purpose: Report and display election results**
- Scenarios:
  - Display and receive election results via website
  - Distribute and receive results via downloadable file

Election-Night Reporting (ENR)

- Coverage in VVSG 1.1
  - Only as a part of voting system built-in external reporting
- Considerations
  - NIST 1500-100 "Election Results CDF Specification" in use by OH, NC, considered in other states
  - Protecting/authenticating electronic transmission from reporting sites
  - Integrity/availability of public-facing web sites providing election results
  - Accessible reporting format for web and downloadable files for the general public
- Discussion
  - websites?

Post-Election Auditing (AUDIT)

- **Purpose: Verify election outcomes and processes**
- Scenarios:
  - Full manual recount
  - Risk-limiting
    - e.g., single ballot, small-batch
  - Other types

Post-Election Auditing (AUDIT)

- Coverage in VVSG 1.1
  - Electronic reports and VVPAT* intended to support post-election audits
- Considerations
  - CDF for cast vote records underway for tabulation & audit
  - Ensure systems produce records that support audits
    - Must identify audit techniques and processes that should be supported by systems
  - Easily accessed by voters and observers (recounts)
    - e.g., multimodal display, QR codes with text
  - Accessibility for election officials (e.g., text size)
- Discussion
  - What types of audits should be supported?
  - Should guidance on how to conduct audits be developed?

*Voter-Verifiable Paper Audit Trail