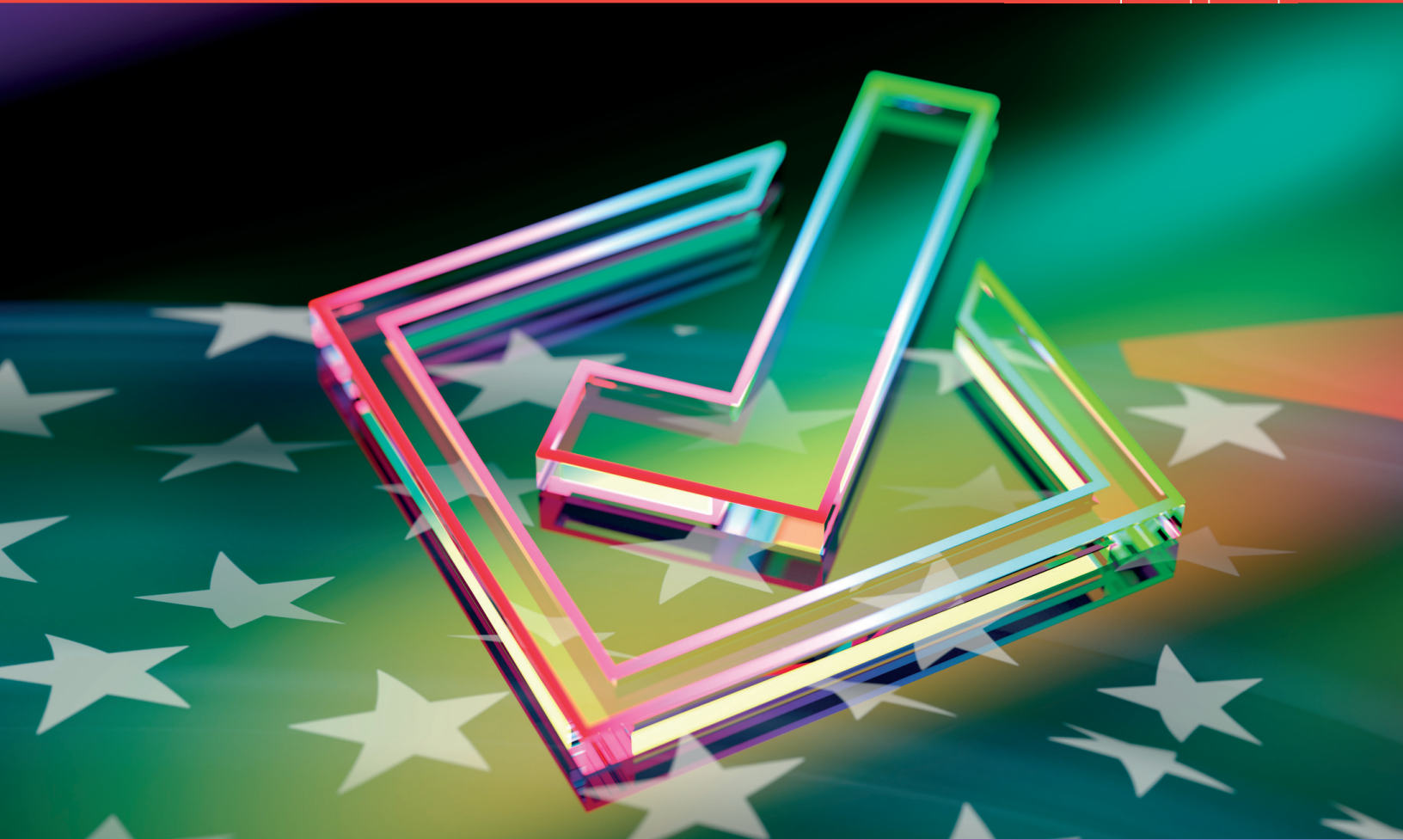


Navigating VVSG 2.0:

Essential Insights for Enhancing Election Integrity
and the Voter Experience



This issue paper outlines the new VVSG 2.0 guidelines and offers practical information and advice for States and jurisdictions facing intense public scrutiny while striving to provide fair and accurate elections. It presents the primary changes to voting systems and what this means for local election offices, Secretaries of State, and State Election Officials when putting together their requirements for voting system upgrades.



Navigating VVSG 2.0: Essential Insights for Enhancing Election Integrity and the Voter Experience

In the 20 years since the EAC launched VVSG 1.0, the election industry and voting systems manufacturers have made significant inroads in increasing levels of security, transparency, and accessibility to address public concern and increase voter confidence. VVSG 2.0 puts forward improvements for the standardization and security of voting data as well as accessibility features to reach a more diverse voter and election worker population.

In February 2021, the four EAC Commissioners unanimously approved the new VVSG 2.0 guidelines, enabling manufacturers to start integrating the reforms into their voting machines. VVSG guidelines are the “only set of uniform specifications and requirements against which voting systems can be tested to determine if the voting systems meet required standards” (Press release, EAC.gov, Feb 10, 2021). In addition, 49 states and the District of Columbia use at least some of the EAC’s voting system guidelines plus State requirements for voting system certification (<https://www.csg.org/glossary/voluntary-voting-system-guidelines-vvsg/>).

For jurisdictions looking to drive public trust and offer the highest levels of security, this paper will explain that best practice is to begin including VVSG 2.0 into the next round of RFPs.






Explanation of new Guidelines

The new guidelines introduce state-of-the-art hardware capabilities and innovative software advancements, setting a new gold standard for election technology. Adopting these guidelines and integrating EAC VVSG 2.0 certified products will elevate election security to the highest level, ensuring that jurisdictions provide top-tier election systems to the public.

The best practices will enhance voting system functionality, security, transparency, and accessibility. They encompass a suite of updates and improvements across devices and systems, measured and tested for compliance with next generation hardware, advanced software, and human-centric design. This comprehensive approach promises to make elections more user-friendly, provide rigorous auditing for integrity, and foster public trust through enhanced security features.

Primary changes in the VVSG 2.0 Guidelines

The diagram below showcases some of the more comprehensive VVSG 2.0 improvements, unanimously adopted by EAC commissioners since 2021, which are poised to transform the election landscape:

SECURITY 	Enhanced Encryption	Voting systems must use advanced encryption methods to protect data integrity and confidentiality.
	Secure Boot & Firmware Updates	Systems must support secure boot processes and authenticated firmware updates to prevent unauthorized changes.
	Intrusion Detection & Prevention	Implementation of mechanisms to detect and prevent unauthorized access or tampering with voting systems.
TRANSPARENCY 	Voter-Verified Paper Audit Trails	Systems must provide a paper record that voters can verify before casting their vote, ensuring accuracy and transparency.
	Public Disclosure of Source Code	Voting system manufacturers are encouraged to disclose source code for public review, enhancing trust and accountability.
	More Comprehensive Audit Logs	Following on from VVSG 1.0, systems must maintain more detailed logs of all activities, which can be audited to verify the integrity of the election process.
ACCESSIBILITY 	Multi-Language Support	Voting systems must support multiple languages, both in visual and audio formats, to accommodate diverse voter populations.
	Enhanced Usability Features	Systems must include features such as adjustable font sizes, high contrast modes, and audio assistance to ensure accessibility for all voters.
	Accessible Voting Interfaces	Voting systems must provide interfaces that are accessible to voters with disabilities, including tactile and audio feedback options.

For a comprehensive overview of the VVSG 2.0 guidelines, visit https://www.eac.gov/sites/default/files/TestingCertification/VVSG_2_Major_Updates.pdf.

What does this mean for the industry as a whole?

Under its current lifecycle policy, the EAC will no longer accept certification submissions under the VVSG 1.0 or 1.1 standard unless they meet very specific requirements (security updates, state-specific changes, bug fixes, end-of-life COTS replacements). Manufacturers that want to certify new or updated systems must submit to the VVSG 2.0 standards.

To comply with the VVSG 2.0 standards, manufacturers can choose to incorporate VVSG 2.0 functionality into their systems gradually, or they can choose to certify a full, end-to-end VVSG 2.0 compliant system. Systems that are end-to-end compliant with and tested to VVSG 2.0 have been specifically designed and certified to meet the new requirements. Improvements can be seamlessly integrated into these 2.0 systems without being affected by the lifecycle policy, unlike the stringent limitations faced by manufacturers of older systems.

These end-to-end VVSG 2.0 systems must be tested using the new, rigorous Program Manual and VSTL procedures, including full penetration testing, accessibility testing, and usability testing, on top of the standard tests for verifying compliance with functional and technical requirements. Some manufacturers have already begun this testing process, receiving positive results confirming the functionality and security of the new systems.

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In terms of investment, rather than obligate each State/Jurisdiction to invest in new voting systems immediately, the guidelines are intended to be implemented in the next round of budgeted voting system purchases.

As most States operate on a 10-year average system life, jurisdictions need to keep VVSG 2.0 top of mind when planning for the next voting system purchase. In theory, by the end of each state's purchasing cycle, all states will have benefited from comprehensive VVSG 2.0 certified systems.

Each State/Jurisdiction is strongly encouraged to open a dialogue with their voting system manufacturer to understand how and when their product line will become "VVSG 2.0 Certified" by the EAC, with the understanding that investing in a fully certified 2.0 system is the most efficient use of time and money. This will align each planning cycle with the "VVSG 2.0 certified" products that are right for that organization, ensuring a smooth transition to VVSG 2.0 and paving the way for fair and accurate elections.

Considerations and Best Practices for Jurisdictions

There are two main questions for Election Officials looking to purchase new voting systems over the coming year:

1. Why migrate to VVSG 2.0 when 1.0 is still certified?
2. Why insist on an end-to-end fully certified VVSG 2.0 system over one that claims to be "2.0 ready?"

To address these, officials need to think about what VVSG 2.0 will mean for their elections.

VVSG 2.0 will prepare jurisdictions for future advancements in election technology and standards, while freeing them from lifecycle policy constraints on updates. It ensures that their systems are in line with industry best practices.

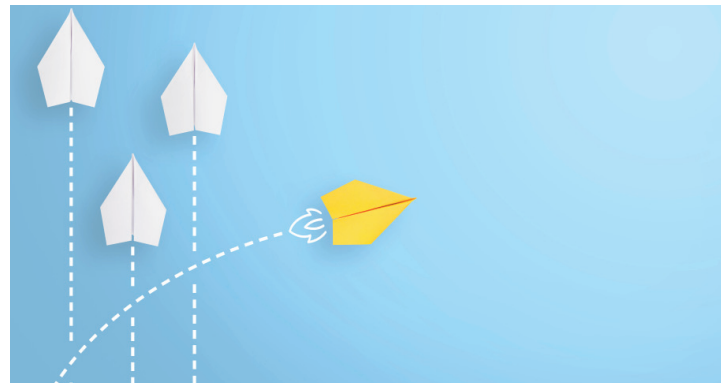
Migrating to VVSG 2.0 is the best way to build public trust and confidence in the election process as it demonstrates a commitment to maintaining the highest standards of election integrity and security.

Understanding the latest VVSG 2.0 guidelines will empower jurisdictions to make informed decisions about their future purchases. Whether a current manufacturer's products already support VVSG 2.0's more stringent requirements, or plan to include them in their next product development, this will greatly impact the decision-making process.

With the EAC's lifecycle policy restrictions on applications for VVSG 1.0 voting systems, any new systems entering certification must now comply with VVSG 2.0 guidelines. Election officials should check with suppliers regarding their EAC certification status, as the process is lengthy. Some manufacturers have already begun the VVSG 2.0 certification process, with the first systems expected to be certified in 2025. To save time and avoid frustration, jurisdictions should align their purchases with manufacturers who will be ready when they are.

New voting systems should not only contain VVSG 2.0 compliant features but also be fully VVSG 2.0 certified from end-to-end. This will ensure that any new system meets the bar set by the EAC for fair, accurate and accessible-to-all elections.

A final point: VVSG 2.0 guidelines are still new to the industry. Now is the ideal time for election officials to educate themselves on the implications of the guidelines and begin integrating them into their next round of RFPs. It is in the best interests for each state or jurisdiction to begin rolling out these features for the benefit of the voting public and election workers as soon as 2025.



Conclusion

In the broader context, elections have never been under such intense scrutiny, and Election Officials have never been more required to demonstrate the integrity of their systems. VVSG 2.0 provides the tools and the certified stamp of approval to drive voter confidence.

These guidelines have been designed to improve voter confidence and election accountability through improvements in security, transparency, and accessibility. To ensure that elections reach the highest levels of trust as well as usability of voting machines, each State going forward must integrate “VVSG 2.0 Certified” products.

Starting in 2025, avoid the economic inefficiency of short-term planning. Embrace the path to managing smart elections with a new VVSG 2.0 certified platform that is defensible, efficient, and adoptable. Explore your options among the available vendors to move efficiently at every step of the election lifecycle and ensure you can confidently defend the outcomes of the elections you oversee.



About Hart - Election Integrity starts with Hart.

Hart's end-to-end election solutions and services enables you to conduct elections with confidence and deliver accurate results with ease. Only Hart provides the secure and certified voting systems you expect plus the tools, services and support you need before, during and after election day. With Hart, you get a partner who is committed to your success and delivers a full suite of programs tailored to your unique needs. The result? You can have confidence in us so your voters can have confidence in you.

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