



Reinventing the U.S. Election Assistance Commission

The EAC is at a Crossroads Requiring
Significant Organizational & Programmatic Change

Prepared For:

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1. Situation Analysis

In a recent blog series on our corporate web site (“Challenging Times at America’s Election Assistance Commission”) ¹ we explored how the U.S. Election Assistance Commission (“EAC” or “Agency”) appears to be in danger of compromising its standing with its NIST technical advisors and elections officials, by over-promising and under-delivering. The Agency needs to address necessary programmatic changes to combat the glacial pace of standards updates and the high costs of voting system testing and certification. However, there appears to be more slow-walking change and raising bureaucratic barriers to progress than actual delivery on promises.

To be clear: the OSET Institute recognizes and earnestly supports a strong, effective, U.S. Election Assistance Commission. That is precisely what motivates us to write this paper, in a spirit of constructive commentary.

Three years ago in 2016 the EAC began the process of updating the federal *Voluntary Voting System Guidelines* (VVSG 2.0). There was much fanfare and promising talk of “*doing things differently.*” It was optimistic and had the feel of the “innovative digital age” attitude so much of the previous Administration had advanced. Sadly, recent developments have revealed cynicism and frustration resulting from the Agency’s talk of change falling on deaf ears of institutional inertia.

Having witnessed the Agency in operation since its inception, the Institute now believes the EAC is at a critical point in its history. The Technical Guidelines Development Committee (TGDC), and the Standards Board are both working diligently to complete VVSG 2.0 (which is probably *at least* a year away and will have *zero impact* on the 2020 election). Meanwhile, the Agency is experiencing operational and managerial dysfunction.

¹ See: <http://bit.ly/OSET1219eac>

At this juncture, strong though this assertion may be: it is essential for the EAC to pause, develop a clear understanding of its own organizational behavior, and then conduct an intellectually honest assessment, including examining many unintended consequences of how the Agency’s testing and certification program is currently functioning (or not).

Indeed, we believe this self-reckoning is a *far more* important issue than substantive questions concerning, for example, specific functional requirements for auditability, barcodes, or wireless technologies. If the organizational dynamics of the EAC continue to prevent functional requirements from being incorporated into voting technology that reaches the market in timely fashion, then updated requirements will not matter. In short, the inner-workings of the Agency and its certification program must stop inhibiting necessary change. The status quo is *not* acceptable.

Currently, the single greatest obstacle to the Agency’s evolution and improvement is a lack of institutional self-awareness and understanding. Mounting security threats to our nation’s election infrastructure exacerbate this organizational dysfunction.

In order for any organization to evolve and adapt to new dynamics in its operating environment, it must have the capacity for self-reflection, self-assessment, and self-critique. Without these qualities, an organization will remain trapped in its current institutional dynamics, especially if its performance is already sub-optimal.

Currently, how the EAC understands the implementation of its charge *is* an obstacle to self-understanding, and it *is* needlessly resulting in obstacles to change. The Help America Vote Act of 2002 (HAVA) of course, created the EAC. And all too often the EAC’s Commissioners and General Counsel appear to be narrowly, reflexively framing their activities based only on the letter of HAVA regulations, instead of thinking more deeply about the outcomes that result from *how they choose to implement HAVA*. For example, let’s consider three examples of how the EAC’s “literalist” approach has led to unintended consequences:

1. The EAC adopted the same definition of “voting system” as HAVA for purposes of system testing. However, HAVA legislative language does not lend itself to a well-defined, testable scope of regulated components. This overly broad definition results in more testing, as “the voting system” essentially becomes a container into which *everything* is added.
2. The EAC has interpreted and implemented HAVA’s requirement for “voluntary voting system guidelines” in the form of hundreds of functional requirements for voting systems, many of which are overly-prescriptive and not technology-agnostic.² From this myopic viewpoint, so long as the EAC continues to set “standards” it is *perceived* to be doing its

² This is despite EAC claims to the contrary. To cite one example, see Requirement 1.1.7-D in the TGDC’s “Draft Recommendations for Requirements for the Voluntary Voting System Guidelines 2.0, Sep 9, 2019” (<http://bit.ly/vvsg2-0919>, p. 46). On the topic of “ballot separation when batch feeding,” the requirement identifies only three acceptable methods to handle ballots that require additional attention: 1) physical out-stacking; 2) stopping the scanner and displaying a message; or 3) physically marking the ballot. It’s noteworthy that the Requirement does *not* include, for example, newer digital imaging solutions that could “virtually” out-stack ballots for review later. This is a case of needlessly writing a requirement to specify the “how” when it should specify “what” the problem is to be solved. Instead of limiting the requirement to describe solutions that have already been invented, a more technology-agnostic approach could be, “*In response to unreadable ballots, write-ins, and other designated conditions, batch-fed scanners shall provide features that support a user’s ability to identify and locate ballots that require additional review from the human operator.*”

job—regardless of how much time that consumes. This is compounded by a failure to recognize that issuance of hundreds of prescriptive requirements actually *stifles* innovation by needlessly “freezing” voting technology designs in place. Add in the fast pace of technology innovation, and this results in designs that are obsolete as soon as they are complete.

3. The EAC tests and certifies *only* complete voting “systems” in their entirety as a literal interpretation of HAVA references to testing and certification of voting “systems.” That leads to higher costs and long, cumbersome timelines.

With these considerations as background, bear in mind that HAVA regulations actually provide wide latitude to the EAC in terms of *how* to implement a “testing and certification program.” The law does *not* (and really should not) specify or prescribe the features or operations of such a program.³

The list of “requirements” for voting systems identified in HAVA is relatively short.⁴ Meanwhile, there have been sub-optimal outcomes of this regulatory structure over the past 17-years including, but not limited to:

- A highly concentrated election technology market;
- Limited choices for election officials;
- Voting products that do not keep up with broader technology advances;
- Vendor adherence to old standards;
- Product security vulnerabilities that are inappropriate for critical infrastructure; and
- High costs and slow timelines for certification.

This all begs a question,

“Why does the EAC continue to remain wedded to a substandard, largely unchanged certification process that was designed in another era, in response to a different set of challenges?”

In an article about the election technology marketplace, we made observations worth restating below about the net effect of EAC dysfunction:

Ironically, perhaps the most significant unintended consequence of these market dynamics is the observation that a well-intentioned set of post-HAVA regulatory structures, meant to help election officials improve the administration of elections and to help voters participate, may have effectively increased the (market) power of vendors, leaving state and local election officials (and the nation as a whole) even more dependent upon them.

³ The language is under-determined for purposes of specifying the implementation details of a testing program. The substantive total of what HAVA addresses on the topic of such a program is contained in Section 231, which states in relevant part, “IN GENERAL. — The Commission shall provide for the testing, certification, decertification, and recertification of voting system hardware and software by accredited laboratories.”

⁴ See Title III, *Uniform and Nondiscriminatory Election Technology and Administration Requirements*, Section 301, *Voting System Standards*, <https://www.eac.gov/assets/1/6/HAVA41.PDF>

From the standpoint of the three major vendors, the current distorted conditions continue to be a functional business model:

- *Vendors command the domain expertise in a sector with high barriers to entry;*
- *As privately held companies, they are not subject to the same disclosure requirements as public ones;*
- *They already have certified systems developed to old standards, which they can continue to sell (regardless of whether they are adequate for current national security needs);*
- *Newer federal standards remain several years away; and*
- *Election officials have no other choice but to purchase their technology from this small group of vendors, as they have proven themselves to be the only parties committed to navigating the EAC certification process.*

Under the distorted logic of this regulated technology environment, vendors have no reason to do the hard work of fundamentally re-thinking high-assurance computing architecture required for critical infrastructure, because they can continue to generate revenue for their shareholders by marketing newer versions of systems informed by arcane if not obsolete circa-2002 HAVA-era standards.⁵

Such are the current conditions, and unless the EAC makes significant changes in the VVSG 2.0 testing and certification program, the EAC is in real danger of fostering these distortions for at least another decade.

To avoid that outcome, and instead of remaining mired in a literal reading of HAVA's language the EAC should be asking itself this question:

“How can we implement a process that is faithful to HAVA and is designed to maximize the flow of well-tested voting technology to the nation's election officials, in an agile and responsive way?”

In the future it will be imperative that the VVSG 2.0 federal certification program support rapid changes to voting technology, at a pace faster than the last two decades have experienced. This is particularly urgent given a rapidly changing threat environment where foreign nation-state actors are attempting to interfere with our nation's very sovereignty.

With this situational analysis and context, the balance of this paper presents recommendations for how the EAC can achieve increased agility and flexibility in three areas that are necessary if a re-invented EAC is to meet our national security needs:

1. **Rethinking Voluntary Federal Guideline Standards:** Greater agility in developing and updating federal voting system standards, at a more regular pace;
2. **Reinventing an Agile Certification Process:** Improving the process for certifying voting technology, including a framework for more agile security updates; and
3. **Catalyzing Innovation:** Motivating vendors to advance their technology, through renewed incentives and restrictions.

⁵ See: http://bit.ly/OSETessay_13May19

All of these structural recommendations operate at the organizational and programmatic level. These three elements do not (and should not) address the underlying structures or mechanics of voting systems. Rather, recognizing that the EAC must rapidly process an organizational intervention and reinvention, the focus must be on significant changes to *how* programs are administered, rather than on what should be new functional requirements of the technology the Agency guides.

We pause to reiterate that: [the OSET Institute recognizes and earnestly supports a strong, effective, U.S. Election Assistance Commission.](#)

Undoubtedly, the Agency has an imperative role in supporting the states in providing for America's election administration infrastructure. However, if the EAC cannot rapidly make some significant adjustments in how it operates, such could invigorate those factions that would rather see the Agency dismantled or dissolved. Therefore, this paper is timely because we believe it is important to examine the situation and offer recommendations on how the EAC can literally re-invent itself before it is too late.

2. Recommendations for a More Agile Standards-Update Process

If the EAC is to deliver on its prior promises of agility and flexibility —*moving away from talk and toward demonstrable action*— it must develop new methods to significantly accelerate the process by which the federal standards are developed and updated.

To put the slow pace of recent history in perspective, since the EAC was created by HAVA 17-years ago in 2002, the Agency has issued and adopted only *two* (2) sets of voting system standards —VVSG version 1.0 (in 2005), and a minor update to VVSG 1.1 (in 2015).

In the interim, the Agency had an abortive effort to release 2007 standards (which were never adopted by the Commissioners), and a 6-year long road (2009 to 2015) to minor update VVSG 1.1, due in major part to lack of a quorum of Commissioners during those years.

Contrast that with the pace at which technology progresses, bringing about wholesale changes in capabilities, with new security challenges by the hour. Indeed, since the Agency was launched by virtue of the HAVA legislation in 2002, we've witnessed the introduction of the Apple iPod Classic v2 digital music player (July 2002) followed by ten (10) generations of the Apple iPhone over the past 17 years. Today's smart phones are powerful pocket computers, serving not just music, text and voice calls, but advanced video, location-based services, and digital wallet capabilities using biometric security. By contrast, voting machinery designs remain based on late 90s-era PC technology.

Clearly, the EAC must reinvent itself first, if there is any hope to catching up with the technology tsunami that is engulfing society.

Problem Statement 1

[In a highly dynamic and rapidly progressing technology environment, the EAC consumes far too much time to develop and adopt new voting system standards to keep up with the pace of change in a digital society.](#)

Recommendation 1

For the next generation of guidelines, VVSG 2.0, the EAC must honor and implement a clear distinction between **Principles and Guidelines** versus **Requirements**. Principles and Guidelines must reflect policy statements, which require Commissioner approval through a vote. On the other hand, Requirements must be capable of update by the Technical Guidelines Development Committee (TGDC), the Standards Board, and EAC Testing and Certification staff, *without* being dependent on Commissioners' approval.⁶

Such an organizational structure can help alleviate “logjams” that result when the EAC does not have a quorum of Commissioners to adopt changes. We also recommend that, as part of the process by which the TGDC, Standards Board, and EAC staff consider changes to Functional Requirements, a process mechanism should be put in place by which the joint body can vote to require consultation and approval from the Commissioners on selected requirement changes, in exceptional cases that are deemed to be particularly sensitive or consequential.

Discussion

The distinction between “Principles and Guidelines” and “Requirements” is akin to the classic distinction in technology product management between *what* and *how*. In the process of product management, product managers specify a desired outcome for technology (*or in this case, what the technology must “be”*), without specifying or constraining the manner by which that outcome can be generated. Based on product goals and objectives (informed by market analyses), engineers develop technical requirements that specify *how* to implement capabilities that will deliver the desired outcome.

This analogy is similar to the challenge at hand, regarding how to maintain flexibility in the federal certification program. VVSG 2.0 “Principles and Guidelines” constitute the “*what*”; they are policy statements about capabilities that voting systems must deliver (e.g., security; usability; auditability; interoperability; etc.). Those principles and guidelines are precisely the sort of policy decisions that *should* require the approval of EAC Commissioners. However, as technology changes, the agility and adaptability of the federal certification program should not be dependent on the Commissioners' availability to weigh in on the details of how policies are achieved.

Example: Suppose that a new International Standards Organization (ISO) specification for the format of time/date stamps is determined by EAC certification staff to be preferable for purposes of voting system audit logs; the decision of whether to *adopt* that specification as a new or updated functional requirement in the VVSG is merely a “*how*” to achieve the principle (or “policy”) of auditability.

In other words, requirements are simply statements of how to “operationalize” the achievement of a policy outcome.

And it would be bad for the certification program, and hence bad for election officials, to make the flow of technology *dependent* on EAC Commissioner approvals of potentially arcane functional specifications. Indeed, the TGDC, the Standards Board, and EAC technology experts

⁶ See: https://trustthevote.org/wp-content/uploads/2019/05/29May19_OSET-VVSG2-CommentsSubmission.pdf

and staff should work collaboratively to approve changing requirements about such *functional* capabilities.

We submit that this understanding of **Principles** (*i.e., policies, or the “what”*) versus **Requirements** (*the “how”*) is *vital* to the future success of VVSG 2.0 in maintaining its relevance.

In a rapidly changing technology environment, adaptability and agility in the federal certification program will be paramount. The EAC’s decision to make a distinction between high-level “Principles and Guidelines” vs. “Functional Requirements” was a great first step in creating the conditions for such agility; but requiring Commissioner approval before any changes in requirements can be adopted will undercut that very same promise.⁷

3. Recommendations for a More Agile Testing and Certification Process

In addition to accelerating the pace at which federal voting system standards can be updated, a similar effort is also required to accelerate the pace of testing and certification campaigns for voting systems.

Problem Statement 2

The current certification process is archaic, based on an obsolete systems model, and complicated by slow, cumbersome, and costly methods. A major cause of this is an overly broad definition of “voting system” that fails to adequately limit the scope of required testing.

Recommendation 2

We recommend that the Agency’s past understanding of “voting system” be re-assessed and reinvented in a far more targeted manner, to classify voting system components as *only those used to actually cast and count votes*. In addition, programmatic changes to permit “*component-level certification*” instead of requiring “total system certification” would accelerate the pace of certification campaigns.

Discussion

The Help America Vote Act of 2002 (HAVA) adopted a broad definition of “voting system” for *legislative* purposes, encompassing a total combination of a wide scope of components, functions, practices, and documentation in its description of the term.

We believe that the legislative definition was needlessly implemented by the EAC as an erroneous *programmatic* requirement that the EAC will *test and certify* only entire “total” system configurations.

⁷ For an example of the depth of concern on this issue voiced by election officials, see the National Association of State Election Directors Executive Board submitted comments to the EAC from May 2019, <https://www.nased.org/news/2019/5/3/comment-on-the-vvsg>

Notwithstanding typical practices from major voting system vendors and testing authorities, we believe that the EAC has an important opportunity to consider the scope of “systems” and “components” to which the VVSG 2.0 requirements are applicable in a more flexible and nuanced way.

More specifically, we recognize that although past certification campaigns have been focused on “total” system configurations that include a comprehensive minimum set of end-to-end functions, there are alternative ways of defining a “voting system” in a manner that could still be consistent with HAVA’s definition.

It is our view that few things have been more consequential for innovation and choice (or lack thereof), than an exclusively “totalizing” conception of a voting system. The assumption that any manufacturer of a voting system to be certified must be able to provide *all* components that could *potentially* fall with HAVA’s broad description of a “voting system” has vastly increased the complexity of development, deployment, and support. As a result, the implementation of this broad HAVA definition has ironically resulted in a highly-concentrated marketplace that reduces competition, increases dependence on vendors, and leaves our nation’s election officials with fewer choices.

The growing concentration in the voting technology industry, where the two largest providers supply voting systems for approximately 80% of the nation’s registered voters, coupled with the fact that only one new vendor has meaningfully entered the marketplace in the past decade, dramatically illustrates how complexity can produce inertia. An exclusively “total” conception of voting systems means that the voting technology services market is effectively closed to a broad range of government IT service providers.

In order to provide voting system services and support to the U.S. market, a company must first pay the up-front cost and ongoing costs of developing, certifying, and delivering a proprietary voting system product to customers, along with the services and support contracts that go along with the products.

Furthermore, the re-certification process for updated voting equipment can be lengthy and expensive if a “voting system” is defined only in a broad, comprehensive way. These conditions can serve as a deterrent to manufacturers making even minor updates. When the “hurdle” to be overcome is certification of an entire system, even to satisfy the need for merely small changes, voting system manufacturers perceive a limited return on investment in addressing the ongoing needs of current customers through value-added enhancements. Instead, vendors focus on making functional changes to their products mainly or sometimes exclusively to open new regional markets, often leaving prior releases to lie fallow. This, in turn, can leave election officials more dependent on vendors, waiting for years for their preferred enhancements, and increasing the likelihood that voting technology development is “frozen.”

However, in contrast to the unintended consequences of testing voting system components only as full systems, and in light of the need for upcoming revisions to the EAC *Testing and Certification Program Manual* associated with VVSG 2.0, we believe that new procedures for testing could be an enabler for positive market transformations.

Specifically, component-level certification, in conjunction with VVSG 2.0 requirements to support NIST Common Data Formats, could introduce greater diversity and agility in the voting system marketplace—both of which are essential in a rapidly changing threat environment.

By “component-level certification,” we mean the ability for manufacturers to develop, test and seek certification for individual portions of a voting system, rather than being required to submit only entire systems for certification. This approach can catalyze a more diverse group of technology providers to develop systems in accordance with their greatest strengths, and it also allows finer distinctions between mission-critical voting components (e.g., device configuration, ballot casting and vote capture), versus less security-centric applications (e.g., election data management and ballot design).⁸ Ballot design tools might benefit, for example, from being developed by providers with graphical design and usability testing skills that are quite distinct from the skills needed to produce secure single-function voting devices.

4. Recommendations to Motivate Vendors to Update Technology

Problem Statement 3

The Agency’s current testing and certification program allows private voting technology vendors too much freedom to continue developing and selling so-called “new” technology designed to badly out-of-date federal standards. As a result, the nation’s critical democracy infrastructure is ill suited for the real-world threats that exist today.

Recommendation 3

The EAC must implement policies that create incentives and requirements for manufacturers to develop systems designed to comply with newer standards. Conversely, the Agency must place more comprehensive restrictions on manufacturers’ ability to make modifications to currently certified systems under *old* VVSG standards.

Discussion

To date, no voting system manufacturer has submitted a system for testing to anything other than the 14-year old VVSG 1.0 standard. Those 2005 requirements are inadequate for the current global environment or for current voter needs. Accordingly, the EAC must implement policies that create incentives and requirements for manufacturers to develop systems designed to comply with newer standards. However, “blunt force” requirements that “sunset” prior standards too aggressively could pose challenges for state and local officials using older systems, by potentially disrupting continued support of deployed voting systems.

To achieve the right balance between these needs, we believe that the EAC must establish a new policy that clearly and precisely establishes a distinction between “*new*” versus “*modified*” systems.

⁸ For additional discussion on a more targeted definition of “voting system,” including terms like “mission-critical” and “security-centric,” see: *A New Architecture for Trustworthy Voting Systems*, <https://www.osetfoundation.org/research/2019/04/03/newvstarch>

The Agency currently promulgates an “implementation period” each time a new VVSG standard is adopted, which transparently allows a transition period (typically 18 months) during which the EAC will accept submissions for testing and certification of voting systems to either the old standard, or the new standard; manufacturers get to choose. Under current practice, once the implementation period has concluded, the Agency is *only* supposed to accept submissions for new systems under the *newer* standard.

However, under this current practice, the problem is that the EAC also allows vendors to submit modifications to voting systems *previously* certified (i.e., currently under the VVSG 1.0 (2005) standard), without ever having clearly established what constitutes a “new” system versus a “modified” system.

The EAC *Testing and Certification Program Manual* includes only a formal definition of “new” vs. “modified,” but not a *substantive* one (i.e., a “new” system is a system not previously certified, and a “modified” version includes changes to a system previously certified). Needless to say, this open-ended “definition” is not helpful in knowing when to forestall further “modifications.”

To be clear: we believe it is critically important to allow manufacturers to continue supporting deployed legacy systems under older standards for a reasonable amount of time. But 14 years after the adoption of VVSG 1.0 is *not* a “reasonable” amount of time, and manufacturers are currently taking advantage of a lack of clarity in EAC Program Requirements and Agency policy.

We believe this situation must be corrected. Until manufacturers face more comprehensive restrictions on their ability to make modifications to currently certified systems under old VVSG standards, they will continue to do so. Accordingly, we recommend the following, to motivate vendors to advance their technology at a pace more appropriate for critical democracy infrastructure:

1. The EAC must devise a precise, substantive policy statement on the difference between a “new” versus a “modified” voting system.
2. The EAC should set an “expiration” time window associated with any new voting system’s eligibility to be tested for compliance with the standard to which it is originally tested.
 - a. For example, after the first submission of a “new” voting system to any particular standard, the EAC could impose a five-year limit on that system’s eligibility to test for compliance with the same standard, assuming a newer standard is available.
 - b. Based on past history, the time required for manufacturers to develop, test, and certify a voting system to new standards is approximately five (5) years, and this window would allow adequate time for manufacturers to develop a product roadmap in anticipation of any new requirements, and it would encourage them to make sure that their roadmap simultaneously provides for support of older systems, while also preventing them from avoiding new standards indefinitely, and (at least gently) force them to move forward and develop toward the future.

- c. Even during the long period from 2009 to 2015 when the EAC lacked commissioners to adopt VVSG 1.1, the vast majority of its substantive content was available to the manufacturers, and there was only modest risk in developing new products to those draft requirements
3. In concert with #2 above, the EAC must ensure that any new definition of a “modified” system allows manufacturers to continue support of older deployed systems in a predictable way, to avoid the costly, disruptive, and painful unintended consequence of potentially “freezing” important and potentially necessary changes to voting technology platforms that state and local election officials might have just purchased.
4. The EAC must disallow manufacturers “re-classifying” a previously certified, previously modified system as “new,” simply to “restart” the clock for further modifications under an older standard, thereby extending the life of old platforms in perpetuity.

5. Summary and Conclusion

The EAC is at a critical turning point. In order to finalize the VVSG 2.0 program and respond to new threats in the global technology environment, it is essential that the Agency learn from its mistakes of the past and reinvent itself to face future challenges.

Simply put, the EAC must demonstrate that it has the capacity for self-reflection, self-assessment, and self-critique. More specifically, the EAC must make significant changes at the organizational and programmatic level. This is a prerequisite to specifying the technical capabilities required of future voting systems.

The single greatest obstacle to the evolution and continuous improvement of the U.S. EAC is a lack of institutional self-understanding. The EAC appears to be overpromising and under-delivering on the need to change how standards are devised and updated, and on a revised approach to implementing the testing and certification program.

From our position, having witnessed the EAC in operation since its inception and having contributed extensively to the standards making processes over the past 8 years, we offer three key areas in which we believe the Agency must make significant changes to how programs are administered, rather than simply focusing on new functional requirements for future voting technology. Those three areas are:

1. **Apportionment of Roles and Responsibilities.** The EAC must implement and honor a clear distinction between Principles and Guidelines versus Requirements. Principles and Guidelines reflect policy statements, which require Commissioner approval through a vote; but Requirements must be capable of update by the Technical Guidelines Development Committee (TGDC), the Standards Board, and EAC Testing and Certification staff, without being dependent on Commissioners’ approval.
2. **Certification Process.** The Agency’s past understanding of “voting system” must be re-assessed and reinvented in a far more targeted manner, and the EAC must also make programmatic changes in certification to permit “component-level certification” instead of requiring “total system certification.”

3. **Standards Adherence and Compliance.** The EAC must implement policies that create incentives and requirements for manufacturers to develop systems designed to comply with newer standards. Conversely, the Agency must place more comprehensive restrictions on manufacturers' ability to make modifications to currently certified systems under old VVSG standards.

Where to From Here and How

The Institute is clear from experience and observation of the EAC, as to what are the required operational innovations to reinvent the EAC with the kind of agility and flexibility (*while rehabilitating organizational dysfunction*) that can enable the Agency to succeed. And success amounts to the EAC best serving its constituents and playing the vital leading role it must in ensuring a verifiable, accurate, and secure election infrastructure.

What is unclear to us is how to actually implement the necessary changes, due to the Institute's total lack of subject matter expertise in federal administrative law, government agency administration, and the required change management techniques. There are experts and change agents available to assist the EAC with that process, if and when the Agency is ready.

However, we can offer one other observation that may help. In years past there have been successful efforts to inject innovation into agencies governed by the Code of Federal Regulations. One operative example was the creation of **18F** to assist with rapid modernization of digital initiatives in government.⁹ While not directly applicable to the EAC situation, we believe agencies that have benefited from using 18F may have learning to share about corresponding process redevelopment.¹⁰

Nevertheless, we conclude by restating that given our decades of experience in technology business management, product development lifecycles, development of technology standards and working with standards making bodies globally, we firmly believe the EAC must essentially reinvent major aspects of its operation. Specifically, organizational and programmatic changes are required if the EAC is to remain relevant in a global environment where new digital threats emerge on a daily, if not hourly basis. Simply issuing new functional requirements that remain trapped by the institutional inertia of past processes will *not* deliver the agility and flexibility that our national security requires.

Accordingly, the EAC must literally reinvent itself in order to successfully deliver on its mission of "election assistance" in defense of democracy administration, and as a matter of national security in helping preserve American sovereignty.

⁹ See: <https://18f.gsa.gov/> The Office of 18F is a "digital services" agency based within the U.S General Services Administration. While the focus of 18F is on delivering innovative digital services to augment, enhance, improve or innovate a federal government agency operations, there is inherent process re-engineering and improvement that can come with that effort, and as such, 18F may possibly be able to offer advice and counsel on improving organizational and programmatic elements of the U.S. EAC. See also: <https://en.wikipedia.org/wiki/18F>.

¹⁰ See: <https://18f.gsa.gov/what-we-deliver/#some-agencies-weve-worked-with>.