

Testing Ballot on Demand

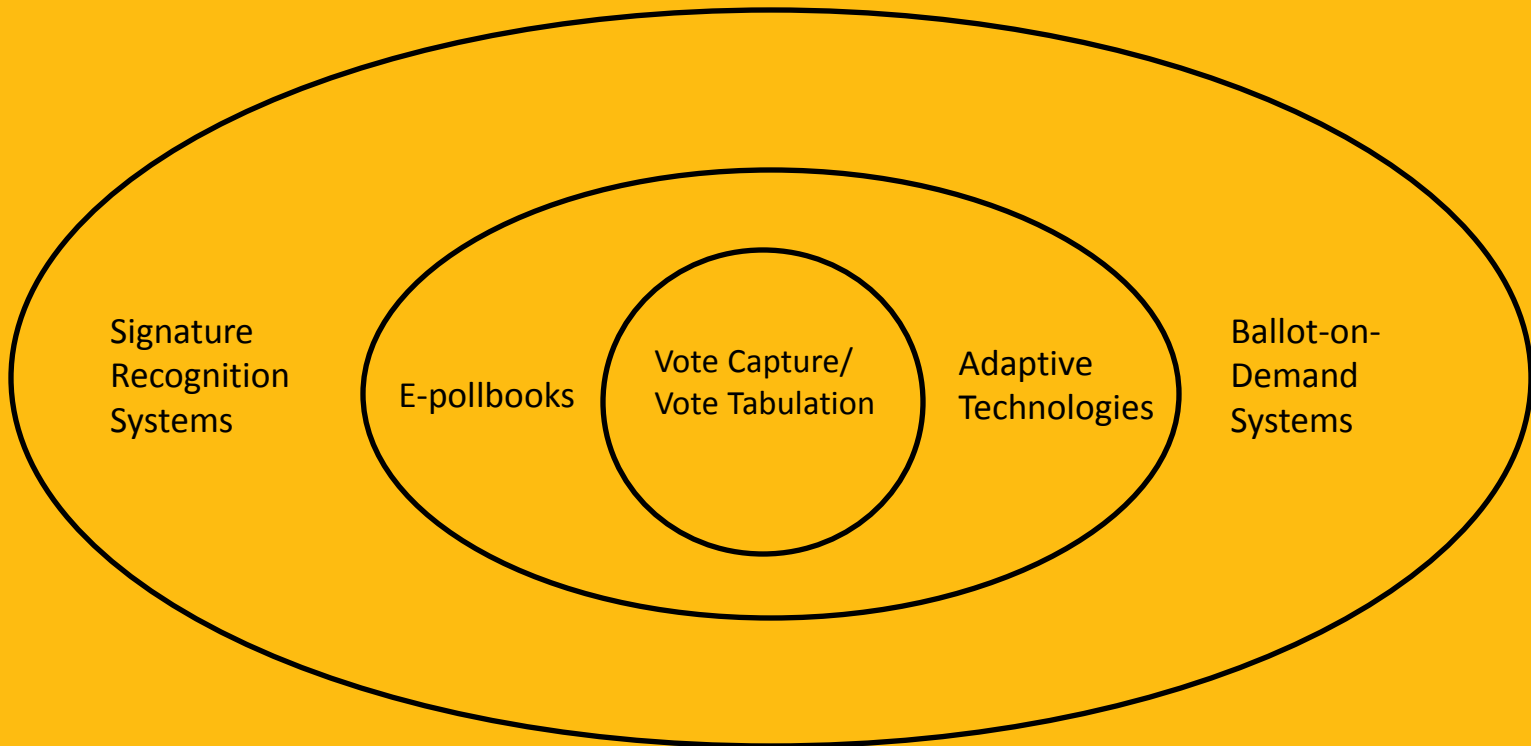
Merle S. King

State Certification of Voting Systems Conference

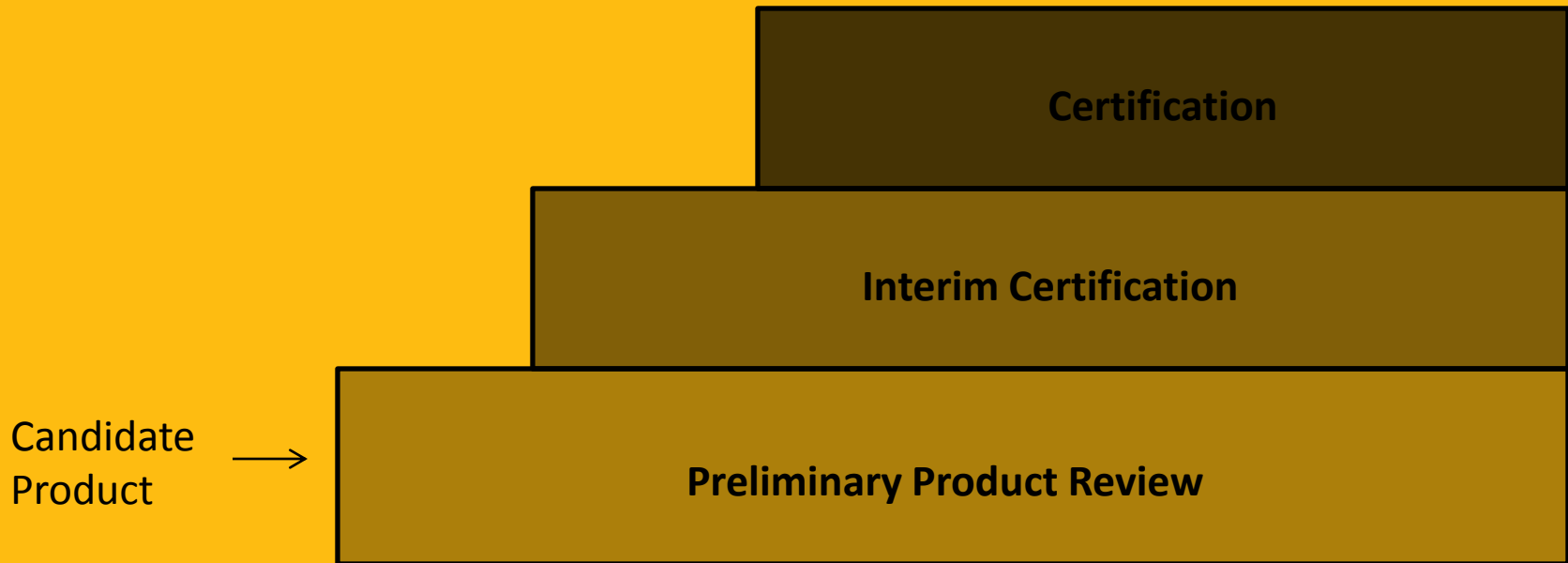
September 23, 2011

Kennesaw, Georgia

Voting System Scope

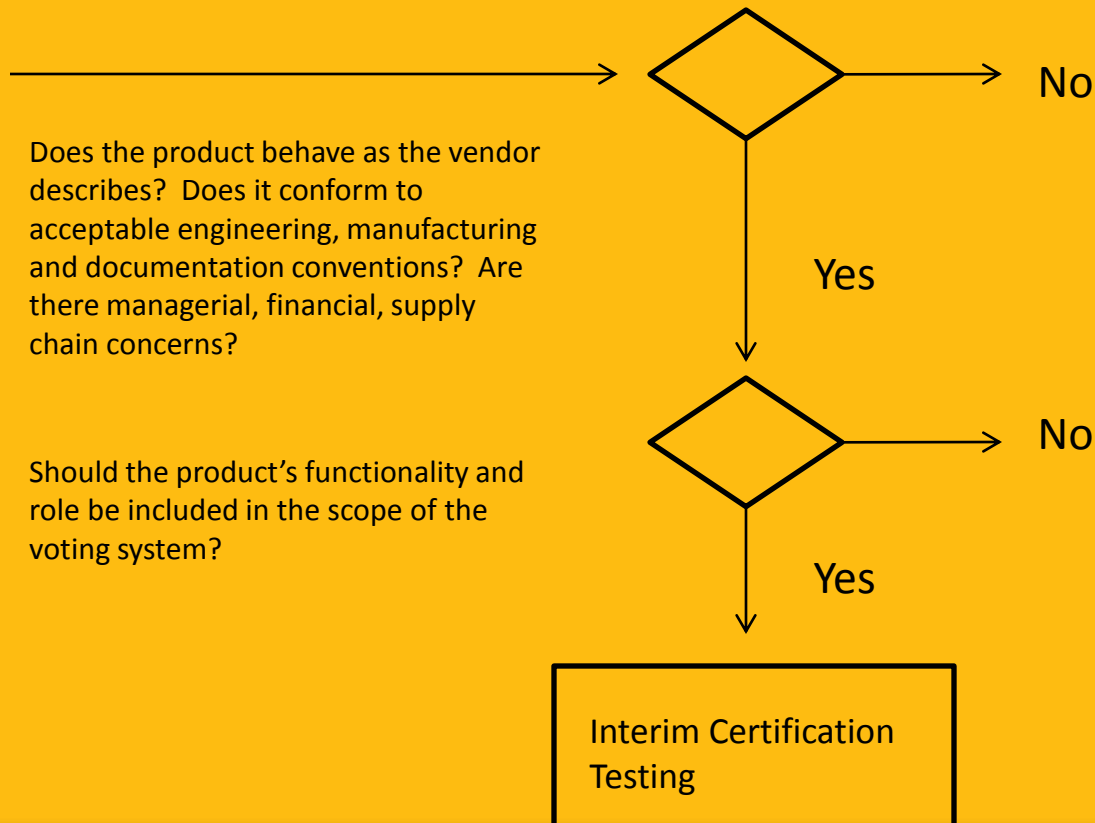


Multi-Tiered Approach



Product Review

Product



Product Review

- Determine if the product's functionality and role are in full conformance with federal and state statutes, rules, and regulations
- Determine if the product integrates /interfaces with existing systems and components of Georgia's uniform voting system
- Document the business model and evaluate the operational capability of the vendor to support a statewide deployment
- Document IP issues regarding licensing and escrow
- Evaluate repair, support and service capabilities of the vendor
- Assess functionality including error and exception handling and error recovery
- Review testing and QA documentation and procedures
- Assess the quality and usability of system, user and maintenance documentation
- Evaluate system models including dependency on third parties
- Evaluate sample contracts and pricing models
- Review customer lists and reported defects and deficiencies
- Evaluate stability and rate of revision of system hardware and software
- Evaluate dependency on key personnel
- Prototypes are not eligible for product review

Interim Certification

- Permits a voting system or component to be used in one or more elections as part of its evaluation .
- In addition to criteria in the Product Review, source code review, repair and maintenance, installation procedures, and testing of full functionality with the voting system
- Development of L&A procedures

Certification

- Product/component has been successfully used in one or more elections
- Federally certified
- Expanded scope of testing, including emphasis on exception handling, error recovery
- Resolve any anomalies discovered in the pilot test

Ballot On Demand

- Can be envisioned as a component of an Electronic Ballot Marking (EBM) system
- Electronic Ballot Printer (EBP)

Ballot On Demand

- Ballot-on-demand (BOD) system provides on-site, real-time printing of scannable ballots, from files generated by an EMS, for use in an election.
- BOD systems may...
 - be portable
 - networkable
 - interface voter registration data
 - interface other devices and systems related to ballot processing
 - be COTS configured

Ballot On Demand

- Applications
 - Absentee Ballot fulfillment
 - Vote Center
 - Precinct
 - Provisional
 - UOCAVA applications
 - Testing
 - L&A of scanners
- Should testing reflect intended application? Or all possible applications?

Ballot On Demand

- Vendors want the marketing advantages of having their products certified. But...
 - do not want the down-side consequence of failing certification testing or having a product decertified
 - are not organizationally prepared to supply documentation required
 - receive conflicting messages from jurisdictions and from state offices
 - have imperfect understanding of jurisdiction requirements and constraints

Ballot On Demand

- What is being tested?
 - The ability of the BOD system to produce a scannable ballot or the scanner's ability to read a BOD-generated ballot?
 - Should the security of the system exceed the jurisdiction's security practices?

Ballot On Demand

- Company information
 - Background of principals
 - Customer list
 - Evaluation of fee structure and pricing model
 - Organizational capabilities
- Verification of COTS components
 - Printer
 - Consumables
 - Laptop/Computer
 - Operating System
 - Database query language system

Ballot On Demand

- Documentation
 - System
 - Complete, well-formed, accurate
 - Operations manual
 - Administrator documentation
 - User documentation
 - Error messages and recovery
 - Maintenance
 - Readability, accuracy, assumptions

Ballot On Demand

- Non- COTS components
 - Software
 - Feeder mechanism
- Functionality
 - Capacity (1800 ballots in 8-hour period over several days)
 - 350 18" ballots/hour
 - Stubbing
 - Scored ballot stock
 - 11", 14" 18" ballots + 1" stub
 - 1-4 column ballots
 - 1 page, 2 page, 4 page
 - Color
 - Interleaved vs. batched
 - 9 different elections from past 2 years

Ballot On Demand

- Operational issues
 - Dependencies and need for redundancies
 - Logic and Accuracy script
 - Blank Ballot Scanning before delivery to voter
 - Security procedures surrounding system
 - Vendor access to voting device during election
 - Acceptance testing
 - Frequency of modifications and updates of COTS and non-COTS components
 - Interface with the voter and with the voting system
 - Scalability of vendor to support adoptions
 - Changes in PDFs produced by EMS

Ballot On Demand

Questions and Suggestions

mking@kennesaw.edu