Voting System Testing and Certification

VVSG Lifecycle Policy

Contents

1. Introduction

1.1. **Introduction:** In late 2002, Congress passed the Help America Vote Act of 2002 (HAVA), which created the U.S. Election Assistance Commission (EAC) and vested it with the responsibility of setting voting system standards and for providing for the testing and certification of voting systems. This mandate represented the first time the Federal government provided for the voluntary testing, certification, and decertification of voting systems nationwide. In response to this HAVA requirement, the EAC has developed the Voting System Testing and Certification Program (Program).

1.2. **Authority:** Section 231(a)(1) of HAVA specifically requires the EAC to "… provide for the certification, decertification and re-certification of voting system hardware and software by accredited laboratories." The EAC has the sole authority to grant certification or withdraw certification at the federal level, including the authority to grant, maintain, extend, suspend, and withdraw the right to retain or use any certificates, marks, or other indicators of certification.

1.3. **Scope**: This document provides the Voluntary Voting System Guidelines (VVSG) lifecycle policy. Participation in the program is voluntary, but if voting system manufacturers decide to participate then they and their products will be subject to the VVSG lifecycle policy. This document supersedes any previous policy from the EAC concerning VVSG lifecycles.

1.4. **Purpose:** The intent of this policy is to facilitate migration to revised VVSG standards and establish consistent periodic review, update, and versioning of future standards.

1.5. **Feedback:** The EAC will engage registered voting system manufacturers and Voting System Test Laboratories (VSTL) on newly adopted VVSG standards to inform them of the differences between VVSG versions, obtain information about practical timelines to prepare for the new standard, and to address any questions or concerns they may have.

2. VVSG Version Convention

2.1. **Types of Version Changes:** This section defines major and minor standard changes to the VVSG. After consultation with stakeholders and a proposed VVSG update has been drafted, the EAC will determine whether a version change is major or minor.

2.2. **Major Version Changes:** Major changes to the VVSG will cause the primary number to increment by one and the secondary number to reset to zero. For instance, the new version number for VVSG 2.0 with major changes would be VVSG 3.0. In general, major version changes necessitate new hardware, architectural upgrades, or add significant new features that break compatibility with the prior major VVSG version.

2.3. **Minor Version Changes:** Minor changes to the VVSG will cause the secondary number to increment by one. For instance, the new version number for VVSG 2.0 with minor changes would be VVSG 2.1. In general, minor version changes will not necessitate new hardware or other upgrades that maintain compatibility with the same major VVSG version.

2.4. **Voting System Test Laboratory (VSTL) Accreditation:** The need for lab accreditation will be based on consultation between the EAC and National Institute of Standards and Technology (NIST) National Voluntary Laboratory Accreditation Program (NVLAP), and metrics such as a change in core or non-core competencies, required skills, or any other criteria deemed necessary by the EAC that are the result of the VVSG update.

Major VVSG version changes may require VSTL accreditation. Minor VVSG version changes will not require VSTL accreditation.

3. Migration to Revised VVSG Standards

3.1. **Overview**: When a new VVSG iteration is adopted by the EAC's Commissioners, migration to the new standard is a necessary process for the Testing and Certification Program. Manufacturers submitting new systems must submit them to the most recently adopted VVSG version that is ready to be used for testing. However, systems certified to previous VVSG versions will still be able to receive critical updates.

3.2. **VVSG Version Migration:** Once a new major revision to the VVSG is ready to be used for testing, with at least one VSTL accredited to test voting systems to the standard, prior major VVSG versions will no longer be used by the EAC to certify voting systems. Twelve months after the date of the first VSTL accreditation to a new major VVSG version, the EAC will no longer accept submissions to test new voting systems to previous major versions, with the exception of maintenance modifications as defined in section 3.3 of this policy. Once a VVSG standard is no longer used for testing and certification of new and modified systems by the EAC, that standard will be assigned legacy status, and manufacturers will be required to submit voting systems to the latest VVSG standard.

This process does not affect the status of any EAC certified voting system. Those systems shall maintain their status and jurisdictions may continue to acquire these as EAC certified systems. Systems may only be decertified upon a vote of the Commissioners and following the process detailed in the EAC's Testing and Certification Program Manual.

3.3. **Maintenance Exceptions:** To address the subject of fielded voting system maintenance, changes to systems certified to a legacy VVSG standard will be accepted within a narrow definition. These changes may be requested through application for a system modification or as an engineering change order for qualifying requests.

Changes to a system certified to a legacy VVSG standard must be in one or more of the following categories:

3.3.1. **Security Update:** Software patches or hardware mitigations to address known security vulnerabilities and exploits. Software patches may include code authored by voting system manufacturers.

3.3.2. **Bug Fix:** EAC-approved fixes to correct anomalies previously reported to the EAC. Examples include critical functional discrepancies or issues that are part of an EAC certified system. Enhancements are not considered a fix.

3.3.3. **COTS Replacement:** Replacement of commercial-off-the-shelf equipment that has reached end-of-life. Any significant changes to specifications or functionality in the replacement are discouraged and must be evaluated and approved by the Testing and Certification Program Director and a VSTL.

3.3.4. **Jurisdictional Rule Change:** Changes that are legally required in a jurisdiction already fielding the system due to a change in statute, rule, directive, or other publication that places requirements on a jurisdiction. This type of change must be confirmed by a chief election official, electoral board, or certification body where this system is state certified or fielded.

3.3.5. **Updating and Adding New Components to be Evaluated Against the Current VVSG Standard:** Changes to one or more components outside of 3.3.1 through 3.3.4 may be permitted provided the proposed changes meet the most current VVSG version. This may include changes to components necessary to integrate new software, firmware, and hardware into the system. In this instance, the overall system certification granted would be to the VVSG version of the system that is being modified.

Voting systems that feature changes that are outside these categories will only be accepted for testing and certification to the most current VVSG version. When a manufacturer applies for a modification to a voting system that is certified to a legacy VVSG standard, they must clearly state under which category they are applying and must supply supporting documentation for this claim.

EAC staff will make the determination on acceptance of modifications to maintain systems certified to legacy VVSG standards and will communicate the decision to the manufacturer and appropriate voting system test laboratory. This decision will be posted on the EAC website. Decisions will be made within five business days of receiving all necessary supporting documentation. Manufacturers are encouraged to contact the EAC in advance of applying for voting system testing for a modification to get a non-binding opinion on whether a modification would be considered in any of the categories enumerated in section 3.3.1 of this policy. Non-binding decisions will be provided to the manufacturer in writing within five business days.

4. VVSG Review and Update Process

4.1. **Overview:** More frequent iteration of standards is the result of a continuous improvement process that closely matches modern agile software and hardware development cycles. All updates to the VVSG will adhere to the established practice of public review and comment, agency review and comment, and consideration by the Commissioners, as described in HAVA.

4.2. **Timeline:** There will be a 12-month cycle for each review for revisions to the VVSG. It is understood the time taken to complete the review and update process will vary due to several factors, including but not limited to, the number of changes proposed, number of comments received from stakeholders, complexity of changes, and time taken to develop requirements.

4.3. **Scope:** Updates to the standards during this cycle may incorporate items such as Requests for Interpretation, Notices of Clarification, errata, and other administrative changes. Additionally, requirements may be added or adjusted to support more voting system functions or other updates to accommodate new technologies or standards. Stakeholders are encouraged to submit proposed changes as part of the VVSG review process.

4.4. **VVSG Review:** The EAC Testing and Certification Program will accept submissions of proposed changes to the VVSG throughout the year from stakeholders. The Testing and Certification Program, after consulting with NIST, will determine whether to accept or reject each proposed change. These proposals will include previously accepted changes including Requests for Interpretations, Notice of Clarifications, or other clarifying information from the program.

The EAC Testing and Certification Program Director will provide an annual report to the Executive Director at the end of the fiscal year detailing recommendations for updates to the VVSG, as specified by the quadrennial review language in section 311(c) of HAVA . This report will be shared with the Technical Guidelines Development Committee (TGDC), and posted to the EAC website. Feedback from this process will inform the decision to make updates to the VVSG. If the Executive Director decides not to pursue a new version of the VVSG, then any accepted proposed changes will be preserved and maintained until such a time that the decision to update VVSG is made.

4.5. **VVSG Update Process:** When the Executive Director determines that a new version of the VVSG should be published based on feedback from section 4.4**,** the process detailed in section 222 of HAVA will be followed. The EAC expects that key stakeholders will be involved throughout this update process.

4.5.1. The EAC will work with NIST and the TGDC to address accepted changes gathered from section 4.4 and draft revisions to the sections of the VVSG affected by the changes.

4.5.2. The Executive Director will submit the draft revised VVSG to the EAC's Board of Advisors and the Executive Board of the Standards Board for review and comment. The draft revised VVSG will also be posted for public comment.

4.5.3. The EAC will collaborate with NIST to review and address all comments. Comments will be posted to the EAC website once addressed. Concurrently, the Testing and Certification Program Director will draft updates to relevant sections of the program manuals and other program documentation, if necessary. Program manuals for the new standards will be posted for public comment.

4.5.4. The Testing and Certification Program Director will submit the updated VVSG and program documentation to the Executive Director. The Executive Director will forward all revised VVSG documentation to the Commissioners and will publish redline versions on the EAC website.

4.5.5. The Commissioners may meet with stakeholders and shall hold a public hearing prior to voting on the revised VVSG. This vote may not take place less than 90 days from the date

the Executive Director submits the draft revised VVSG to the Board of Advisors and Standards Board Executive Board as described in section 4.5.2.

The Commissioners will vote on whether to adopt the updated VVSG. For the purposes of this policy, "adopted" means that the Commission has accepted this copy of the VVSG as the final version and further edits, additions, or deletions outside of minor errata published to the EAC website cannot be made without incrementing the version.

4.6. **Commissioner Quorum:** In the event the EAC is without a quorum of Commissioners and adoption of a new VVSG standard is not possible, section 4.4 will be executed on an annual basis, and sections 4.5.1 through 4.5.3 will be executed, as necessary. Recommendations provided to the EAC for standard updates or changes will continue to be collected, evaluated, and drafted in accordance with the process in HAVA. The EAC can hold public meetings without quorum, however, adoption of updated standards cannot be accomplished without quorum. Once a quorum of Commissioners is reestablished, the process will proceed through sections 4.5.4, 4.5.5, and 4.5.6, as applicable, including all changes recommended previously up to section 4.5.3 in the process.

Appendix A - Glossary

Accreditation
Formal recognition that a laboratory is competent to carry out specific tests or calibrations.

Commercial Off-the-Shelf (COTS)
Software, firmware, device, or component that is used in the United States by many different people or organizations for many different applications other than certified voting systems and that is incorporated into the voting system with no manufacturer- or application-specific modification.

Component
An identifiable and discrete part of the larger voting system essential to the operation of the voting system, and an immediate subset of the system to which it belongs.

Decertification
Revocation of national or state certification of a voting system or any of its components.

Election Assistance Commission (EAC)
The Election Assistance Commission, created by the Help America Vote Act (HAVA) to assist the states regarding HAVA compliance and to distribute HAVA funds to the states. The EAC is also charged with creating voting system guidelines and operating the Federal Government's first voting system certification program. The EAC is also responsible for maintaining the National Voter Registration form, conducting research, and administering a national clearinghouse on elections that includes shared practices, information for voters, and other resources to improve elections.

Engineering Change Order
A change to a certified voting system's hardware, software, technical data package, or data, the nature of which does not materially alter the system's reliability, functionality, capability, or operation as detailed in the EAC's Testing and Certification Program Manual.

Fielded Voting System
An EAC certified voting system purchased or leased by a State or local government.

Help America Vote Act (HAVA)
Act passed by the U.S. Congress in 2002 to make sweeping reforms to the nation's voting process. HAVA addresses improvements to voting systems and voter access that were identified following the 2000 election.

Legacy
A status that denotes when a version of the VVSG standard has been superseded by an updated VVSG version.

Manufacturer
The entity with ownership and control over a voting system submitted for certification.

National Institute of Standards and Technology (NIST)
Federal organization tasked with assisting in the development of voting system standards. NIST develops and maintains standards for a wide array of technologies. NIST scientists assist the EAC in developing testable standards for voting systems.

Program Director
The individual responsible for administering and managing the EAC's Testing and Certification Program.

Standard
A document that provides requirements, specifications, guidelines, or characteristics that can be used consistently to ensure that materials, products, processes, and services are fit for their purpose.

Voting System
The total combination of mechanical, electromechanical, and electronic equipment (including the software, firmware, and documentation required to program, control, and support the equipment) used to define ballots; cast and count votes; report or display election results; connect the voting system to the voter registration system; and maintain and produce any audit trail information.

Voting System Test Laboratory (VSTL)
Independent testing laboratories accredited by the EAC to test voting systems to EAC-approved voting system standards. Each VSTL must be accredited by NVLAP) and recommended by the NIST before it may receive an EAC accreditation. NVLAP provides third party accreditation to testing and calibration laboratories. NVLAP is in full conformance with the standards of the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC), including ISO/IEC Guide 17025 and 17011.

Voluntary Voting System Guidelines (VVSG)
A set of specifications and requirements against which voting systems can be tested to determine if the systems meet required standards. Under HAVA, the EAC is responsible for developing, maintaining, and approving these standards.