

Reforming the Testing and Certification of Voting and Election Systems: Initial Goals

April 20, 2014

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“...the current standards and certification process must be reformed to allow for innovation in voting technologies, faster and less-costly certification of new products, and the certification of component (customizable and interchangeable) products and voting systems...”

- *The American Voting Experience: Report and Recommendations of the Presidential Commission on Election Administration, 2014, page 65.*

The testing and certification of voting systems has been perceived as a bottleneck to the development of new voting and election technologies as well as an impediment to the cost effective maintenance of deployed systems. The existing model for testing and certification was defined by the *Help America Vote Act* (2002) and phased into use beginning in December of 2006. Existing and emerging challenges to the design, verification, deployment and maintenance of voting systems and election systems, the lack of a quorum of EAC commissioners, and an aging inventory of fielded voting systems, have contributed to a growing concern that the current model of voting system testing and certification is not sustainable.

There is general agreement in the election community that the standards development process needs to become more nimble and inclusive of the manufacturing community. The process and resulting work products should flow from State requirements upward and not be developed in theoretical isolation and promulgated downward. The standards should be as performance-based as possible, limiting design-specific standards to allow innovation in the marketplace.

The certification process needs to continue to evolve to better serve State and local election officials. This evolution needs to be both deliberate and pragmatic. Broader and more flexible certification processes should not "give away" the gains made in manufacturer/system quality and accountability under the EAC program. States and local election officials must be more engaged in the process by better defining their expectations, needs and constraints.

This paper seeks to identify, in broad terms, the general, desired attributes of a voting/election system testing program. The opinions expressed in this paper are those of its authors and do not represent the opinion or policy of any organization or government agency. The goal of this paper is to generate discussion - not to prescribe proposed policy. As such this paper should be considered a work in progress as state and local officials and other stakeholders are presented with its concepts and can provide feedback to the authors.

Recommend Reforms for Testing and Certification of Voting and Elections Systems

1. **The Testing and Certification process is not a monolithic, indivisible collection of rules and procedures. It can be teased apart and reformed incrementally.**

Reform efforts must address the *definition of jurisdiction functional requirements, standards development, system and component testing, and the certification process* as discrete but intersecting domains. Each of the four primary domains must be evaluated, optimized and reassembled into an integrated whole. The separate evaluation of each domain permits creative solutions to be conceptualized and evaluated without constraining the eventual solution.

Examples:

- a. Each jurisdiction must be able to articulate the impact of statutory and rule requirements on their system requirements. In addition, the jurisdictions must identify operational goals, existing system dependencies, maintenance goals, system capabilities and other requirements that must be known before a voting/election system can be configured to fulfill these requirements. The intersection of the various jurisdictions' requirements will present opportunities for better standards development, more efficient testing regimes, and greater sharing of resources among states. Any improvement in the testing and certification program must address the sustainable capacity of the states to define their requirements for voting and election systems. Put simply, states must be able to clearly summarize and share their laws, regulations, rules, and ongoing needs regarding voting systems in order to inform a better certification process.
- b. The standards development process must expand to include appropriate standards from a wider variety of sources. The current practice of using the VVSG as both testing standards and design specifications is not sustainable. Standards must be selected, tailored or created to match the jurisdictions functional system requirements – not determine them. Utilizing standards that are being developed by the states or by other testing entities or standards-forming bodies will provide more relevant standards and should shorten testing programs by eliminating redundant or irrelevant testing.
- c. The current model of testing systems by NIST- and EAC-accredited VSTLs must be expanded, augmented, and assisted by other providers of tests and test results. These include the various states programs (VSTOP, Florida, California, etc.) that manage state-level testing of systems, as well as private sector testing firms who are testing voting and election systems for states.
- d. Because the help America Vote Act (Section 231) states that “the Commission shall **provide for** (emphasis added) the testing, certification, decertification, and recertification of voting system hardware and software by accredited laboratories,” one option may allow the final certification decision to be delegated by the EAC to states or other appropriate entities. This moves the certification question(s) and subsequent control to a more appropriate level of authority and accountability. Most if not all states are already responsible for the approval of

systems to be used in their elections. The EAC's testing should help inform and supplement this already ongoing activity and not be separate from, or counter to those efforts.

2. **Integrate HAVA mandated requirements including the EAC and NIST roles, but find ways to optimize those roles to improve usefulness of testing deliverables.**

The reformation of the testing and certification process may eventually require legislative modification to HAVA, but that process is both uncertain and time consuming. Effort should be made to find flexibility within the existing system of testing and certification and to apply the assets and expertise of the EAC and NIST to support these efforts. Examples include an aggressive adoption of the extensions clause for testing innovations beyond the scope of the VVSG and the use of declarations of conformance by vendors to accelerate testing, especially of COTS components.

3. **Take into account appropriate stakeholder interests.**

Any change to the system must create an interface for all appropriate stakeholder participation. Although every citizen has a vested interest in the integrity and outcome of the process, there cannot be a seat for everyone at the table. Participants to the process should be qualified by a process that assesses both interest and capability to participate and contribute. Streamlining the number of stakeholder participants will enhance the speed and efficiency of any new or re-engineered processes. Restricting the number of participants should in no way diminish the transparency of process or product. HAVA mandated entities such as the Standards Board and Advisory Boards should be utilized in a focused and efficient manner making their usage both operationally and cost effective.

4. **Increased flexibility.**

The scope, methods of testing, deliverables, and outcomes (certification/de-certification/no certification question) must be scalable and flexible. Dimensions of this flexibility include, but are not limited to: responsiveness of the process to jurisdiction's need for expedited testing and reports, expandability to include election systems (ex: pollbooks, ballot on demand, voter registration systems, etc.), utilization of standards other than those called out in the VVSG, and utilization of testing capabilities other than the VSTLs.

5. **The speed of the reformed process matches expectations of election officials.**

Election Officials work at "election speed" and require complimentary processes such as ballot building, ballot printing, and system testing to match that speed. The reality is that for states and localities the certification and deployment window is extremely narrow. The reformed process should be calibrated to accommodate the quicker turnarounds required to provide new systems and re-tested systems and components within the

constraints of the election calendar to the greatest extent possible. States must also assist themselves in these efforts by implementing language in statute, rule and procedures, permitting “emergency” or “provisional” certifications when election deadlines and testing efforts cannot be synchronized.

6. The reformed process should be intelligible to all stakeholders, especially election officials.

The processes and work products in the testing system must be understood by all stakeholders on an ongoing basis. A system that is transparent, but unintelligible to the most important stakeholder, the election official, is problematic. All system processes, work products and deliverables should be described and modeled in ways that are understandable.

7. The testing and certification system must possess an accompanying education and training campaign.

There must be an outreach effort to educate stakeholders on a continuing basis. In order for the process to reach maximum efficacy stakeholders must be constantly educated and trained on the process and its implications for them. Given the turnover among state and local election officials, there needs to be persistent educational efforts to make information, especially descriptions of process, available to election officials on demand.

8. The system should be “election administration” driven.

The system must be driven by the needs and constraints of election administration. The development of standards and subsequent testing regimes must focus on realistic goals and those goals must be related to competent election administration. The testing and certification system cannot be sidetracked by stakeholders with marginal agendas.

9. The roles and responsibilities must be defined and sustained.

The roles and responsibilities of all stakeholders to the process should be defined and assessed for optimizing the process. A critical requirement is the need for roles to be sustainable at the jurisdiction levels. The system cannot be dependent upon the continued engagement of a single key individual or organization or the episodic participation of jurisdictions.

10. The role of well-designed Requests for Proposals (RFPs) and effective contract management must be integrated into the process.

Well-structured and detailed RFPs will accurately capture the jurisdiction’s functional requirements and become a supporting document in the subsequent integration of

standards and testing protocols. Aggressive contract management will ensure that the jurisdiction obtains and maintains the specified systems.

Conclusion

This paper presents a high-level analysis and suggested goals for a reformed voting and election system testing and certification program. Its brevity and generality is intentional. Its goal is to foster further discussion and to provide a framework for that discussion.