

TGDC Meeting State Requirements

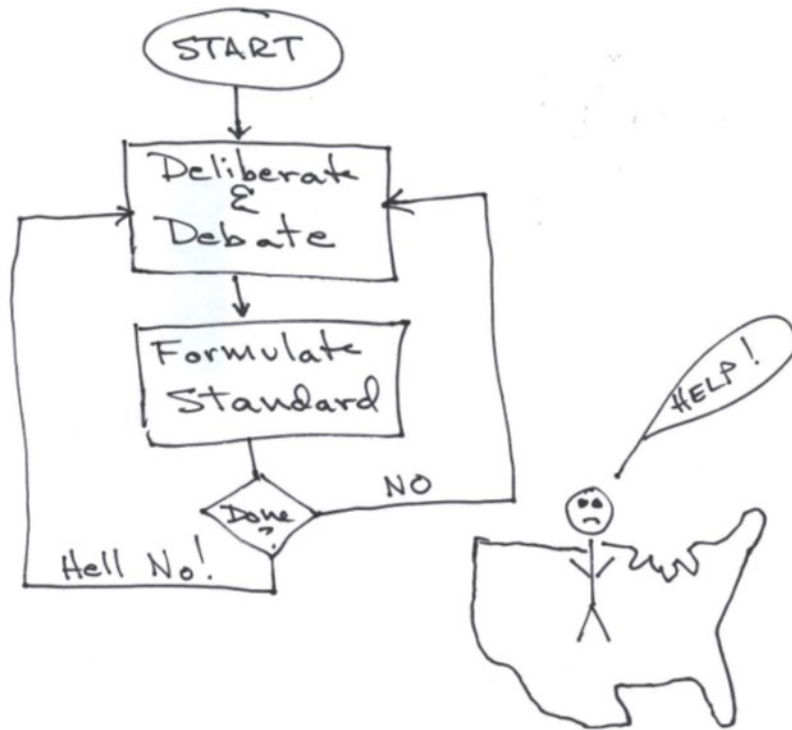
**Washington, DC
February 8-9, 2016**

Cautionary Tale



Standards

Standards Development





Does it work?





Devil in the Details

- What does “it” mean?
- What does “work” mean?



Purpose of Standards and Testing

Standards and Testing have multiple purposes:

1. Statute/Rule checklist item
2. Indemnification
3. Assurance of functionality/quality
4. Illumination of behaviors, attributes, and interoperability of the system. Informs correct use and best-practice implementation

Ultimately the purpose is to reduce uncertainty and mitigate risk of adoption and use. This means context is important.





Why do we test?

- Required
- Reduce uncertainty/mitigate risks
- Understand the system
- Understand inter-system dependencies
- Develop L&A scripts
- Develop training materials
- Assess vendor capabilities/commitment
- Pre-test proposed statute/rule change
- Validate a mitigation strategy



How Do We Test

- Use cases – sample elections
- Edge cases - anomalies
- Prior test cases
- Documentation review
- Source code review
- Test lab reports
- Pilot projects
- Penetration testing
- User acceptance testing
- Comparables – who else has tested it and what did they find?
- Vendor tests and attestations





Back to...it

- Voting systems – as defined by the state
 - May echo the HAVA definition
 - May exceed it
- ePollbooks
- Ballot-on-Demand systems
- Election Night Reporting systems
- Ballot delivery/return systems
- Signature verification systems
- Absentee Ballot systems





It (cont.)

- Interfaces
- Data structures
- Changes to any system (ECO)
- COTS, modification and implementation
- Proposed consumables
- Repairs
- Media
- Configurations
- Anomalies

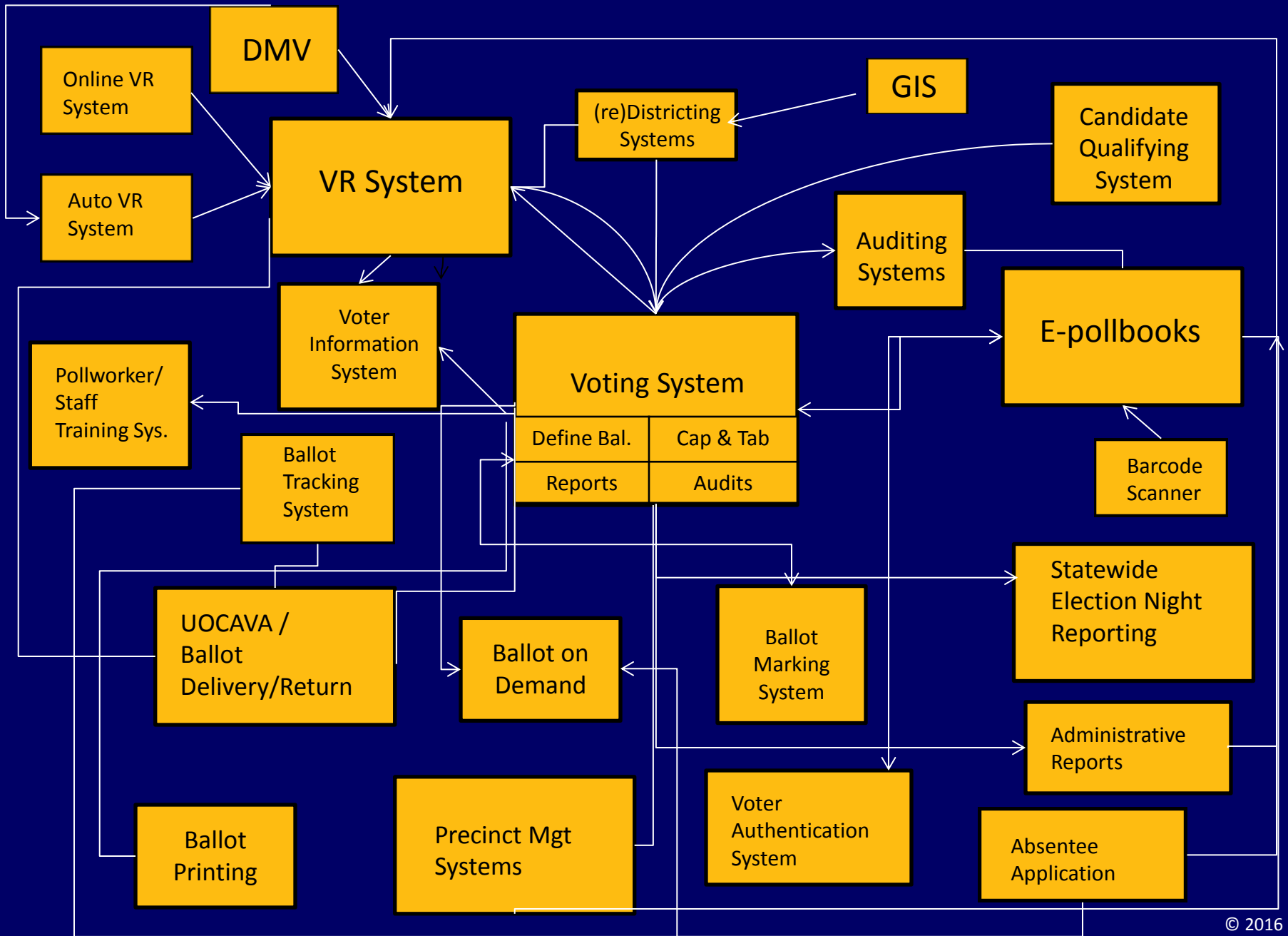




It (cont.)

- Vendor capabilities
- Service levels
- And anything else that the legislature, SOS, Election Commission, or courts require

Interaction of Voting and Election Systems





Works?

- What is the purpose of the test?
 - Will it lead to a certification decision?
- Is there a vendor?
 - Many testing scenarios presume the existence and advocacy of a vendor...what if there is no vendor – no sponsor for the system or component?
- Are there claims or representations about what the system does?
 - Will it do what the vendor claims it does, in the way represented?



Works?

- Is it testable?
 - Can the requirement be articulated in such a way that it can be measured and evaluated?
 - Are qualitative and subjective requirements appropriate?
- Sources of requirements: Statutes
 - Current and future requirements
 - Can the statute be translated into requirements?
 - Is there consensus on the interpretation of the statute?
 - Does the statute need changes to be implementable?
 - What is the intent of the statute?
 - Does the statute create conflicts with other statutes/rules?





Works? (cont.)

- Sources of requirements: Rules
 - Has the rule been vetted?
 - Does in conflict with other statutes/rules?
 - What is the intent of the rule?
- Sources of requirements: IT Best Practices
 - Physically securable
 - Adequate documentation
 - Components harmonized
 - Error handling/graceful failures
 - Interoperability



Works? (cont.)

- Jurisdictional operations provide context
 - Can it perform within jurisdictional constraints?
 - Ex: it may be able to print a returned UOCAVA ballot, but can it print them at a rate that is operationally acceptable?
- Does it touch the voter?
 - Does it impact the voter?
- Can a failure be mitigated?





Works? (cont.)

- Sources of requirements: Vendor recommendations
- Sources of requirements: Past anomalies
- Attributes of requirements at the state level:
 - Requirements change at a faster pace
 - Scope of requirements change at a faster pace
 - May have political origins
 - Legacy implications
 - Heuristic



Future VVSG Development Goals

6. The VVSG should accommodate the interoperability of election systems.
10. The VVSG should be performance based and technology neutral.



“The two most important things the federal process can assist with regarding the items we test, is by creating standards that: a) require the interoperability of all election technologies, and b) are flexible enough to be utilized across multiple technologies.” — *Ryan Macias (CA)*





Threads

- Accessibility
- Usability
- Security
- Auditability
- Robustness
- Accuracy
- Functionality
- Some threads may be pervasive; others more restricted in scope



Thread example: Usability

Usability – The ease of use and the learnability of a system.

The usability thread has multiple strands: voters, poll workers, poll managers, voting system managers, maintenance personnel, programmers, etc.

The voter usability thread goes through parts of the voting system, online voter registration, absentee ballot application system, and other systems that the voter interacts with and controls some aspect of that interaction





Thread example: Usability

Threads could provide a rationale for spanning systems and limiting the scope of testing and certification.

Threads lets us partition the model to facilitate abstraction.

If the voter usability thread does not extend into the ballot-on-demand system, there is a rationale for excluding it from the scope of testing for that thread.





State Conference

6th Annual Conference

State Voting System Testing and Certification

June 20-21, 2016

Cambridge, MA

Sponsored by New England colleagues





Discussion

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