ELECTION TECHNOLOGY COUNCIL

Working Together for Secure and Accurate Elections

Written Remarks Submitted by David Beirne, Executive Director, to the United States Election Assistance Commission Interdisciplinary Roundtable Discussion on the Proposed Voluntary Voting System Guidelines
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On behalf of the Election Technology Council and its members, I would like to thank the Election Assistance Commission for inviting us to be a part of this important discussion. I would also like to point out the importance of this interdisciplinary panel as it is indicative of the varying stakeholders that need to be brought together in one forum. This roundtable reflects a definitive move in the right direction for the Election Assistance Commission and we applaud the EAC Commissioners and staff for putting this unique roundtable together.

Before embarking upon each of the discussion questions, I would like to first clarify a recurrent misconception. It is often portrayed that the next iteration of VVSG refers to the next generation of voting systems. This is simply not accurate. Due to the voluntary nature and the force of law granted to VVSG compliance by the states, this next draft of the VVSG may very well be the standard-bearer when it comes to voting system requirements. With the inclusion of clear performance benchmarks and security requirements it is likely that more states will incur pressure to require certification to the newest draft when it is finally adopted. In light of this likely scenario, I think it is important to determine the potential market effects of the new VVSG and how best to make sure that the certification process and system requirements are not so prescriptive and costly that the country is forced to take steps backward in regards to innovation.

1. *What specifically can be done with the proposed VVSG standards and with the certification testing procedures and infrastructure, to reduce the cost of the voting systems, without compromising core functions of the voting system?*

First and foremost, the success of the EAC's efforts in both certification and the adoption of the VVSG are contingent upon the support of the states that currently require adherence to the federal standards. The ETC strongly supports the EAC's efforts, but they must incorporate models of efficiency and attempt, wherever possible, to set a clear set of fixed costs and clear instructions for voting system compliance. The current certification process is not currently adequate for the needs of the industry or its customers. We are witnessing a current certification process that has yet, after a year and a half of effort, to yield a certified voting system and a process that continues to have its costs undefined. As of right now, voting system providers are experiencing a 300-400% increase in certification cost without a certified product delivered. These cost increases will likely be passed onto the customers in some form. The benefit of a clearly defined certification process is that it permits proper planning on the part of both voting system providers and the state and local governments who intend to use the products. Fixed costs do not refer to the establishment of a fixed rate, but rather the need for the *Voting System Test Laboratory* to propose a fixed rate for the entire certification effort which will permit a voting

system provider to plan accordingly for the cost and establish a fee schedule that works best for them and the end user. To put it simply, no one will agree to the construction of a home without a clear understanding of the entire cost.

The ETC recognizes that the EAC does not possess the authority to establish certification rates or to establish a fee schedule for Voting System Test Laboratories (VSTL). One avenue that could be approached is the use of a bid submittal process by the VSTL as part of the accreditation process to assist in establishing a fixed cost for certification. It is our understanding that the EAC is working on test scripts with the intent of standardizing the methodologies for voting system certification. Once these scripts are established and all of the current products before the VSTLs are either certified, decertified or withdrawn, only then should the EAC properly investigate where greater efficiencies can be found. This would be the optimum time to conduct forums involving industry providers and VSTL representatives to discuss appropriate changes to the certification program. The subject of cost efficiencies, as posed in this question, implies that a cost/benefit analysis may be accomplished within the VVSG or its pursuits; however, this does not appear to be the case as the current draft of the VVSG speaks to design standards, not performance standards.

2. *What specifically can be done with the proposed VVSG standards and certification testing procedures and infrastructure to reduce time-in-process of a candidate system?*

While we realize the current certification process is new, it is important for election officials to understand the current timelines for certification and how the timeliness of certification is likely to affect the future ability for voting system providers to deploy future product enhancements. In addition, if the certification costs continue to rise or remain as an unknown total cost, it is likely that voting system providers will limit the frequency of product upgrades submitted for certification in an effort to maximize product investment.

Rising certification costs and timeliness of certification are real problems confronting the industry, its customers, and the voters they serve today, not tomorrow. It is impossible at this time to determine what specific steps can be done to speed up the process as we are in the midst of the effort. We must endeavor to balance the practical needs of the voting public with any reluctance, or perceived reluctance, to certify a product.

3. *What specifically can be done to increase the efficiency and economy of efforts within the testing process at the federal, state, and local levels?*

From a market perspective, a strong certification process along with an effective set of VVSG, if properly implemented, will build efficiencies into the marketplace. If the vast majority of the states remain committed to the voluntary framework for VVSG compliance, voting system providers recognize that submitting a product for federal certification will provide the opportunity to market their products in most states; thereby, creating an efficiency. This efficiency is contingent upon a strong certification

process which embraces the importance of voting system providers, recognizes the underlying economic principles and efficiently certifies products. In addition, if the EAC certification is truly effective it will successfully eliminate the need for states to conduct their own certification process and reduce any redundancies. This will not only reduce costs, but it will also speed up the deployment phase for new products.

4. *How important is the timing of the passage and implementation of the next iteration of the VVSG?*
    a. *In an ideal world when would you choose to have the next iteration of the VVSG become effective?*

From an industry perspective, the adoption schedule proposed by the EAC for the next iteration of the VVSG appears adequate for its own purposes. However, it is also likely, given the robust nature of the requirements for voting systems, that research and development is not likely to occur in advance of the VVSG's adoption. While some voting system providers may attempt to plan future developments to merge with the requirements currently being discussed within the new VVSG, doing so reflects the natural risk associated with anticipating future directions for voting systems. Another issue related to the timing and implementation of the next VVSG is the fact that its mere presence and development is likely to stifle future growth opportunities for the market until such time that the new VVSG is adopted. States may determine it to be more advantageous to wait for products certified to the newest VVSG.

Given the mandated requirements within the VVSG, it is likely that the EAC will have to operate both the 2005 VVSG and this newer version concurrently. If not, the EAC will run into conflict with its restriction upon rule making on state and local governments as stipulated within the Help America Vote Act (HAVA). Provided the 2005 VVSG and the newest draft operate in tandem, the Council sees no problem with the current proposed timeline for its adoption; however, it should be noted that adoption is not an indicator of product development or certification. Ultimately, the new iteration of the VVSG can be adopted at any time provided the VSTLs are prepared to begin testing to this standard which is the key issue to a successful implementation.

5. *How necessary is innovation in voting technology?*
    a. *How can the EAC's program and the VVSG address the desired level of innovation?*
    b. *What are the possible sources of capitol to reach the desired level of innovation i.e. from the vendor? From Congress? From private enterprise? From academia?*

The best forms of innovation are those that originate out of the natural forces of the market rather than through legislation. This is primarily due to the need for the avoidance of unintended consequences and to allow the market to dictate winners and losers while permitting consumers to benefit from clear differences in the products offered. In this market example, the consumer is best equipped to determine the product that best meets their needs.

The best method to open up the opportunity for innovation is to provide the most flexible pursuits for voting technologies. The requirement for software independence is one of the most restrictive requirements as it eliminates the opportunity for a completely software driven platform that is developed using the latest series of security requirements and coding conventions. The very notion of software independence, to my knowledge, is not present within any other industry. While the act of voting is unique, should we embark upon technical requirements that are not present in any other industry? Should we embark upon technical requirements that lack a consensus definition? What is the likelihood that substantial product investment will be used to develop a product under the innovation class?

In order to provide the greatest flexibility and to permit the market to choose, the VVSG should continue to embrace the notion of software dependence and independence. Separate requirements should be written for each. This is especially true since the current voting system certification framework is voluntary. Great care should be exercised to make sure that the interests of states are maintained and to permit states to operate successfully without the use of a "voter verifiable paper audit trail" if they choose to do so.

Although innovation is discussed as a pursuit of the new VVSG, it is difficult to determine what level of consensus has developed regarding voting systems. Security is obviously the key component to this perceived consensus, but no threat model has been developed for the proper security performance of voting systems. The absence of a discussion on procedural controls typically associated with both paper based and electronic voting systems begs the question, "What is the security level we wish to achieve?" We applaud the EAC's efforts to develop a clear threat model, but stress that this effort needs to be completed prior to the final public comment period for the new VVSG as it directly relates to the security performance requirements of voting systems. In the absence of a clear threat model, it is difficult to determine the level of consensus or how this translates into performance standards. The very notion of OEVT appears to contradict these efforts to develop a consensus for voting systems as it indicates a subjective threshold that operates independently from performance and design requirements discussed in the VVSG. The current draft of the VVSG allows an OEVT team to change the threat model, from the one under which the system is designed. This course of action will cause any system to fail certification.

The United States has witnessed successful cooperative ventures between academia and industry leaders in order to spur greater innovation. These efforts have been codified under federal law most recently with the National Technology Transfer and Advancement Act (1996) and the Federal Technology Transfer Act of 1986 (Bayh-Dole Act). These two pieces of legislation embraced the notion that research conducted by federal laboratories, federal agencies, or academic institutions can be brought to the marketplace quickly. These efforts for research and development depend upon funding for the research and a cooperative venture with private companies who will use the resulting innovations through licensing arrangements. Of course, this cooperative effort spurs research, but it does not speak to the need for capital. As recognized within these two acts, the private sector retains

its role for taking the resulting invention and incorporating it into future designs while incurring the normal risks associated with the performance of industry.

So when it comes to the actual development of a marketable product and raising the necessary capital, these are financial risks typically left to the private sector. In today's market environment with voting systems, it is difficult to raise capital since there are so many outstanding questions regarding the future of voting technology and the potential for innovation and growth. It is possible that the final adoption of the VVSG combined with a clearly developed threat model and continued successful performance of the current voting systems will lead to market stability and an infusion of new capital, but this is only speculative. In the short term, the available sources of capital are difficult to find and that will limit the potential for immediate research and development opportunities.

6. *Every voting systems stakeholder shares risks with other stakeholders and experience risks unique to their constituents.*
    a. *What risks do you view as being shared?*
    b. *What risks do you view as being unique to your sector?*
    c. *Has there been an adequate assessment of those risks?*
    d. *In the absence of an adequate assessment of those risks, how can those risks be prioritized and mitigated?*

Unfortunately, the voting industry has been one of the stakeholders not recognized for its role in the successful conduct of elections. From a risk standpoint, the industry is constantly confronted with market externalities such as increasing certification costs, the lack of an operating marketplace and cyclical revenue streams. To date, no adequate assessment has been made on the current industry trends or the clear risks that must be incurred by those providers who intend to remain in the marketplace. The economics of the industry must be taken into consideration since the decisions made by the EAC today significantly impact its health.

The EAC should reach out to other agencies such as the Federal Communications Commission (FCC) and the Federal Aviation Administration (FAA) to learn more about the need to recognize market trends and realities. After all, we have already seen companies regulated out of the marketplace due to rising certification costs. While companies go out of business all of the time, the danger is when this condition is born from an external pressure on the market (i.e., increased certification costs). These external pressures are referred to as market externalities and if they are not properly considered for their negative impacts, they may very well lead to market failures. A market failure occurs when a product ceases to be profitable for the private sector; thereby, creating the potential for consideration of a government provided enterprise.

The EAC, prior to adopting the next iteration of the VVSG, should meet with other agencies who regulate industries and educate themselves on the need to accomplish their given task of developing clear standards for voting systems while recognizing the voluntary nature of state compliance and the need to avoid market failures. Of course, the Election Technology Council would be happy to assist in any way

we can and we do not presume to have the answers, but feel that this is an avenue that has not been explored.

The private sector has a long history of supporting election administrators in the United States within a finite marketplace. The constant struggle for any industry is to maintain a viable revenue stream to support its current payroll requirements and have reasonable profits which can be reinvested for product research and development. With four leading providers and hundreds of employees, the performance track record of the leading voting system manufacturers should be recognized for their successes and overall commitment to the successful conduct of elections in the United States.

7. *How do you prioritize the features (i.e. security, accessibility, usability, reliability) of a voting system?*
    a. *What are the best ways to strike a balance between these sometimes competing features?*

The previous development of voting systems has focused primarily on accessibility, usability, reliability and accuracy. This was done in recognition of the traditional election administration practices which are used to protect the integrity of an election and the demands at that time of the marketplace. It is apparent that security is also a critical component and must also be incorporated, through greater depth in the design; however, but often usability, security, and costs find themselves as competing forces. The most secure platforms are less likely to be the most usable for both the user and the voter and more likely to be costly to produce and procure. Election officials often enjoy as much flexibility as possible when administering their voting systems at the local level, but proposed requirements within the VVSG attempt to limit much of this flexibility. As recommended within the VVSG, the use of strict security procedural controls such as user password requirements reflecting each assigned operator's role will impact an election administrator's ability to creatively respond to problems as they arise. This example is used only to illustrate the competing nature between usability and security.

Given the nature of paper based voting methods and their history in the United States, security was only as good as the procedures established around a voting system's operation. The evolution of the DRE systems focused on the principles of accessibility for minority language and disability access while also providing greater reliability and accuracy through the elimination of overvoting and the electronic uploading of election results to eliminate transposition errors common with manual entries and tallies. Multiple studies have been conducted which have shown that the usability of DRE systems should not be dismissed for the sake of placing security as the primary concern. The one competing feature among these four requirements is security. As we consider this feature, we must consider our objective which leads to a series of questions. Are we striving toward a higher confidence level with security or an absolute model? If we focus too much on security, are we sacrificing usability and generating more costly systems?

Summary

It is incumbent upon the EAC to exert policy leadership when it comes to establishing effective controls on the development of the VVSG and the administration of the certification process. Doing so will enable the EAC to serve the industry it regulates, the state and local election officials who must use the equipment, and the voters who rely upon the equipment to exercise their right to vote. Unfortunately, many of the policy decisions are difficult ones and as Abraham Lincoln said, "You cannot please all of the people all of the time." So the final policy questions that must be asked when considering the adoption of the VVSG include:

1. What impact will these requirements have on the current marketplace?
2. Is there a danger of market failure if the current certification process continues to exhibit delays and ever-increasing costs? This question has also been posed as "Should perfect be the death of good?"
3. Is software independence too restrictive for the future of voting system technology?
4. Is the country best served by having an effective federal certification model with more or fewer participants (i.e., states)?
5. Are the needs of the states currently being met with the current certification efforts?

The answers to these policy questions are entrusted to the EAC as part of its responsibility for overseeing the federal certification process. The Council remains committed as a partner during the EAC's deliberations and looks forward to future opportunities to share our viewpoints.