Election Supporting Technology Evaluation Program Manual Version 1.0

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Revision History

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1. Introduction

1.1. **Program Background**. In 2002, Congress passed the Help America Vote Act of 2002 (HAVA), which established 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. In 2021, the EAC created the Election Supporting Technology Evaluation Program (ESTEP) to evaluate the security and accessibility of election supporting technologies such as e-poll books, electronic ballot delivery, election night reporting systems, and voter registration portals and databases. In 2022, the EAC hired its first Director of ESTEP, whose responsibilities will be to oversee testing and standardizing election supporting technologies with the goal of EAC certification.

1.2. **Program Purpose.** This Program establishes a protocol for testing critical election supporting technologies to ensure their conformance with the minimum security and accessibility standards established by the EAC. While participation in this Program is voluntary, EAC certification benefits the public and wider election technology field by supporting state and local election officials, increasing quality control and quality assurance of election-supporting technologies, and increasing voter confidence in the use of these systems.

1.3. **Program Scope.** The Program is one part of the overall technical assessment process that includes cooperative companion efforts at state and local levels. All stakeholders have a unique responsibility to ensure that election-supporting technologies meet specific requirements. This Program is primarily responsible for ensuring election-supporting technologies conform to the voluntary requirements established by the EAC. State and local officials have the responsibility of testing election-supporting technologies to ensure the system will support the specific requirements of each individual jurisdiction and may use EAC-accredited VSTLs to perform this testing. They are responsible for deciding if the election-supporting technology complies with state and local laws and making final acquisition decisions. The EAC does not certify election-supporting technologies to state or other standards. This Program is designed to:

- Establish and maintain standards for election-supporting technologies that can be used by voting system test laboratories (VSTLs) to test systems submitted for evaluation,
- Develop and maintain program manuals,
- Administer testing campaigns, and
- Report on the results of these campaigns.

1.4. **Program Manual**. This manual establishes the minimum requirements for participation in this Program. Participation in the Program is voluntary, but if election-supporting technology manufacturers decide to participate, then they must conform to the Program's procedural requirements.

    1.4.1. <u>Maintenance and Revision</u>. This manual will continue to be improved and expanded to meet the evolving needs of the EAC, manufacturers, voting system testing laboratories (VSTLs), election officials, and the greater election community. The EAC is responsible for

revising this manual and all revisions will be made consistent with federal law. Changes in policy requiring immediate implementation will be noticed via policy memoranda and will be issued to each registered manufacturer and VSTL, in addition to publication on http://www.eac.gov.

1.5. **Test Assertions.** Many of the election-supporting technology requirements focus on design at a high level and may be open to interpretation. In order to thoroughly test these requirements, manufacturers and VSTLs need the ability to break down each requirement into unambiguous, specific, and testable conditions. Test assertions are a method to accomplish this. The test assertions contain granular conditions that must be tested to determine conformance to specific requirements. The overall goal of the assertions is to ensure that the VSTLs test each requirement correctly and comprehensively. EAC staff will regularly review and revise the test assertions with feedback from VSTLs, manufacturers, election officials, NIST, and other stakeholders and will make recommendations to the Executive Director for final approval.

1.6. **Program Personnel**. All EAC personnel and contractors associated with this Program are held to the highest ethical standards. All agents of the EAC involved in the Program are subject to conflict-of-interest reporting and ethics review, consistent with federal law and regulation.

1.7. **Program Records**. The Program Director is responsible for maintaining accurate records to demonstrate that the Program procedures have been effectively fulfilled and to ensure the traceability, repeatability, and reproducibility of testing. All records are maintained, managed, secured, stored, archived, and disposed of in accordance with federal law, federal regulations, and EAC procedures.

    1.7.1. <u>Records Retention – Manufacturers</u>. The manufacturer is responsible for ensuring all documents submitted to the EAC, or that otherwise serve as the basis for the certification of an election-supporting technology, are retained. A copy of all such records must be retained if a certified election-supporting technology is offered for sale or supported by a manufacturer for five years thereafter.

    1.7.2. <u>Record Retention – EAC</u>. The EAC retains all records associated with the certification of an election-supporting technology if such system is fielded in a state or local election jurisdiction for use in federal elections. The records will otherwise be retained or disposed of consistent with federal statutes and regulations.

1.8. **Submission of Documents**. Any document submitted pursuant to the requirements of this manual must be submitted:

- In a secured PDF file, formatted to protect the document from alteration with a proper signature when required by this manual. Documents requiring an authorized signature may be signed with an electronic representation or image of the signature of an authorized management representative and must meet all subsequent requirements established by the Program Director regarding security.

- Via secure email or other secure file transfer method, if sent electronically, or a physical delivery of a compact disk or other digital media deemed acceptable by the EAC, unless otherwise specified. Sensitive files should be encrypted with encryption keys provided separately. For email delivery, use this address: estep@eac.gov. This method is most strongly recommended for secure and efficient review.

- By certified mail or similar means with tracking. For physical deliveries, use this address:
  U.S. Election Assistance Commission
  Attn: Election-Supporting Technology Evaluation Program Director
  633 3rd Street NW, Suite 200
  Washington, DC 20001

1.9. **Receipt of Documents – Manufacturers**. For purposes of this manual, a document, notice, or other communication is considered received by a manufacturer upon its physical or electronic arrival at the manufacturer's main office.

1.10. **Receipt of Documents – EAC.** For purposes of this manual, a document, notice, or other communication is considered received by the EAC upon its physical or electronic arrival at the agency. All documents received by the agency will be physically or electronically date stamped and this stamp will serve as the date of receipt.

1.11. **EAC Response Timeframes**. In recognition of the responsibilities and challenges facing manufacturers as they work to meet the requirements imposed by this Program, state certification programs, customers, state law and manufacturing schedules, the EAC will publish timeframes for its response to significant program elements.

1.12. **Publication and Release of Documents**. The EAC releases documents consistent with the requirements of federal law. It is EAC policy to make the certification process as transparent as possible. Any documents (or portions thereof) submitted under this Program are made available to the public unless specifically protected from release by law. All submitted documentation must utilize the least restrictive markings possible. The primary means for making this information available is through http://www.eac.gov.

2. Manufacturer Registration and Eligibility

2.1. **Overview**. Manufacturer registration is the process by which election-supporting technology manufacturers make initial contact with the EAC, provide essential information, and agree to procedural requirements to participate in the Program. A manufacturer must be registered before it can submit an application to have an election-supporting technology tested by the EAC. Each manufacturer will receive an identification code after successful registration. Registration does not constitute an EAC endorsement of the manufacturer or its products, nor is it a certification of that manufacturer's products. Testing laboratory eligibility is determined by EAC accreditation as defined in Section 2.7.

2.2. **Registration Requirements**. The EAC requires manufacturers to provide information to administer the Program and communicate effectively. The manufacturer must agree to requirements regarding duties and responsibilities throughout program participation.

Production and manufacturing facilities for commercial off-the-shelf (COTS) components, software, and plastic modeling facilities are not included under this requirement and need not be reported to the EAC. The EAC reserves the right to request additional information from manufacturers pertaining to manufacturing processes, including manufacturing facilities for the benefit of the Program.

Manufacturers must report all current facilities. If manufacturing is not underway at the time of a manufacturer's registration package submission, the manufacturer must report the last manufacturing facility that meets the definitions in this section. Manufacturers should also be aware that the reporting requirement is continuous and that when new manufacturing facilities are engaged, the registration package submitted to the EAC must be updated to reflect the new facilities as required by this manual.

Manufacturers are required to provide the following information in the submission of their technical data package.

2.2.1 The official name of the manufacturer.

2.2.2 The address of the manufacturer's official place of business.

2.2.3 A description of how the manufacturer is organized (i.e., type of corporation or partnership).

2.2.4 Names of officers and/or members of the board of directors.

2.2.5 Names of all partners and members (if applicable).

2.2.6 Identification of any individual, organization, or entity with a controlling ownership interest (51% or more) in the manufacturer.

2.2.7 Disclosure of any individual, organization, or entity with foreign ownership interest in the manufacturers.

2.2.8 The name and contact information (telephone number, email address, and physical address) of the manufacturer's management and technical representatives.

2.2.9 Consistent with guidance provided by this manual, the manufacturer's written policies regarding quality assurance system, internal procedures for controlling and managing changes to, and versions of, its election-supporting technologies, and document retention.

2.2.10 A list of all manufacturing facilities and the name and contact information for a representative of each facility.

2.3. **Agreements**. To protect the integrity of the certification program and promote quality assurance, manufacturers are required to agree to the following program requirements:

2.3.1. Adhere to all procedural requirements of this manual.

2.3.2. Participate in an initial meeting at the beginning of a new certification effort. These meetings facilitate in-depth discussion of the candidate's election-supporting technology system and allow EAC and VSTL staff to have a live, hands-on demonstration of the election-supporting technology. The duration of this meeting will be mutually agreed upon by all parties.

2.3.3. Represent an election-supporting technology system as certified only when it is authorized by the EAC, marketed, and deployed in an EAC-certified configuration, and is consistent with the procedures and requirements of this manual.

2.3.4. Produce and affix an EAC certification label to all manufacturing units of the certified system, or provide an EAC letter of conformance for the certified system to all clients, identifying that the system must meet the requirements set forth in Chapter 6 of this manual.

2.3.5. Notify the EAC of changes to any previously certified system pursuant to the requirements of this manual (see Chapter 7). Such systems must be submitted for testing and additional certification when required.

2.3.6. Permit an EAC representative to verify the manufacturer's quality control by cooperating with EAC efforts to test and review fielded election-supporting technologies and conduct periodic inspections of facilities consistent with Chapter 10 of this manual.

2.3.7. Cooperate with any EAC inquiries and investigations into a certified system's compliance with the procedural requirements of this manual consistent with Chapter 10.

2.3.8. Report to the Program Director all malfunctions of an election-supporting technology. Initial malfunction reports must identify the location, nature, date, impact, and status of resolution (if any) of the malfunction and be filed within 15 business days of occurrence. Final malfunction reports must be submitted to the EAC after the root cause of the malfunction has been determined and a permanent fix developed.

2.3.9. Report to the Program Director the names of all clients using an election-supporting technology within five business days of delivery of the first manufacturing unit to the jurisdiction.

2.3.10. Certify the entity is not barred or otherwise prohibited by statute, regulation, or ruling from doing business in the United States.

2.4. **Registration Process**. Manufacturers must complete the Manufacturer Registration Application and submit it to the EAC with supporting documents. The Program Director will review the package for completeness before approval.

2.4.1. Application Process. The Manufacturers Registration Application Form compiles information required under Section 2.2 and affirms the manufacturer's agreement to the requirements of Section 2.3.

2.4.1.1 *Application Form*. The applicant must adhere to the following requirements:

- All fields must be completed by the manufacturer.

- All required attachments prescribed by this manual, including the Manufacturer Registration Application Form, must be identified, completed, and forwarded within 20 business days to the EAC.

- The application form must be affixed with the handwritten signature (or a digital representation of the handwritten signature) of the authorized manufacturer's representative.

2.4.1.2 *Availability and Use of the Form*. The Manufacturer Registration Application Form may be accessed at https://www.eac.gov/estep-program/estep-manuals-and-forms. Instructions for completing and submitting the form are included on the website along with contact information regarding questions about the form or the application process.

2.4.2 EAC Review Process.

2.4.2.1 After the application form and required attachments have been submitted, the applicant will receive an acknowledgement that the EAC has received the submission and that the application will be processed.

2.4.2.2 If an incomplete form is submitted, or an attachment is not provided, the EAC will notify the manufacturer and request the omitted information. Registration applications will not be processed until they are deemed complete.

2.4.2.3 Upon receipt of the completed registration form and accompanying documentation, the EAC will review the information for sufficiency. If the EAC requires clarification or additional information, the EAC will contact the manufacturer and request the needed information.

2.4.2.4 Upon determination that an application has been satisfactorily completed, the Program Director will notify the manufacturer that it has been registered.

2.5. **Registered Manufacturers**. After a manufacturer has received notice that it is registered, it is eligible to participate in the program. Manufacturers will be issued a unique, three-letter identification code that is used to identify the manufacturer and its products. Manufacturers are required to keep all registration information up to date. Manufacturers must submit a revised application form to the EAC within 30 days of any changes to the information required on the application form. Manufacturers will remain registered participants in the program during this update process. The EAC will add the manufacturer to the EAC's listing of registered manufacturers that is publicly available at http://www.eac.gov.

2.6. **Suspension of Registration**. Manufacturers are required to establish policies and operate within the program consistent with the procedural requirements presented in this manual. If manufacturers violate the program's requirements by engaging in activities inconsistent with this manual or failing to cooperate with the EAC, their registration may be suspended until such time as the issue is remedied as determined by the Program Director.

2.6.1. Procedures. If a manufacturer violates the requirements of this manual, the Program Director must notify the manufacturer of its violations, give the manufacturer an opportunity to respond and provide recommendations to remedy the violation.

2.6.1.1. *Notice*. Manufacturers will be provided written notice that they have violated the requirements of this manual. The notice will state the violations and the steps required to remedy them. The manufacturer is required to acknowledge the notice within 10 business days and remedy violations within 20 business days.

2.6.1.2. *Manufacturer Action*. The manufacturer is required to either respond within 10 business days to the notice by outlining a plan to remedy the violations by addressing the violation directly and the underlying root cause or demonstrating that there is no violation. The manufacturer's action must be approved by the Program Director to prevent suspension.

2.6.1.3. *Suspension*. If the manufacturer fails to respond within 10 business days, is unable to provide a remedy or response that is acceptable to the Program Director, or refuses to cooperate, the Program Director must issue a notice of suspension. The suspension must be provided in writing and must inform the manufacturer of the path to life the suspension, which includes providing a remedy to the violations.

2.6.2. <u>Effect of Suspension</u>. A suspended manufacturer may not submit election-supporting technology for certification under this program. This prohibition includes a ban on the submission of modifications and changes, including minor changes, to a certified system. A suspension remains in effect until lifted by the Program Director. Suspended manufacturers will have their registration status reflected on <u>http://www.eac.gov</u>. Manufacturers have the right to remedy a noncompliance issue and lift a suspension consistent with EAC guidance. Failure of a manufacturer to follow the requirements of this section may also result in decertification of election-supporting technologies consistent with Chapter 9 of this manual.

2.7. **Laboratory Eligibility**. All test laboratories must be accredited by the EAC and must remain in good standing in order to be eligible to evaluate election-supporting technologies. New laboratories wishing to seek accreditation by the EAC must conform to the requirements and procedures outlined in the ESTEP Accreditation Manual.

Pre-existing VSTLs that have been accredited by the EAC will be permitted to evaluate election-supporting technologies under legacy status. A list of eligible VSTLs can be located at <u>https://www.eac.gov/voting-equipment/voting-system-test-laboratories-vstl</u>.

3. Procedures for Testing and Certification of Emerging Technologies

3.1. **Purpose.** If an election-supporting technology is eligible for a certification under this program but employs technology that is not addressed by the voluntary requirements, the relevant technology will be subjected to full integration testing and tested to ensure that it operates to the applicant's specifications and that proper security risk assessments and quality assurance processes are in place. The Technology Testing Agreement (TTA) process described below is intended to enhance the testing and certification process for election-supporting technologies incorporating new or emerging technology. The remainder of the system must be tested to the applicable voluntary requirements.

3.2. **TTA Program**. The manufacturer must contact the Program Director as early as possible in the design and development process to have a general discussion regarding new or emerging technology in any election-supporting technology product. A formal request for a TTA meeting must be clearly identified as such and submitted to the Program Director. The EAC expects that the submission will be as detailed as design and development allow, but must include the following items:

- Description of the product, highlighting elements involving new technologies, testable requirements, and other testing protocol issues. This description should include:

  - General product description
  - Engineering drawing(s)
  - Product composition/key components/materials

- Device specifications

- Analysis of potential failure modes and threat model/risk analysis

- Outline of the proposed conditions of use

- Summary of instructions for use of the product (voter and poll worker/election official)

- Relevant performance information on the product, especially if routinely used in other industries. This information may include:

  - Published and/or unpublished data
  - Summary of test data
  - Summary of prior user experience

3.3. **TTA Meetings**. EAC and VSTL staff may raise any questions about the product but will focus on test plan development.

At the end of the meeting, the Program Director will summarize the agreements or explain any reasons for tabling the agreements, set the date for any follow-up meeting, and set out action items

determined during the meeting. A designated EAC staff member and manufacturer representative will record attendees and minutes of the meeting. This meeting will also be recorded via Zoom.Gov.

The Program Director will prepare a draft memorandum and circulate it for comment within 10 business days of the meeting. The Program Director will sign the final memorandum and forward it to the applicant and VSTL within five business days of receipt of final comments.

4. Application Process

4.1.   **Overview.** Manufacturers must complete the application process before advancing to testing.

4.2.   **Application Package**. Manufacturers must submit election-supporting technology for testing under this program to be eligible for participation in an ESTEP test campaign, accompanied by an application package. EAC approval is required before testing begins. Any testing occurring after the execution of a contract or agreement for certification testing (not including the Test Readiness Review) between a VSTL and a registered manufacturer is presumed to be testing. The application information includes:

4.2.1.   <u>Manufacturer Information.</u> Manufacturer's organization name and 3-letter identification code. Manufacturers may include manufacturers or state-elected representatives for homegrown systems.

4.2.2.   <u>Technology for Evaluation.</u> Manufacturers must identify the election-supporting technology they are submitting for evaluation. At the time of this manual's release, test campaign options include electronic poll books, voter registration portals and databases, electronic ballot delivery systems, and election night reporting systems.

4.2.3.   <u>Version of Requirements.</u> Identify version of voluntary requirements to be used in election-supporting technology testing and certification.

4.2.4.   <u>System Identification.</u> Provide information on the system's development, name, and version number. Manufacturers must identify whether the system was developed commercially or in-house. Separate identification of each device that is part of the election-supporting technology, including all COTS components, is also required. Components used in conjunction with election-supporting technologies are considered components of the system, not separate devices.

4.2.5.   <u>Technical Documentation.</u> Manufacturers are required to include technical documentation required under this section to supplement information provided in the Application for ESTEP Form.

4.2.5.1. *List of accessibility capabilities.* Detailed explanation of the accessibility capabilities present in the system beyond those required by the voluntary requirements.

4.2.5.2. *Device capacities and limits.* As deemed necessary by the requirements for each election supporting technology, capacities and limitations must be listed.

4.2.5.3. *Coding convention.* As deemed necessary by the requirements, each election-supporting technology component must have a single coding convention selected for every programming language used. The application must include system components, language used, specified coding convention, and source of coding convention.

4.2.5.4. *Functional diagrams.* Diagram(s) that display all components and how the components relate and interact in each configuration.

4.2.5.5. *List of client jurisdictions.* Manufacturers must identify all state and local jurisdictions that currently utilize the system.

4.2.5.6. *Training materials.* Any documentation, or other materials, used to provide training to client jurisdictions on the use of the manufacturer's election-supporting technology, must be included.

4.2.6. <u>Date Submitted.</u> Note the date the application was submitted for EAC approval.

4.2.7. <u>Signature.</u> Affix the signature of the authorized management representative, including printed name and position title, or designation.

4.3. **Submission of the Application Package**. The manufacturer must submit the Application for ESTEP Form and the required additional information to the Program Director. Applications and accompanying documentation must be submitted in PDF or another electronic format as prescribed by the Program Director. Applications must pass all accessibility checks prior to acceptance by the EAC.

4.3.1. <u>Application Process</u>. The applicant must adhere to the following requirements:

- All fields must be completed by the manufacturer.

- All required attachments prescribed by this manual, including the Application for ESTEP Form, must be identified, completed, and forwarded within 20 business days to the EAC.

- The application form must be affixed with the handwritten signature (or a digital representation of the handwritten signature) of the authorized manufacturer's representative.

4.3.2. <u>Availability and Use of the Form</u>. The Application for ESTEP Form may be accessed at https://www.eac.gov/estep-program/estep-manuals-and-forms. Instructions for completing and submitting the form are included on the website along with contact information regarding questions about the form or the application process.

4.4. **EAC Review**. Upon receipt of a manufacturer's application package, the EAC must review the submission for completeness and accuracy. The manufacturer must be notified of acceptance or rejection of the application package within 10 business days of the EAC's receipt of the application. If the application package is incomplete or inaccurate, the EAC must return it to the manufacturer with instructions for resubmission. If the form submitted is acceptable, the manufacturer will be notified and assigned a unique application number.

5. Testing and Technical Review

5.1. **Overview**. This chapter establishes the procedure for submitting an election-supporting technology for VSTL testing and EAC review. After the EAC has assigned a unique application number to the election-supporting technology manufacturer, they will be directed to complete testing with an assigned VSTL. The manufacturer must then direct its designated VSTL to (1) submit an EAC-approved test plan, (2) test an election-supporting technology to the voluntary requirements established by this Program, and (3) submit a test report to the EAC for technical review and approval. As a result of this process and upon review of all campaign reports from the VSTL, the EAC will make a final determination to establish a formal program for certification or best practices.

5.2. **Qualifications of Testing Personnel.** The VSTL must develop a team based on the personnel qualifications and requirements introduced below. All teams must have expertise in 3 distinct disciplines: penetration testing, software testing, and election technology and administration. Failure to comply with these requirements may result in a delay in the testing and certification process.

    5.2.1. *Minimum Education.* Testers must hold a penetration testing-related industry certification.

    5.2.2. *Minimum Experience.* Testers must demonstrate their technical expertise and proficiency in the following categories:

        5.2.2.1. Familiarity with penetration testing methodologies,

        5.2.2.2. Hands-on knowledge of vulnerability scanning, system exploitation, reconnaissance, hardware exploitation, and wireless tools, and

        5.2.2.3. Ability to design and run tests and evaluate and report findings.

5.3. **Test Plan**. Manufacturers must authorize its designated VSTL to submit a test plan directly to the EAC. The test plan must document the strategy and plan for testing each section of the applicable version of the voluntary requirements and is to be used as a key tool to manage the test campaign and to verify that an election-supporting technology or component meets all requirements established by the EAC. The test plan must be written with completeness and clarity that allows all stakeholders to understand the testing that will be conducted and to assess each section of the voluntary requirements.

    5.3.1. <u>Development</u>. A VSTL must develop test plans that use appropriate test protocols, standards, or test suites, and must use all applicable protocols, standards, or test assertions issued by the EAC. Test plans should clearly communicate the scope and requirements of testing, the test strategies, and the resource needs. This information identifies the purpose and boundaries of the test campaign: what will be tested and how it will be tested.

Because future events in any test campaign cannot be predicted and controlled, the initial submission of the test plan is viewed as a baseline that enables periodic updates as events cause the plan to change. The VSTL should update the plan and resubmit as necessary. If the election-supporting technology changes, the test plan must be updated. These test plan changes may require an updated schedule submitted with the revised test plan. The following are examples of instances that would likely require updating the test plan.

- Changes to the manufacturer's application for testing.
- Engineering changes that alter the scope or function of the election-supporting technology.
- Information discovered during testing that changed the strategy on how best to test the election-supporting technology.

For the test plan to be agile, stakeholders need to be able to understand what needs to be done to complete the project. The following general topics must be included:

- A comprehensive scope of evaluation that each requirement or set of requirements is going to be evaluated for compliance, and that all features, interfaces, and characteristics of the individual devices and the system are evaluated to applicable requirements.
- The names and titles of VSTL personnel who will be responsible for each aspect of the test campaign.
- A detailed project schedule including the critical path for project completion.
- The test methods that will be used to validate compliance to the voluntary requirements.

5.3.2.   Required Testing. Test plans must be developed to ensure an election-supporting technology is functional and meets all the voluntary requirements and that test results, and other factual evidence of the testing, are clearly documented. All systems are subject to full testing of all hardware and software requirements.

5.3.3.   Format. VSTLs must issue test plans consistent with the format outlined in Appendix B of this document and any applicable EAC guidance. All submitted documents must pass accessibility checks prior to acceptance by the EAC.

5.3.4.   EAC Approval. All test plans are subject to EAC approval. A test report will not be accepted for technical review unless the associated test plan has been approved.

5.3.4.1. *Review*. All test plans must be reviewed for adequacy by the EAC. The Program Director must determine whether the test plan is acceptable. Unacceptable plans must be returned to the VSTL for further action. The Program Director must approve acceptable plans. Although manufacturers may direct VSTLs to begin testing before approval of a test plan, the manufacturer bears the full risk that the test plan (and any tests performed) may be deemed unacceptable.

5.3.4.2. *Rejected Plans*. If a test plan is rejected, the Program Director must return the submission to the manufacturer's identified VSTL for additional action. A written notice of rejection must be sent to the VSTL and manufacturers and must include a description of the deficiencies identified and steps required to remedy the test plan. Rejected test plans may be resubmitted for review after remedial action is taken.

5.4. **Test Readiness Review**. The Test Readiness Review (TRR) is the mechanism used by the EAC to ensure that test and evaluation resources are not committed to an election-supporting technology that is not ready for testing. The TRR determines if the submitted election-supporting technology and documentation are ready to enter certification testing. The TRR must be completed by the VSTL, and the subsequent test readiness acknowledgement must be received by the EAC prior to the initiation of any certification testing. To assess the readiness of an election-supporting technology for certification testing, the VSTL must review:

5.4.1. System Technical Data Package (TDP). The TDP must be reviewed to ensure all elements required by the voluntary requirements are present.

5.4.2. System Components. The VSTL must review the submitted election-supporting technology to ensure all components required to configure the election-supporting technology as defined in the system TDP are delivered to the VSTL and appear to be operational and in good working order. System component information must match the application submitted. All components submitted for testing must be equivalent to the final manufacturing model of the election-supporting technology in fit, form, and function. Any component not available at the time of this review must be delivered to the VSTL by the manufacturer within 20 business days of the initial TRR or testing of the system must be halted and the EAC notified that the system is not ready for testing.

5.4.2.1. *Preliminary Source Code Review*. The VSTL must conduct a preliminary review of no less than 1% of the total lines of code of every software package or product submitted prior to, or during, testing in order to ensure that the code is mature and does not contain any systematic non-conformities.

5.4.2.2. *Summary of COTS Components*. This summary should outline COTS components of the election-supporting technology and must be updated with each test campaign.

5.4.3. Test Readiness Notification. Upon completion of the TRR, the VSTL must submit a statement to the EAC confirming that the election-supporting technology completed the TRR and the VSTL determined that the system is ready for certification testing to the applicable voluntary requirements.

5.4.4. Test Readiness Acknowledgement. Upon receipt of the test readiness notification from the VSTL, the EAC must issue a written acknowledgment within three business days of receipt stating that the VSTL and manufacturers may commence certification testing. Systems not passing the TRR must be remanded to the manufacturer for additional work as noted in the

test readiness notification.

5.5. **Penetration Testing**. The EAC recognizes the need for robust security testing. Penetration testing is used to help assess the security posture of election-supporting technologies.

    5.5.1. <u>Purpose.</u> The purpose of the EAC's penetration testing efforts is to identify architecture, design and implementation flaws that may not be detected using the conformance testing outlined in the voluntary requirements. This includes:

- Identifying systemic functional, reliability, and security flaws that can be exploited to compromise data security, slow or cease voter check-in processes, or cause an unacceptable denial of service; and

- Identifying malicious software or firmware that may have been introduced to change voter registration data, to provide erroneous reports, or to deny services to voters.

- Ensuring the security testing performed is utilizing a standardized security analysis methodology approved by the EAC.

- Recognizing that cybersecurity is a process that requires regular review to ensure new flaws do not surface or are newly introduced. Regular assessment can leverage the minor change process for software updates and patches.

    5.5.2. <u>Prerequisites.</u> Penetration testing can be resource intensive, and the penetration test must not be open ended nor introduce unacceptable delays into the certification process. To avoid any delays, the manufacturer must ensure that the following minimum requirements have been met:

        5.5.2.1. *Availability of Resources.* The testers must have election-supporting technology hardware and documentation available.

        5.5.2.2. *Configuration.* The election-supporting technology must be configured exactly how it is to be used in elections according to the manufacturer's documentation. The impact of accidental misconfiguration is outside the scope of penetration testing. This should be analyzed as part of security configuration and vulnerability analysis as mandated by voluntary requirements for known vulnerabilities secure configuration and hardening.

    5.5.3. <u>Procedure.</u> The penetration testing report must be submitted by the manufacturer to the EAC as part of the TRR. In general, penetration testing will occur in two phases:

- Phase I – Pre-Testing Assessment
- Phase II – Penetration Testing

5.5.3.1. *Phase I – Pre-Testing Assessment Process.* The purpose of the pre-testing assessment is to allow VSTLs to develop a detailed vulnerability and threat analysis plan that will be used to guide future testing by prioritizing tasks to test in a resource-efficient manner. The VSTL must coordinate the penetration testing process.

- The manufacturer must submit relevant system hardware, software, and technical documentation to the VSTL and notify the Program Director of its intention to have the VSTL perform penetration testing.

- The VSTL develops a vulnerability and threat analysis document based on a standard/methodology containing detailed vulnerability and threat information on potential ways to subvert the system's security. It is recommended that the VSTL use the NIST SP 800-30 "Guide for Conducting Risk Assessments." This must be submitted to the EAC for approval.

- The Program Director must approve or reject the vulnerability and threat analysis.

- Upon approval, the VSTL will move into Phase II of testing.

5.5.3.2. *Phase II – Penetration Testing Process.* The purpose of this phase is to conduct penetration testing using the vulnerability and threat analysis developed and approved during Phase I. Election-supporting technologies must be tested in an environment simulating real-world usage, according to the manufacturer's documentation, and include physical security seals, system hardening, and other procedures documented by the manufacturer. The VSTL must conduct penetration testing and submit the report to the EAC for approval.

- The VSTL must conduct penetration testing guided by the vulnerability and threat analysis.

- The VSTL must submit the security audit report to the manufacturer and the Program Director. The report must contain vulnerability information prioritized by likelihood and impact.

- The Program Director approves or rejects the report based in part on the VSTL's engineering judgment. The manufacturer must submit an attestation that all critical vulnerabilities have been addressed with the final certification testing report, to be made available on http://www.eac.gov.

5.6. **Trusted Build**. As deemed necessary by the requirements for each election supporting technology, each manufacturer may need to perform the trusted build process for their technology. A software build is the process whereby source code is converted to machine-readable binary instructions (executable code) for the computer. A trusted build is a build performed with adequate security

measures implemented to give confidence that the executable code is a verifiable and faithful representation of the source code. The primary function of a trusted build is to create a chain of evidence that allows stakeholders to have an approved model to use for verification of an election-supporting technology. Specifically, the build must:

- Demonstrate that the software was built as described in the TDP.

- Show that the tested and approved source code was used to build the executable code used on the system.

- Demonstrate that no elements other than those included in the TDP were introduced in the software build. The manufacturer or source from which each COTS product was procured must be included in the TDP.

- Document the configuration of the system certified.

- Demonstrate that all COTS products are unmodified.

5.6.1. Trusted Build Procedure. A trusted build is a three-step process: (1) the build environment is constructed, (2) the executable code and installation disks are created, (3) the VSTL verifies that the trusted build was created and functions properly. A copy of the trusted build must be submitted to the EAC. Before creating the trusted build, the VSTL must complete the source code review of the software delivered from the manufacturer for compliance with the voluntary requirements and must produce and record cryptographic hashes of all source code modules. Hashes must use a current FIPS-validated cryptographic module. After the trusted build is completed, there is no other "final" build.

    5.6.1.1. *Constructing the Build Environment.* The VSTL must construct the build in an environment controlled by the VSTL that allows manufacturer observation, as follows:

    - The device that holds the build environment must be completely erased, in accordance with Department of Defense or NIST-approved methods.

    - The VSTL must ensure a complete erasure of the device.

    - The VSTL must construct the build environment.

    - After construction of the build environment, the VSTL must produce and record a file signature of the build environment.

    - A clone of the build environment computer's main storage media must be created. File signatures must be created by the VSTL for verification.

5.6.1.2. *Creating the Executable Code and Installation Disks.* After successful source code review the VSTL must:

- Check the file signatures of the source code modules and build environment to ensure they are unchanged from their original form.

- Load the source code onto the build environment and produce and record the file signature of the resulting combination.

- Produce the executable code and produce and record file signatures of the executable code. A clone of the computer's main storage on which the executable code was created must be created, with the file signatures verified by the VSTL.

- Create installation disk(s) from the executable code and produce and record file signatures of the installation disk(s).

5.6.1.3. *Verification of the Created Media.* Upon completion of all the tasks outlined above, the VSTL must perform the following tasks:

- Install the executable code onto the system submitted for testing and certification before the completion of system testing.

- Produce and record file signatures of each election-supporting technology file resident on each device.

- Verify that all media to be included in the Trusted Build and submitted to the EAC functions properly.

5.7. **Testing**. During testing, VSTLs must report any changes to election-supporting technology or an approved test plan, and all test failures or anomalies directly to the EAC.

5.7.1. <u>Changes</u>. Any changes to election-supporting technology initiated because of the testing process, require submission of an updated implementation statement, functional diagram, and system overview document, and potentially, an updated test plan. Test plans must be updated whenever a change to an election-supporting technology requires deviation from the test plan originally approved by the EAC. Changes requiring alteration or deviation from the originally approved test plan must be submitted to the EAC for approval before the completion of testing.

5.7.2. <u>Test Anomalies or Failures</u>. VSTLs must ensure all anomalies or failures are addressed and resolved before testing is completed. All test failures and anomalies, as well as the actions taken to resolve such failures and anomalies, must be documented in an appendix to the test report. These matters must be reported in a format that identifies the failure or anomaly, the applicable voluntary requirements, and a description of how the failure or anomaly was resolved. The manufacturer must conduct a root cause analysis for each

failure and anomaly following the format provided by the EAC. This analysis must be provided to the VSTL and the EAC prior to the beginning of the test report phase of the test campaign.

5.7.3. <u>Deficiency Criteria.</u>

5.7.3.1. *Deficiency Categories*. There are three categories in which a system might be considered deficient. These are as follows:

- *Major Deficiencies.* A major deficiency adversely effects the accuracy, reliability, usability, security, or accessibility of an election-supporting technology. Examples of major deficiencies are capability failures or consistent hardware failures. The election-supporting technology must be returned to a manufacturer if one or more major deficiencies are discovered during a test campaign for root cause analysis, or if the same deficiency occurs after root cause analysis and remediation.

- *Minor Deficiencies.* A minor deficiency does not adversely affect the accuracy, reliability, usability, security, or accessibility of an election-supporting technology. Examples of a minor deficiency include typographical errors, documentation deficiencies, or source code coding convention deficiencies. The system must be returned to a manufacturer if the VSTL or Program Director determine that multiple minor deficiencies are causing significant delays in the test campaign.

- *Unique Deficiencies*. Two or more instances of a deficiency are the same unique deficiency if the outputs of each instance are identical and the same, specific remedy cures all instances of the deficiency. If a second deficiency is discovered that results in the same output as the first deficiency, but requires a different remedy to cure it, it is considered a second unique deficiency. Two similar deficiencies that require a modification within different areas of the source code to remedy the deficiency are to be considered separate and unique deficiencies.

5.7.3.2. *Documenting Deficiencies*. The VSTL must make the initial assignment for each deficiency into one of the categories described above. The VSTL must ensure that each deficiency is described and documented accurately to ensure the correct categorization of each deficiency. The EAC must review the categorizations of the VSTL and make the final determinations as to the categorization of deficiencies. All deficiencies must be corrected before an election-supporting technology is approved for certification.

5.7.3.3. *Criteria for Further Evaluation.* Election supporting technologies must be returned to a manufacturer for further readiness review and/or QA testing if any of the following conditions occur:

- Testing continues for more than 18 months without a test report being issued.

- Inactivity that exceeds 90 calendar days, as a result of a manufacturer's decision or lack of action, which hinders the progression of the test campaign.

- A significant deficiency caused by one or more major architectural flaws, requiring significant redesign to adequately eliminate the deficiency. Two factors will be considered by the EAC in determining the significance of a deficiency:

  - The consequences of the deficiency with respect to proper election-supporting technology function, and

  - The extent of redesign necessary to fully remedy the deficiency. A full remedy goes beyond a superficial response to the symptoms, which leaves an underlying architectural flaw unaddressed, creating the potential for other manifestations of the deficiency to reoccur. A full remedy addresses the root cause of the deficiency and removes the cause of the problem that created the deficiency.

5.7.3.4. *Resolving Deficiencies*. When an election-supporting technology is returned to a manufacturer for reasons described in this section, the manufacturer must review its quality process and perform an analysis of how the identified deficiencies passed through its quality system. The manufacturer must perform a quality review to determine the extent of the QA issues and document the appropriate measures that are implemented to ensure that similar deficiencies do not occur again. Specifically, the manufacturer must detail the specific changes made to its quality process and then the election-supporting technology to remedy the failures in the design and the quality process. All such documentation must be submitted to the EAC for review. The manufacturer may re-apply for certification only after the EAC makes the determination that the QA analysis/review and the measures put in place, in both the quality system and the election-supporting technology design, are deemed adequate.

5.8. **Test Report**. VSTLs must submit test reports to the EAC after the election-supporting technology has been tested and all tests identified in the test plan have been successfully performed.

5.8.1. Submission. The test reports must be submitted to the Program Director who reviews it for completeness. Any reports showing incomplete or unsuccessful testing must be returned to the VSTL for action and resubmission. Notice of return must be sent to the manufacturer. Test reports must be submitted in PDF or other electronic formats as determined by the Program Director. Test reports submitted must pass all accessibility checks.

5.8.2. Format. VSTLs must submit reports consistent with the voluntary requirements and in the format outlined in Appendix C of this manual. All information provided in the test report must be provided in a clear, complete, and unambiguous manner, so that a wide range of

readers and users of the document can understand the evaluation supporting a system's certification. In addition, the test report must show that all voluntary requirements have been tested and successfully completed by the election-supporting technology as a prerequisite to certification. Documentation of test cases executed during the testing must be attached to the test report.

5.8.3. <u>Technical Review</u>. A technical review of the test plan, test cases, test report, and any other technical documentation must be conducted by the EAC, which may require additional information from the VSTL or manufacturer, if necessary to complete the review. Program staff must submit findings to the Program Director, providing an assessment of the completeness and adequacy of the testing as documented in the test report.

5.8.4. <u>Program Director's Recommendation</u>. The Program Director must review the report and either provide a written approval of the test report to the manufacturer and VSTL or refer the report back to the VSTL for additional, specified action and resubmission.

6. Grant of Certification

6.1 **Overview**. The grant of certification is the formal process through which the EAC acknowledges that an election-supporting technology has successfully completed conformance testing to a current version of the voluntary certification requirements. The granting of certification begins with the approval of the test report. The election-supporting technology will be certified after the manufacturer confirms that the final version of the software that was tested has been subject to a trusted build, placed in an EAC-approved repository, and can be verified using the manufacturer's system identification tools. The manufacturer must provide the EAC documentation demonstrating compliance with these requirements.

6.2 **Pre-certification approval.** The Program Director must inform the manufacturer of the steps that must be taken to receive a certification including providing the manufacturer with specific instructions for confirming and documenting that the final certified version of the software meets the requirements for depositing software in an approved repository and creating and making available system verification tools.

6.3 **Depositing Software in the EAC Repository**. Before final certification is granted, the VSTL must deliver the following elements into the EAC repository:

- Description of items located on the deposit media, including a description of items to be deposited. The description must include utilities or third-party applications used to create the deposit such as OS utilities or third-party software, and encryption information required for passwords and/or crypto-keys or software programs required to access the deposited materials.
- Source code used for the trusted build and its file signatures.
- The final TDP of the election-supporting technology submitted for testing including all product bills of material, assembly drawings, and schematics for the version being certified.
- A detailed description of the Build Environment including setup and configuration, configuration settings for all compilers and third-party components, and whether the build process requires source code to be loaded to a specific location.
- Build control files and/or scripts that control the build process.
- Executable code produced by the trusted build and the file signatures of all files.
- Installation device(s) and the file signatures of the installation devices.
- Build instructions on how to compile the escrow deposit and build executable code. (Include hardware descriptions and OS requirements, particularly custom settings).
- Names of all required applications necessary to compile and build executable code, objects, dynamic libraries, etc.
- An installation copy of the certified version of the EMS for the election-supporting technology.
- The computer on which the trusted build was created must have applicable storage media that contained the trusted build, removed, and submitted to the EAC. The EAC may receive Virtual Machines (appliances) from the VSTL for the trusted build. Trusted builds must include this virtual machine and any related items, so that the system can be

constructed or restored on another machine and be in the Open Virtualization Format.

- The manufacturer must provide system identification tools through which a fielded election-supporting technology may be identified and demonstrated to be unmodified from the system that was certified. The purpose of this requirement is to make such tools available to federal, state, and local officials to identify and verify that the equipment used in elections is unmodified from its certified version. The EAC may review the system identification tools developed by the manufacturers to ensure compliance. VSTLs must test system identification tools during the test campaign to make sure they function properly and as intended. System identification tools include the following examples:
  - Hardware is commonly identified by a model number and revision number on the unit, its printed wiring boards (PWBs), and major subunits. Typically, hardware is verified as unmodified by providing detailed photographs of the PWBs and internal construction of the unit. These images may be used to compare to the unit being verified.
  - Software operating on a host computer will typically be verified by providing self-booting removable media or a similar device that verifies the file signatures of the election-supporting technologies application files and the signatures of all nonvolatile files the application files access during their operation. Note that the creation of such a CD requires having a file map of all nonvolatile files used by the election-supporting technology. Such a tool must be provided for verification using the file signatures of the original executable files provided for testing. If during the certification process modifications are made and new executable files are created, then the tool must be updated to reflect the file signatures of the final files to be distributed for use. For software operating on devices in which a self-booting CD or similar device cannot be used, a procedure must be provided to allow identification and verification of the software that is being used on the device.

6.4 **Documentation**. Manufacturers must provide documentation to the Program Director verifying the trusted build has been performed, software has been deposited in an approved repository, and system identification tools are available to election officials. The manufacturers must submit a letter, signed by both its management representative and a VSTL official, stating (under 18 U.S.C. § 1001) that it has (1) performed a trusted build, (2) deposited software, and (3) created and made available system identification tools, all consistent with the requirements of this manual. This letter must also include a copy and description of the system identification tool.

6.5 **Final Decision**. Upon receipt of documentation demonstrating successful completion of the requirements and recommendation of the Program Director, the EAC must issue a final decision granting certification and providing the manufacturer with a certification number and Certificate of Conformance.

6.6 **Certification Document**. The Certificate of Conformance, which includes the scope of certification, serves as evidence that a particular election-supporting technology is certified to a particular version of the voluntary certification requirements and applies only to the specific election-supporting technology configuration(s) identified, submitted, and evaluated. Any modification to the system not authorized by the EAC voids the certificate. The certificate must include the election-supporting technology name, the specific model or version of the product

tested, the name of the VSTL that conducted the testing, identification of the voluntary certification requirements version to which the system was tested, the EAC certification number for the product, and the signature of the Decision Authority. The certificate must also identify each of the various configurations of the election-supporting technology's components that may be represented as certified.

6.7   **Certification Number and Version Control**. Each system certified by the EAC receives a certification number unique to the system that will remain with the system until such time as the system is decertified, sufficiently modified, or tested and certified to newer standards. When a previously certified system is issued a new certification number, the manufacturer is required to change the system's name or version number unless the same system is being certified to new voluntary certification requirements.

6.8   **Publication of EAC Certification**. The EAC must publish and maintain a list of all certified election-supporting technologies, including copies of all Certificates of Conformance, supporting test reports, and election-supporting technology and manufacturer information at http://www.eac.gov. Such information must be posted immediately following the manufacturer's receipt of the Final Decision. Manufacturers with certified election-supporting technologies are responsible for ensuring that each system it produces is properly labeled as certified.

6.9   **Representation of EAC Certification**. Manufacturers may not represent or imply an election-supporting technology is EAC-certified unless it has received a Certificate of Conformance for the system. Statements regarding EAC certification in brochures, on websites, on displays, and in advertising/sales literature must be made solely in reference to specific systems. Any action by a manufacturer to suggest EAC endorsement of its product or organization is strictly prohibited and may result in a manufacturer's suspension or other action pursuant to Federal civil and criminal law. Manufacturers must provide a copy of the Certificate and Scope of Certification document (found at http://www.eac.gov) to any jurisdiction purchasing an EAC-certified system.

6.10   **Mark of Certification Requirements**. Manufacturers must post a mark of certification on all EAC-certified election-supporting technologies produced. This mark must be securely attached to the system before sale, lease, or release to third parties and made using an EAC-mandated template. These templates identify the version of the voluntary certification requirements to which the system is certified. Use of this template is mandatory and the EAC will provide the mark as a template in .jpg, .pdf, and .tif formats. Manufacturers who need access to the mark pursuant to labeling an EAC-certified election supporting technologies should send a formal request, via email or letter, to the Program Director. The request must include the specific election-supporting technology and version number(s), indication of where the mark will be displayed on the election-supporting technology, and specification of the format in which the mark will be reproduced.

- The certification of individual components or modifications must be independently represented by a mark of certification. In the event a system has components or modifications tested to various versions of the voluntary certification requirements, the system must bear only the mark of the voluntary certification requirements to which the system as a whole was tested and certified, which will be the oldest voluntary

certification requirements version to which any of its components are certified.

- The mark must be placed on the outside of a unit of an election-supporting technology in a place readily visible to election officials. The mark need not be affixed to each of the election-supporting technology's components.
- All labels bearing the mark must be designed and applied to election-supporting technologies so that the labels will remain in place and be clear and legible during the customary conditions of distribution, storage, and routine testing and maintenance. The materials used for the label, printing, and adhesives must be reasonably expected to last the normal and projected lifespan of the election-supporting technology. If using an adhesive-type label for the mark, the label stock material must be such that the label cannot be removed intact and reapplied. The label must also be designed to resist the effects of cleaning agents specified by the manufacturers. The mark must remain clear and legible after the use of any recommended cleaning agents as specified by the manufacturers and adhesive labels, if used, must not have become loose or curled at the edges. If a mark has become degraded to the effect that it is illegible, it must be replaced with an exact copy.
- If the EAC determines an election-supporting technology is not in compliance with the voluntary certification requirements, and the system has already been sold or otherwise distributed bearing the mark, the EAC must provide written notice to the manufacturer. If the manufacturer fails to take corrective action within 10 business days of receipt of such notice, the EAC has the right to announce publicly, and to directly inform jurisdictions that use the system, that the election-supporting technology may no longer comply with its original certification and may choose to initiate decertification actions as outlined in Chapter 9 of this manual, and/or suspension of manufacturers registration as outlined in Chapter 9 of this manual. Corrective action may include modification of the election-supporting technology to bring it into compliance with the voluntary certification requirements, or removal of the mark from the product.

6.11 **Information to Election Officials Purchasing election-supporting technologies.** The instruction manual (whether in print or electronic) for a certified election-supporting technology must warn jurisdictions that any changes or modifications to the system not tested and certified by the EAC voids the EAC certification.

7. Changes to EAC-Certified Systems

7.1. **Purpose**. A previously certified election-supporting technology requires EAC review to remain eligible for certification when a change is made. Changes include minor changes and modifications. In emergency cases, a waiver may be granted to election-supporting technology manufacturers making changes within a pre-election timeline.

7.2. **Minor Changes**.

    7.2.1.   <u>Minor Change – Definition.</u> A minor change is a change to a certified election-supporting technology's hardware, software, technical data package (TDP), or data, the nature of which does not alter the system's reliability, functionality, capability, or operation. A change is not considered minor if it has reasonable and identifiable potential to impact the system's performance and compliance with the applicable voluntary certification requirements.

        7.2.1.1. *General Characteristics*. Minor software changes should have these characteristics:

- update a discrete component and do not impact overall functionality,
- do not affect the accuracy of the component or system,
- do not negatively impact the functionality, performance, accessibility, usability, safety, or security of a component or system,
- do not alter the overall configuration of the certified system, and
- can be reviewed and/or tested quickly (< 100 hours)

        7.2.1.2. *Examples.* Minor changes may include the following:

- *Security Updates.* This involves software patches or hardware mitigations to address known security vulnerabilities and exploits. This may include code authored by election supporting technology manufacturers.
- *Bug Fixes*. This involves 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.
- *COTS Replacements*. This involves the 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 Election Supporting Technology Evaluation Program Director.

    7.2.2.   <u>Minor Change – Procedure</u>. Manufacturers who wish to implement a proposed minor change must submit it for EAC approval. A proposed minor change may not be implemented until it has been approved in writing by the EAC.

7.2.2.1. *Document Submission*. Manufacturers must submit any proposed minor change to the EAC for review and endorsement, providing:

- a detailed description of the change,
- a description of the facts giving rise to or necessitating the change,
- the basis for its determination that the change does not alter the system's reliability, functionality, or operation,
- upon request, a sample election-supporting technology at issue or any relevant technical information needed to make the determination,
- documentation of any potential impact to election officials currently using the system and any required notifications to those officials,
- a description of how this change impacts any relevant system documentation, and
- any other information the EAC needs to make a determination.

7.2.2.2. *EAC Review*. The EAC must review the proposed minor change and make an independent determination on if the change meets the minor change definition or requires the election-supporting technology to undergo additional testing as a modification.

- EAC must endorse change as minor if it finds it to be a minor change.
- EAC must reclassify if it finds change to be modification.
- EAC returns rejected changes to manufacturers for resubmission.

7.2.2.3. *EAC Action*. EAC must review all proposed minor changes. EAC has sole authority to determine whether any change constitutes a minor change. The EAC must inform the manufacturers and VSTL of its determination in writing.

- If the EAC approves the change as a minor change, it must provide written notice to the manufacturers and VSTL. The EAC must track and maintain copies of all approved minor changes.
- If the EAC determines that a proposed minor change cannot be approved, it must inform the VSTL and manufacturers of its decision. The proposed change is considered a modification and requires testing and certification consistent with this manual. Minor changes cannot be made to election-supporting technologies currently undergoing testing; these changes are merely adjustments to an uncertified system.

7.3. **Modifications**.

7.3.1. <u>Modification - Definition</u>. A modification is any change to a previously EAC-certified election-supporting technology's hardware, software, or firmware that is not a minor change and does not add or remove components of the system. Any modification to an election-supporting technology requires testing and review by the EAC according to the requirements listed in Chapter 5 of this manual.

7.3.2. <u>Modification Application Procedure</u>. In addition to the requirement set forth in Chapter 4, an application for modification must include:

- Modified system components and component version numbers
- Detailed description of the change(s)
- Listing of all TDP documents by the change
- Usability impact
- Functional diagram(s) that display all components and how the components relate and interact in each configuration if impacted by modification

7.3.3. <u>Modification Testing Procedure.</u> After manufacturers submit a modification application, a test plan must be created and submitted to the EAC for review. Any modification is subject to full testing of the modifications (delta testing) and those systems or subsystems altered or impacted by the modification (regression testing). The system is also subject to system integration testing to ensure overall functionality. Once testing is completed, a test report must be generated by the VSTL and submitted to the EAC for approval.

7.3.4. <u>EAC Approval</u>. If the EAC approves the change as a modification, it must provide written notice to the manufacturers and VSTL and generate a Certificate of Conformance. The EAC must track and maintain copies of all approved modifications.

    7.3.4.1. *Effect of EAC Approval*. EAC approval of a modification permits the manufacturers to implement the change. Fielding an unapproved change is a basis for system decertification and suspension of manufacturer registration.

7.3.5. <u>EAC Denial</u>. If the EAC does not approve a modification, it must inform the VSTL and manufacturers. The Denial of Certification appeals process would then apply.

7.4. **Provisional, Pre-Election Emergency Modification**. This process is to be used only for emergency situations and only when there is a clear and compelling need for temporary relief until the regular certification process can be followed.

7.4.1. <u>Purpose</u>. This section allows manufacturers to modify election-supporting technologies in emergency situations immediately before an election when the modification is required without enough time to complete the full certification process prior to the first day of voting. In such situations, the EAC may issue a waiver authorizing the modification without testing and certification. The modification must be tested after the election.

7.4.2. <u>General Requirements</u>. A request for an emergency modification waiver must be made by a manufacturer only in conjunction with the state election official whose jurisdiction(s) would be adversely affected if the requested modification were not implemented before the first day of voting. Requests must be submitted at least five business days before the first day of voting. To receive a waiver, a manufacturer must demonstrate the following.

- The modification is functionally or legally required by state or local law;
- The election-supporting technology to be modified has previously been certified by the EAC.
- The procedural requirements in this manual for modification cannot be completed at least 60 days before the pending federal election.
- The manufacturers must provide an attestation stating that the modification properly functions as designed, is suitably integrated with the system, and does not negatively affect system reliability, functionality, or accuracy.
- The manufacturer (through a VSTL) has completed as much of the evaluation testing as possible for the modification and has provided the results to the EAC.
- The emergency modification is required and supported by a state's chief election official seeking to field the election-supporting technology in an impending federal election.

7.4.3. <u>Request for Waiver</u>. A manufacturers' request for waiver must be made in writing to the Decision Authority and must include the following elements:

- A signed statement providing sufficient description, background, information, documentation, and other evidence necessary to demonstrate that the request for a waiver meets each of the requirements stated in Section 5.4.2.
- A signed statement from a state's chief election official requiring the emergency modification. This signed statement must identify the pending election creating the emergency situation and attest that (1) the modification is required to field the system, (2) state law (citation) requires EAC action to field the system in an election, and (3) normal timelines required under the program cannot be met.
- A signed statement from a VSTL stating there is insufficient time to perform necessary testing and complete the certification process. The statement must also state what testing the VSTL has performed on the modification to date, provide the results of such tests, and state the schedule for the completion of testing.
- A detailed description of the modification, the need for the modification, how it was developed, how it addresses the need for which it was designed, its impact on the election-supporting technology, and how the modification will be fielded or implemented in a timely manner consistent with the manufacturers' quality control program.
- All documentation of tests performed on the modification by the manufacturers, a laboratory, or other third party.
- A written agreement signed by the manufacturers to do the following:
    - Submit for testing and certification. Consistent with Chapter 5 of this manual, any election-supporting technology receiving a waiver under this section that has not already been submitted. This action must be taken immediately.
    - Abstain from representing the modified system as EAC-certified. The modified system has not been certified; rather, the originally certified system has received a waiver providing the manufacturers a temporary exemption allowing its modification. States must determine if this meets state and local law.

- Submit a report to the EAC regarding the performance of the modified election-supporting technologies within two months of the federal election that served as the basis for the waiver. This report must, at a minimum, identify and describe any performance failures, technical failures, security failures, and/or accuracy problems.

7.4.4. <u>EAC Review</u>. The EAC must review all waiver requests submitted in a timely manner and make determinations regarding the requests. Incomplete requests will be returned for resubmission with a written notification regarding its deficiencies.

7.4.5. <u>Letter of Approval</u>. If the EAC approves the waiver, the EAC must issue a letter granting the temporary waiver within five business days of receiving a complete request.

7.4.6. <u>Effect of Waiver</u>. An EAC waiver for an emergency modification is not an EAC certification of the modification. Waivers under this program grant manufacturers leave to only temporarily amend previously certified systems without testing and certification for the specific election noted in the request. Without such a waiver, such action would ordinarily result in decertification of the modified system (See Chapter 9). Systems receiving a waiver must satisfy any state requirement that a system be nationally or federally certified.

    7.4.6.1. All waivers expire sixty days after the election for which the waiver was granted.

    7.4.6.2. Any system granted a waiver must be submitted for testing as soon as possible.

    7.4.6.3. The grant of a waiver does not predispose the modification to being certified.

7.4.7. <u>Denial of Request for Waiver</u>. A request for waiver may be denied by the EAC if the request does not meet the requirements, fails to follow the procedure, or otherwise fails to sufficiently support a conclusion that the modification is needed, functions properly, and is in the public interest. A denial of a request for an emergency modification by the EAC is final and not subject to appeal. Manufacturers may submit for certification, consistent with Chapter 5 of this manual, modifications for which emergency waivers were denied.

7.4.8. <u>Publication Notice of Waiver</u>. The EAC must post relevant information relating to the temporary grant of an emergency waiver on http://www.eac.gov including information concerning the limited nature and effect of the waiver. This information will be removed upon the waiver's expiration.

8. Denial of Certification

8.1. **Overview**. When the Decision Authority issues an initial decision denying certification, the manufacturers may request an opportunity to cure the defects identified by the Decision Authority. In addition, the manufacturers may request that the Decision Authority reconsider the initial decision after the manufacturers has had the opportunity to review the record and submit supporting written materials, data, and the rationale for its position. Finally, in the event reconsideration is denied, the manufacturers may appeal the decision to the Appeal Authority as described in section 8.11.

8.2. **Applicability**. This chapter applies when the Decision Authority makes an initial decision to deny election-supporting technology certification, including for a modification, based on the materials and recommendation provided by the Program Director.

8.3. **Form of Decisions**. All agency determinations must be made in writing.

8.4. **Effect of Denial of Certification**. If an application for certification is denied, the election-supporting technology will not be reviewed again by the EAC for certification unless the manufacturer alters the system, retests it, and submits a new application for system certification.

8.5. **Record Retention**. The Program Director must maintain all documents related to a denial of certification. Such documents constitute the procedural and substantive record of the decision-making process. Records may include the following:

- The Program Director's report and recommendation to the Decision Authority.
- The Decision Authority's final decision.
- Any materials gathered by the Decision Authority that served as a basis for a certification determination.
- All relevant and allowable materials submitted by the manufacturers upon request for reconsideration or appeal.

8.6. **Initial Decision**. The Decision Authority must make and issue a written decision for election-supporting technologies submitted for certification. When such decision results in a denial of certification, the decision is considered preliminary and referred to as an initial decision. Initial decisions must be in writing and contain the Decision Authority's basis and explanation for the decision and notice of the manufacturers' rights in the denial of certification process.

8.6.1. <u>Basis and Explanation</u>. The initial decision of the Decision Authority must clearly state the agency's decision on certification, state the actions the manufacturers must take to cure all defects in the election-supporting technology and obtain a certification, and explain the basis for the decision, including: the relevant facts, the applicable voluntary certification requirements, the relevant analysis in the Program Director's recommendation, and the reasoning behind the decision.

8.6.2. <u>Manufacturers' Rights</u>. The written initial decision must also inform the manufacturers of its procedural rights under the certification program:

- The manufacturers will be informed of its right to request a timely reconsideration (see Section 8.9). Such a request must be made within 10 business days of the manufacturer's receipt of the initial decision.
- The right to request a copy or have access to the information that served as the basis of the initial decision.
- The right to cure system defects prior to the final decision (see Section 8.8). A manufacturer must request an opportunity to cure within 10 business days of receipt of the initial decision.

8.7. **No Manufacturer Action on Initial Decision**. If a manufacturer takes no action (by failing to request an opportunity to cure or reconsideration) within 10 business days of receipt of the initial decision, the initial decision will become the agency's final decision on certification. In such cases, the manufacturer is determined to have foregone its right to reconsideration, cure, and appeal. The certification application will be denied.

8.8. **Opportunity to Cure**. Within 10 business days of receiving the EAC's final decision on certification, a manufacturer may request an opportunity to cure the defects identified in the EAC's initial decision. If the request is approved, a compliance plan must be created, approved, and followed. If this cure process is successfully completed, an election-supporting technology denied certification in an initial decision may receive a certification without resubmission.

8.8.1. <u>EAC Action on Request</u>. The Decision Authority must review the request and notify the manufacturer in writing if the request to cure is approved or denied. The Decision Authority will deny a request to cure only if the proposed plan to cure is inadequate or does not present a viable way to remedy the identified defects. If the manufacturer's request to cure is denied, it will have 10 business days from the date it received such notice to request reconsideration of the initial decision.

8.8.2. <u>Manufacturer's Compliance Plan</u>. Upon approval of the manufacturer's request for an opportunity to cure, the manufacturer must submit a compliance plan to the Decision Authority for approval. This compliance plan must set forth steps to be taken to cure all identified defects. It must include the proposed changes to the system, updated technical information (as required by Section 3.3), and a new test plan created and submitted directly to the EAC by the VSTL. The plan must provide for the testing of the amended system and submission of a test report by the VSTL to the EAC for approval. It must provide an estimated date for receipt of this test report and include a schedule of periodic VSTL progress reports to the Program Director.

8.8.3. <u>EAC Action on the Compliance Plan</u>. The Decision Authority must review and approve the compliance plan. The Decision Authority may require the manufacturer to provide additional information and modify the plan. If the manufacturer is unable or unwilling to provide a compliance plan acceptable to the Decision Authority, the Decision Authority will provide written notice terminating the cure process. The manufacturer will have 10

business days from the date it receives such notice to request reconsideration of the initial decision.

8.8.4. <u>Compliance Plan Test Report</u>. The VSTL must submit the test report created pursuant to its EAC-approved compliance plan. The EAC must review the test report, along with the original test report and other materials originally provided, consistent with the procedures laid out in Chapter 5.

8.8.5. <u>EAC Decision on the System</u>. After receipt of the test plan, the Decision Authority must issue a decision on an election-supporting technology amended pursuant to an approved compliance plan in the same manner and with the same process and rights as a final decision on certification.

8.9. **Requests for Reconsideration**. Manufacturers may request reconsideration of an initial decision.

8.9.1. <u>Submission of Request</u>. A request for reconsideration must be made within 10 business days of the manufacturer's receipt of an initial decision. The request must be addressed and sent to the Decision Authority.

8.9.2. <u>Acknowledgment of Request</u>. The Decision Authority must acknowledge receipt of the manufacturer's request for reconsideration. This acknowledgment must either enclose all information that served as the basis for the initial decision or provide a date by which the record will be forwarded to the manufacturer.

8.9.3. <u>Manufacturer's Submission</u>. Within 20 business days of receipt of the record, a manufacturer may submit written materials in support of its position, including an argument responding to the conclusions in the initial decision and documentary evidence relevant to the issues raised in the initial decision.

8.9.4. <u>Decision Authority's Review of Request</u>. The Decision Authority must review and consider all relevant submissions of the manufacturer. In making a decision on reconsideration, the Decision Authority must also consider all documents that make up the record and any other documentary information he or she determines relevant.

8.10. **Agency Final Decision**. The Decision Authority must issue a written final decision after review of the manufacturers' request for reconsideration. This decision will be the decision of the agency and must include:

- The agency's determination on the application for certification.
- The issues raised by the manufacturers in its request for reconsideration.
- All facts, evidence, and EAC election-supporting technology standards that serve as the basis for the decision.
- The reasoning behind the determination.
- Any additional documentary information identified and provided as an attachment that serves as a basis for the decision and was not part of the manufacturers' submission or the prior record.

- The manufacturers' notice of its right to appeal.

8.11. **Appeal of Agency Final Decision**. Within 10 business days of receipt of a final decision denying certification, a manufacturer may issue a written request for appeal. The appeal must be submitted to the Decision Authority and addressed to the Chair of the EAC. Any submission after a 20-day period will not be considered. The request must clearly state the specific conclusions appealed and cannot reference or include any factual material that is not in the record.

8.11.1. <u>Consideration of Appeal</u>. All timely appeals will be considered by the Appeal Authority.

- The Appeal Authority consists of two or more EAC Commissioners or other individuals appointed by the Commissioners who have not previously served as the initial or reconsideration authority on the matter. If the Appeal Authority does not reach consensus, the appeal will be denied.
- All decisions on appeal must be based on the record.
- The determination of the Decision Authority will be given deference by the Appeal Authority. Although it is unlikely that the certification process will produce factual disputes, in such cases, the burden of proof belongs to the manufacturers to demonstrate by clear and convincing evidence that its election-supporting technology met all substantive and procedural requirements for certification. The determination of the Decision Authority may be overturned only when the Appeal Authority finds the ultimate facts in controversy highly probable.

8.12. **Decision on Appeal**. The Appeal Authority must make a written, final decision on appeal and provide it to the manufacturers. The Appeal Authority must make one of two determinations.

8.12.1. <u>Grant of Appeal.</u> The appeal will be granted if the Appeal Authority determines that the conclusions of the Decision Authority should be overturned in full. In such cases, certification will be approved subject to the requirements of Chapter 6.

8.12.2. <u>Denial of Appeal.</u> The appeal will be denied if the Appeal Authority determines that the Decision Authority's determination should be upheld. In such cases, the application for appeal is denied.

The following are required for the Decision on Appeal:

- The final determination of the agency.
- The matters raised by the manufacturers on appeal.
- The reasoning behind the decisions.
- Statement that the decision is final and that no additional appeal will be granted.

9. Decertification

9.1. **Decertification Policy**. Decertification is the process by which the EAC revokes a certification previously granted to an election-supporting technology. Decertification is initiated when the EAC receives information from a source that has used, tested, or observed that an election-supporting technology may not be in compliance with the voluntary certification requirements or the procedural requirements of this manual. Upon receipt of this information, the Program Director must initiate an informal inquiry to determine if the reported information is accurate. If the information is accurate and suggests the system is non-compliant, a formal investigation will be initiated. If the results of the formal investigation demonstrate noncompliance, the manufacturers will be provided a notice of noncompliance. Before a final decision on decertification is made, the manufacturers will have the opportunity to remedy any defects identified in the election-supporting technology and present information for consideration by the EAC. A decertification may be appealed.

Systems will be decertified if:

- they do not to meet applicable voluntary certification requirements,
- they have been changed without following the requirements of this manual, or
- the manufacturer has failed to follow the procedures outlined in this manual and the quality, configuration, or compliance of the system is in question.

9.2. **Informal Inquiry**. An informal inquiry is the first step taken when information is presented to the EAC that suggests an election-supporting technology may not be in compliance with the voluntary certification requirements or this program's procedural requirements. The purpose of this inquiry is to determine whether a formal investigation is warranted. This inquiry concludes with a decision on referral for investigation.

9.2.1. <u>Procedure</u>. Informal inquiries do not follow a formal process.

9.2.1.1. *Initiation.* Informal inquiries are initiated at the discretion of the Program Director any time the Program Director receives attributable, relevant information that suggests a certified election-supporting technology may require decertification. The information must come from a source that has used, tested, or observed the reported occurrence. The Program Director must notify the manufacturers that an informal inquiry has been initiated. Initiation of an inquiry must be documented through the creation of a memorandum for the record.

9.2.1.2. *Inquiry.* The informal inquiry process is limited to inquiries necessary to determine whether a formal investigation is required. The Program Director must conduct such inquiry necessary to determine the accuracy of the information obtained, and if the information, if true, would serve as a basis for decertification. The nature and extent of the inquiry process will vary depending on the source of the information.

9.2.1.3. *Conclusion.* An informal inquiry concludes after the Program Director determines the accuracy of the information that initiated the inquiry and whether that information, if true, would warrant decertification. The Program Director may only: (1) refer the matter for a formal investigation, or (2) close the matter without additional action.

9.2.2. <u>Closing the Matter without Referral</u>. If the Program Director determines a matter does not require a formal investigation, the inquiry is closed with the filing of a memorandum for the record and notification to the manufacturers. This document must state the focus and findings of the inquiry and the reasons a formal investigation was not warranted.

9.2.3. <u>Referral</u>. If the Program Director determines a matter requires a formal investigation, the Program Director must refer the matter in writing to the Decision Authority. In preparing this referral, the Program Director must:

- state the facts that served as the basis for the referral,
- state the findings of the Program Director and attach all documented evidence, and
- recommend a formal investigation, specifically stating the system to be investigated and the scope and focus of the proposed investigation.

9.3. **Formal Investigation**. A formal investigation is an official investigation with the purpose of gathering and documenting information sufficient to determine whether an election-supporting technology warrants decertification. This results in an investigation report.

9.3.1. <u>Initiation of Investigation.</u> The Decision Authority authorizes a formal investigation.

9.3.1.1. *Scope.* The Decision Authority must clearly set the scope of the investigation by identifying (in writing) the election-supporting technology and specific procedural or operational non-conformance to be investigated. The non-conformance to be investigated must be set forth in the form of numbered allegations.

9.3.1.2. *Investigator.* The Program Director is responsible for conducting the investigation and may assign staff or technical experts to investigate the matter.

9.3.2. <u>Notice of Formal Investigation.</u> Upon initiation of a formal investigation, the EAC must notify the manufacturers of the scope of the investigation, which must include:

- Identification of the election-supporting technology and specific procedural or operation non-conformance being investigated.
- An opportunity for the manufacturers to provide relevant information in writing.
- An estimated timeline for the investigation.

9.3.3. <u>Investigation.</u> Investigations must be conducted impartially, diligently, promptly, and confidentially and utilize appropriate techniques to gather the necessary information.

9.3.3.1. *Conflicts of Interest.* All individuals assigned to an investigation must be free from any financial conflicts of interest.

9.3.3.2. *Diligent Collection of Information.* All investigations must be conducted in a meticulous and thorough manner. Investigations will gather all relevant information and documentation that is available.

9.3.3.3. *Prompt Collection of Information.* Determinations that may affect the administration of elections must be made in an expedited manner because the EAC's decision on decertification may affect the actions of state and local election officials.

9.3.3.4. *Confidential Collection of Information.* Consistent with federal law, information pertaining to a formal investigation will not be made public until the investigation report is complete. All pre-decisional investigative materials must be safeguarded.

9.3.3.5. *Methodologies.* Investigators must gather information consistent with the four above principles. Investigative tools include (but are not limited to) the following:

- Investigators may interview individuals. All interviews must be reduced to written form; each interview must be summarized in a statement that is reviewed, approved, and signed by the interviewee.
- Field and manufacturing site audits.
- Investigators may pose specific, written questions to the manufacturers for the purpose of gathering information relevant to the investigation. The manufacturers must respond to the queries within a specified timeframe.
- Testing may be performed in an attempt to reproduce a reported condition or failure. Testing must be conducted at a VSTL designated by the EAC.

9.3.4. <u>Investigation Report.</u> The investigation report serves to document: (1) all relevant and reliable information gathered during the investigation; and (2) the conclusions gathered during the investigation process.

9.3.4.1. The report is complete and final when certified and signed by the Decision Authority. The final report will be publicly available at http://www.eac.gov. The following must be included in the written report:

- Scope of the investigation, identification of the election-supporting technology, and specific matter investigated.
- Description of the investigative process employed.
- Summary of the relevant and reliable facts and information gathered during the investigation.
- All relevant and reliable evidence collected during the investigation that documents the facts must be documented and attached.
- Analysis of the information gathered.
- Statement of the findings of the investigation.

9.3.4.2. *Findings.* The investigation report must state one of two conclusions: substantiated allegation or unsubstantiated allegation.

9.3.4.3. *Substantiated Allegation.* An allegation is substantiated if a preponderance of the relevant and reliable information gathered requires the election-supporting technology to be decertified. A notice of noncompliance must be issued if an allegation is substantiated.

9.3.4.4. *Unsubstantiated Allegation.* An allegation is unsubstantiated if the preponderance of the relevant and reliable information gathered does not warrant decertification. The matter will be closed, and a report copy forwarded to the manufacturers.

9.4. **Effect of Informal Inquiry or Formal Investigation on Certification**. An election-supporting technology's EAC certification is not affected by the initiation or conclusion of an informal inquiry or formal investigation. Systems under investigation remain certified until a final decision on decertification is issued.

9.5. **Notice of Noncompliance**. The notice of noncompliance is not a decertification. It notifies the manufacturers of the noncompliance and the EAC's intent to decertify the system and informs the manufacturers of its procedural rights so that it may be heard prior to decertification.

The following must be included in a notice of noncompliance:

- A copy of the investigation report to the manufacturers.
- The noncompliance, consistent with the investigation report.
- Notification to the manufacturers that if the election-supporting technology is not made compliant, it will be decertified.
- Actions required for the election-supporting technology to be in compliance and avoid decertification.
- The manufacturers' procedural rights under the program, which include the following:
  - the right to present information to the EAC prior to a determination of decertification,
  - the investigation report and any other materials that serve as the basis of an agency decision on decertification, and
  - the right to cure within 15 business days of its receipt of the notice of noncompliance.

9.6. **Procedure for Decision on Decertification**. The Decision Authority must make and issue a written decision on decertification after the manufacturers has had a reasonable opportunity to cure the noncompliance and submit information for consideration.

9.6.1. Opportunity to Cure. The manufacturers will have an opportunity to cure a nonconformant election-supporting technology 30 business days prior to decertification.

9.6.1.1. *Manufacturers' Request to Cure.* Within 10 business days of receiving the EAC's notice of noncompliance, a manufacturer may request an opportunity to cure all defects identified in the notice. The request must be sent to the Decision Authority and outline how the manufacturer intends to modify the system, update the

technical information, have a VSTL create a test plan, and test the system.

9.6.1.2. *EAC Action on Request.* The Decision Authority must review the request and approve it if the defects identified in the notice of noncompliance may reasonably be cured before the next federal election.

9.6.1.3. *Manufacturers' Compliance Plan.* Upon approval of the request for an opportunity to cure, the manufacturers must submit a compliance plan to the EAC for approval describing the steps to be taken (including time frames) to cure all identified defects. The plan must describe the proposed changes, provide for modification, update the technical information required by Section 4.2.5, include a test plan by the VSTL, and provide for the VSTL's testing of the system and submission of the test report for approval. The plan must include a schedule of periodic progress reports to the Program Director.

9.6.1.4. *EAC Action on the Compliance Plan.* The EAC must review and approve the compliance plan. The manufacturers may be required to provide additional information and modify the plan as required. If the manufacturer is unable or unwilling to provide an acceptable compliance plan, the Decision Authority must provide written notice terminating the "opportunity to cure" process.

9.6.1.5. *VSTL's Submission of the Compliance Plan Test Report.* The VSTL must submit the test report created pursuant to the approved compliance plan. The EAC must review the test report and any other necessary or relevant materials.

9.6.1.6. *EAC Decision on the System.* After receipt of the VSTL's test report, the Decision Authority must issue a decision within 20 business days.

9.6.2. <u>Decision on Decertification</u>. The EAC must make and issue a determination on decertification after the manufacturer has provided all its written materials for consideration or the time allotted for submission has expired. A decertification is effective upon the EAC's publication of the decision. This decision must include the following:

- The agency's determination on the decertification, specifically addressing the areas of noncompliance investigated.
- The issues raised by the manufacturers in the materials it submitted.
- Facts, evidence, procedural requirements, and/or voluntary certification requirements that served as the basis for the decision.
- The reasoning for the decision.
- Documentation that served as a basis for the decision and that was not part of the manufacturers' submission or the investigation report.
- Notification to the manufacturers of its right to appeal.

9.7. **Appeal of Decertification**. A manufacturer may request an appeal of the decision. The manufacturers must submit a request in writing to the Chair of the EAC within 20 business days of receipt of the decision on decertification. The manufacturers must clearly state the specific

conclusions of the decision that the manufacturer wishes to appeal including any additional written arguments. The initiation of an appeal does not affect the decertified status of an election-supporting technology.

9.7.1. <u>Consideration of Appeal</u>. All timely appeals will be considered by the Appeal Authority. The Appeal Authority consists of two or more EAC Commissioners or other individual(s) designated by the Commissioners who have not previously served as an investigator, advisor, or decision maker in the decertification process. All decisions on appeal must be on the record.

The decision of the Decision Authority will be given deference by the Appeal Authority. The burden of proof belongs to the manufacturers to demonstrate by clear and convincing evidence that its election-supporting technology met all substantive and procedural requirements for certification. The determination of the Decision Authority will only be overturned if the Appeal Authority finds the ultimate facts in controversy highly probable.

9.7.2. <u>Decision on Appeal</u>. The Appeal Authority must issue a written decision on appeal to the manufacturers that either grants or denies the appeal. If the appeal is granted in whole, the previous decision will be reversed, and the election-supporting technology will have its certification reinstated. The election-supporting technology will be treated as though it was never decertified. If the appeal is denied in whole or in part, the decertification decision will be upheld. The election-supporting technology will remain decertified. The decision on appeals is final and binding, no additional appeals will be granted. The following must be included in a decision on appeal:

- The final determination of the agency and the reasons behind that decision.
- The matters raised by the manufacturer on appeal.
- Statement that the decision on appeal is final.

9.8. **Effect of Decertification**. A decertified election-supporting technology no longer holds an EAC certification and will be treated as any other uncertified election-supporting technology. The manufacturers must not represent the election-supporting technology as certified, either through labels or other means. The EAC will remove the election-supporting technology from the list of certified systems and notify election officials of the decertification.

9.9. **Recertification**. A decertified system may be resubmitted for certification and will be treated as any other system seeking certification consistent with the requirements in this manual.

10. Quality Monitoring Program

10.1. **Overview**. Quality depends on two factors: design of a product and consistency in the manufacturing process. The EAC's testing and certification process focuses on election-supporting technology design quality by ensuring that a representative sample meets the technical specifications of the applicable voluntary requirements. Manufacturing quality is the responsibility of the manufacturer.

After an election-supporting technology is certified, the manufacturer assumes primary responsibility for manufacturing quality through configuration management and quality control processes. The EAC's Quality Monitoring Program enhances quality control by allowing the EAC to perform manufacturing site audits, carry out fielded system reviews, and gather information on election-supporting technology anomalies from election officials. These tools help ensure that election-supporting technologies continue to meet the voluntary requirements as the systems are manufactured, delivered, and used in federal election.

10.2. **Purpose**. The purpose of the Quality Monitoring Program is to ensure systems used by election jurisdictions are identical to those tested and certified by the EAC, monitor the completeness and adequacy of testing with the desired performance in fielded election-supporting technologies, and monitor the effectiveness of the voluntary requirements.

Quality control is accomplished by identifying potential quality problems in manufacturing, uncertified election-supporting technology configurations, and field performance issues with certified systems.

10.3. **Manufacturer's Quality Control**. The EAC's Quality Monitoring Program is not a substitute for the manufacturer's own quality control program. As stated in Chapter 2 of this manual, all manufacturers must have an acceptable quality control program in place before they may register. The EAC's program serves as an independent and complementary process of quality control that works in tandem with the manufacturer's efforts.

10.4. **Quality Monitoring Methodology**. The EAC uses four tools to assess the effectiveness of the certification process and the compliance of fielded election-supporting technologies:

- site audits,
- fielded system reviews,
- receiving anomaly reports from the field, and
- technical bulletins or product advisories created by the manufacturer.

10.5. **Manufacturing Site Audit**. Facilities that produce certified election-supporting technologies must be reviewed periodically, at the discretion of the EAC, to verify that the system being produced, shipped, and sold is the same as the certified system. All registered manufacturers must cooperate with such site reviews as a condition of program participation.

10.5.1. <u>Notice</u>. The site review may be conducted as either a pre-scheduled or impromptu visit, at the discretion of the EAC. A manufacturer must be given at least 24 hours' notice. The EAC coordinates scheduling with and provides notice to the manufacturing facility's representative and the manufacturer's representative.

10.5.2. <u>Frequency</u>. All manufacturing facilities are subject to a site review at least once every two years during odd years.

10.5.3. <u>Review</u>. EAC representatives must be able to review the manufacturing facility, manufacturing test records, and manufacturing schedules. EAC representatives may witness manufacturing or manufacturing testing. If equipment is not being produced during the inspection, the review may be limited to manufacturing records. During the inspection, the manufacturer must provide the EAC representatives with the manufacturer's quality manual and other documentation sufficient to enable the representative to evaluate the following:

- Manufacturing quality controls.
- Final inspection and testing.
- History of deficiencies or anomalies and corrective actions taken.
- Equipment calibration and maintenance.
- Corrective action program.
- Policies on product labeling and the application of the EAC mark of certification.

10.5.4.   <u>Exit Briefing</u>. EAC representatives must provide the manufacturing facility's representative a verbal exit briefing regarding preliminary observations of the review.

10.5.5. <u>Written Report</u>. The EAC must draft a written report documenting the review and provide it to the manufacturer. The report must detail the findings of the review and identify required actions to correct any identified deficiencies.

10.6. **Fielded System Review and Testing**. Upon invitation, or with the permission of a state or local election authority, the EAC may conduct a review of fielded election-supporting technologies. Such reviews ensure that a fielded system is used in the same configuration as was certified by the EAC and that the proper mark of certification has been applied. This review may include the testing of a fielded system, if deemed necessary. Any anomalies found during this review must be provided to the appropriate election jurisdiction(s) and the manufacturers. In addition, this review will evaluate the correspondence of the actual configuration and use of the election-supporting technology in the field with the VSTL-tested system. If anomalies occur, these reviews seek to determine the direct cause, underlying root cause, and appropriate remedial or preventative actions.

10.7. **Field Anomaly Reporting**. The EAC will collect information from election officials with fielded EAC-certified election-supporting technologies. Information on the actual field performance of an election-supporting technology is used as a means for assessing the effectiveness of the program and the manufacturing quality and version control. The EAC must provide a mechanism for election officials to provide input related to election-supporting technology anomalies.

10.7.1. <u>Anomaly Report</u>. Election officials may submit notices of election-supporting technology anomalies directly to the EAC consistent with the requirements below.

10.7.2. <u>Who May Report</u>? State or local election officials who have experienced election-supporting technology anomalies in their jurisdiction may file anomaly reports. The individuals reporting must identify themselves and have firsthand knowledge of, or official responsibility over, the anomaly being reported. Anonymous or hearsay reporting will not be accepted.

10.7.3. <u>What Should Be Reported</u>? Election officials may report election-supporting technology anomalies. An anomaly is defined as an irregular or inconsistent action or response from the election-supporting technology that resulted in the system not functioning as intended or expected. Anomalies resulting from administrator error or procedural deficiencies are not considered anomalies for purposes under this chapter. The report must include:

- The reporting official's name, title, contact information, and jurisdiction.
- A description of the election-supporting technology that experienced the anomaly.
- The date and location of the reported occurrence.
- The type of election.
- A description of the anomaly witnessed with applicable supporting documentation, if available.

10.7.4. <u>Distribution of Reports</u>. Reports containing credible information must be distributed to state and local election jurisdictions with similar systems, to the manufacturer of the election-supporting technology, and to the VSTLs. Reports are deemed credible if:

- the definition of an anomaly is met;
- a complete report is submitted based on the requirements of Section 10.7.3;
- information contained within the report was confirmed by others present at the time of the anomaly; and
- was verified by the relevant state's chief election official.

10.8. **Manufacturer Created Technical Bulletins or Product Advisories**. Manufacturers are required to provide any technical bulletins or product advisories issued on EAC-certified election-supporting technologies to the EAC at the time they are issued to jurisdictions impacted by the advisory. EAC must receive these via email within 24 hours of issuance.

10.9. **Use of Quality Monitoring Information**. Ultimately, the information the EAC gathers from manufacturing site audits, fielded system reviews, and field anomaly reports is used to improve the program and ensure the quality of election-supporting technologies. The Quality Monitoring Program is not designed to be punitive but to focus on improving the process. Information gathered is used to accomplish the following:

10.9.1. Identify areas for improvement in the EAC's Election Supporting Technology Evaluation Program.

10.9.2. Improve the manufacturing quality and change control processes.

10.9.3. Increase voter confidence in election technology.

10.9.4. Inform manufacturers, election officials, and the EAC of issues associated with election-supporting technologies in a real-world environment.

10.9.5. Share information among jurisdictions that use similar election-supporting technologies.

10.9.6. Resolve problems associated with election-supporting technology or manufacturing by involving manufacturers, election officials, and the EAC.

10.9.7. Strengthen the coordination between certification testing and desired performance in deployed election-supporting technologies.

10.9.8. Adopt a yearly review process of voluntary requirements whereby proposed changes and additions are considered by the EAC

10.9.9. Initiate an investigation when information suggests decertification is warranted (see Chapter 9).

11. Requests for Interpretations

11.1. **Overview**. A request for interpretation (RFI) is a way for manufacturers and VSTLs to request the EAC provide a definitive interpretation of ambiguous voluntary requirements. The EAC may self-initiate such a request when its agents identify a need for interpretation. An interpretation issued by the EAC does not amend voluntary requirements but serves only to clarify existing requirements. Other processes govern suggestions or requests for modifications to the voluntary requirements.

11.2. **Requirements for Submitting an RFI**. Interpretations are limited in scope. RFIs must be submitted by a registered manufacturer or VSTL, request interpretation of an applicable voluntary requirement, present an actual controversy, and seek clarification of an unsettled ambiguity.

    11.2.1. <u>Applicable Voluntary Requirements</u>. An RFI is limited to queries regarding requirements contained in a version of voluntary requirements to which the EAC currently offers certification.

    11.2.2. <u>Existing Factual Controversy</u>. To submit an RFI, a manufacturer or VSTL must present a question relative to a specific election-supporting technology. An RFI on hypothetical issues will not be addressed, and an RFI will not be accepted when the issue has previously been clarified. A factual controversy exists when an attempt to apply a specific section of the voluntary requirements to a specific system or piece of technology creates ambiguity.

        11.2.2.1. *Actual Ambiguity*. An RFI must contain an actual ambiguity. The interpretation process is not a means for challenging a clear voluntary requirement or to recommend changes to requirements. An ambiguity arises when one of the following occurs:

- The language of a requirement or its test assertions is unclear on its face.
- One requirement or its test assertions seems to contradict another.
- The language of the requirement or its test assertions, though clear on its face, lacks sufficient detail or breadth to determine its proper application to a particular technology.
- The language of a particular requirement or its test assertions, when applied to a specific technology, conflicts with the established purpose or intent of the requirement.
- The language of the requirement or its test assertions is clear, but the proper means to assess compliance is unclear.

11.3. **Submitting RFIs**. RFIs must be sent in writing to the Program Director. Interpretations are based upon, and limited to, the facts presented; therefore, all requests should be complete and as detailed as possible. Failure to provide complete information may result in an interpretation that is non-applicable and immaterial to the issue at hand. The following must be included in an RFI:

11.3.1. <u>Establish standing to make the request</u>. The written request must provide sufficient information for the Program Director to conclude that the requestor is a proper requestor requesting an interpretation of an applicable election-supporting technology standard due to an actual factual controversy that seeks to clarify an unsettled ambiguity.

11.3.2. <u>Identify the voluntary requirement to be clarified</u>. The request must state the voluntary requirements version at issue and properly quote and cite the applicable requirement(s).

11.3.3. <u>State the facts resulting in ambiguity</u>. The requestor must provide all necessary facts in a clear, concise manner.

11.3.4. <u>Identify the ambiguity</u>. The request must identify the ambiguity and must clearly state a concise question that references and election-supporting technology standard and technology at issue. This question must be limited to a single issue (present multiple issues in multiple questions) and be stated in a way that can be answered with "yes" or "no."

11.3.5. <u>Provide a Proposed Interpretation</u>. An RFI must propose an answer to the question posed. The answer must interpret the requirement or its test assertions in the context of the facts presented and must provide the basis and reasoning behind the proposed interpretation.

11.4. **EAC Action on an RFI**. Upon receipt of an RFI, the Program Director must review the request to ensure it is complete, clear, and meets the requirements of Section 11.3. Upon review, the Program Director must do one of the following:

- <u>Request Clarification</u>. If the RFI is incomplete, or requires additional information, the Program Director may solicit clarification or additional information from the requestor.
- <u>Reject the Request for Interpretation</u>. If the RFI does not meet the requirements, the Program Director may reject it through written notice to the requestor stating the basis for the rejection.
- <u>Notify Acceptance of the Request</u>. If the RFI is accepted, the Program Director must notify the requestor in writing. An RFI may be accepted in whole or in part and the notice of acceptance must state the issues accepted for interpretation.

After this determination has been made, a written interpretation must be sent to the requestor. The notice must include the question investigated, the relevant facts that served as the basis of the interpretation, the voluntary requirements interpreted, the conclusion reached, and the effect of the interpretation.

11.5. **Effect of Interpretation**. Interpretations are fact-specific and case-specific. They are not tools of policy, but specific, fact-based guidance useful for resolving a particular problem. Ultimately, an interpretation is determinative and conclusive only regarding the case presented. Nevertheless, interpretations do have some value as precedent. Interpretations published by the EAC serve as reliable guidance and authority over identical or similar questions of interpretation. These interpretations will help users understand and apply the individual requirements of the voluntary requirements and will be incorporated into the requirement's test assertions, where

possible.

11.6. **Library of Interpretations**. The Program Director will publish RFIs on http://www.eac.gov. All proprietary information contained in an interpretation must be redacted before publication.

12. Release of Certification Program Information

12.1. **Overview**. Manufacturers participating in the program are required to provide the EAC with a variety of documents. In general, these documents are subject to public release and publication by the EAC. In limited cases, documents may not be released if they include trade secrets, confidential commercial information, or personal information. While the EAC is ultimately responsible for determining which documents federal law protects from release, manufacturers must identify the information they believe is protected and provide substantiation and a legal basis for withholding. This chapter discusses the EAC's general policy on the release of information and provides manufacturers with standards, procedures, and requirements for identifying documents as trade secrets or confidential commercial information.

12.2. **EAC Policy on the Release of Certification Program Information.** The EAC seeks to make the program as transparent as possible. The agency believes such action benefits the program by increasing public confidence in the process and creating a more informed and involved electorate. As such, the EAC makes all documents, or severable portions thereof, available to the public consistent with federal law (e.g. Freedom of Information Act and the Trade Secrets Act).

12.2.1. <u>Requests for Information</u>. Members of the public may request access to program documents under FOIA (5 U.S.C. §552). The EAC must promptly process such requests per the requirements of the Act.

12.2.2. <u>Publication of Documents</u>. Beyond the requirements of FOIA, the EAC intends to publish program documents (or portions of documents) it believes are of interest to the public at http://www.eac.gov. The published documents will cover the full spectrum of the program, including information pertaining to:

- registered manufacturers
- VSTL test plans and test reports
- agency decisions (denials of certification, issuance of certifications, etc.)
- information on a certified election-supporting technology's operation, components, features or capabilities
- appeals
- reports of investigation and notice of noncompliance
- decertification actions
- manufacturing facility review reports
- official interpretations
- other topics as determined by the EAC.

12.2.3. <u>Trade Secret and Confidential Commercial Information</u>. Federal law places a number of restrictions on a federal agency's authority to release information to the public. Two such restrictions are particularly relevant to the program: trade secrets information and privileged or confidential commercial information. Both types of information are explicitly prohibited from release by the FOIA and the Trade Secrets Act (18 U.S.C. §1905).

12.3. **Trade Secrets**. A secret, commercially valuable plan, process, or device used for the making or processing of a product and that is the result of either innovation or substantial effort. It relates to the productive process itself, describing how a product is made. It does not relate to information describing end product capabilities, features, or performance. The following examples illustrate productive processes that may be trade secrets:

- Plans, schematics, and other drawings useful in manufacturing.
- Specifications of materials used in manufacturing.
- election-supporting technology source code used to develop or manufacture software where release would reveal actual programming.
- Technical descriptions of manufacturing processes and other secret information relating directly to the manufacturing process.

The following examples are likely not trade secrets:

- Information pertaining to a finished product's capabilities or features.
- Information pertaining to a finished product's performance.
- Information regarding product components that would not reveal any commercially valuable information regarding manufacturing.

12.4. **Privileged or Confidential Commercial or Financial Information**. The following information shared by the manufacturer should not be made public.

12.4.1. <u>Commercial or Financial Information.</u> The terms "commercial" and "financial" should be given their ordinary meanings. They include records in which a submitting manufacturer has any commercial interest.

12.4.2. <u>Privileged or Confidential Information.</u> Commercial or financial information is privileged or confidential if its disclosure would likely cause substantial harm to the competitive position of the submitter. The concept of harm to one's competitive position focuses on harm flowing from a competitor's affirmative use of the proprietary information. It does not include incidental harm associated with upset customers or employees.

12.5. **EAC's Responsibilities**. The EAC is ultimately responsible for determining whether a document (in whole or in part) may be released pursuant to federal law. However, the EAC may require information and input from the manufacturer submitting the documents. This requirement is essential for the EAC to identify, track, and make determinations on the large volume of documentation it receives. The EAC has the following responsibilities:

12.5.1. <u>Managing Documentation and Information.</u> The EAC controls the documentation it receives by ensuring that documents are secure and released to third parties only after the appropriate review and determination.

12.5.2. <u>Contacting Manufacturers on Proposed Release of Potentially Protected Documents.</u> In the event a member of the public submits a FOIA request for documents provided by a manufacturer or the EAC otherwise proposes the release of such documents, the EAC

must take the following action:

- Review the documents to determine if they are potentially protected from release as trade secrets or confidential commercial information.
- In the event the information has been identified as potentially protected from release as a trade secret or confidential commercial information, the EAC must notify the manufacturer and allow an opportunity to support its position prior to release of the information. The submitter must respond consistent with Section 12.6.2.

12.5.3. <u>Final Determination on Release</u>. After providing the submitter of the information an opportunity to be heard, the EAC will make a final decision on release and inform the submitter of this decision.

12.6. **Manufacturer Responsibilities.** When a manufacturer submits documents to the EAC as required by the program, it is responsible for identifying any document or portion of a document that it believes is protected from release by federal law. This responsibility arises upon the initial submission of information and upon notification by the EAC that it is considering the release of potentially protected information.

12.6.1. <u>Initial Submission of Information</u>. Manufacturers must identify protected information by the following:

12.6.1.1. *Submitting a Notice of Protected Information*. This notice must identify the document, document page, or portion of a page that the manufacturer believes should be protected from release with specificity. For each piece of information identified, the manufacturer must state the legal basis for its protected status.

- Cite the applicable law that exempts the information from release.
- Clearly discuss why that legal authority applies and why the document must be protected from release.
- If necessary, provide additional documentation or information. For example, if the manufacturer claims a document contains confidential commercial information, it must also provide evidence and analysis of the competitive harm that would result upon release.

12.6.1.2. *Label Submissions*. Label all submissions identified in the notice as "Proprietary Commercial Information." Label *only* protected submissions. Attempts to indiscriminately label all materials as proprietary render the markings moot.

12.6.2. <u>Notification of Potential Release</u>. If the EAC notifies a manufacturer that the EAC is considering the release of information that may be protected, the manufacturer must:

12.6.2.1. Respond to the notice within 10 business days. If requested by the manufacturer before the deadline, the Program Director may allow additional time for good cause before the deadline. Manufacturers that fail to respond before the deadline will waive their right to object to the release.

12.6.2.2. Clearly state one of the following in the response:

- There is no objection to release.
- The manufacturer objects to release. The response must clearly state which portions of the document should be protected from release, following the procedures discussed in Section 12.6.1.1.

12.7. **Personal Information**. Certain personal information is protected from release under FOIA and the Privacy Act (5 U.S.C. §552a). This includes private information about a person that, if released, would cause embarrassment or constitute an unwarranted invasion of personal privacy. The EAC does not require the submission of private, individual information and the incidental submission of such information should be avoided. If a manufacturer believes it is required to submit such information, it should contact the Program Director. Examples of such information include social security number, bank account number, or home address and phone number.

Appendix A - Glossary

Definitions. For purposes of this manual, the terms listed below have the following definitions.

Appeal. A formal process by which the EAC is petitioned to reconsider a decision.

Appeal Authority. The individual(s) appointed to serve as the determination authority on appeal.

Build Environment. The disk or other media that holds the source code, compiler, linker, integrated development environments (IDE), and/or other necessary files for the compilation and on which the compiler stores the resulting executable code.

Certificate of Conformance. The certificate issued by the EAC when a system has been found to meet the expectations of the voluntary requirements. This document indicates that the system has been certified.

Commercial Off-the-Shelf (COTS). Any 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 election-supporting technologies and that is incorporated into the election-supporting technology with no specific modification.

Commission (EAC). The U.S. Election Assistance Commission, as an agency.

Commissioners. The serving commissioners of the U.S. Election Assistance Commission.

Compiler. A computer program that translates programs expressed in a high-level language into machine language equivalents.

Component. An identifiable and discrete part of the larger election-supporting technology essential to its operation, and an immediate subset of the system to which it belongs.

Decision Authority. The EAC Executive Director or Executive Director's designee.

Deficiency. A deficiency is a non-conformity to the voluntary requirements to which the election-supporting technology is being certified.

Electronic Ballot Delivery (EBD) System. Systems used for electronic delivery of ballot and voter information packets. The MOVE Act requires each state to provide for the electronic delivery (via fax, email, or an Internet-supported application) of ballots and related information from the local election office to the registered Uniformed and Overseas Civilian voters. Some jurisdictions allow voters with a disability, voters who have been displaced or other circumstances where a voter who resides in the election jurisdiction to also receive a ballot electronically.

Election Night Reporting (ENR). Consists of aggregating and displaying unofficial election results to the public, usually through an official website or social media platforms. These systems may also

provide other information, such as voter turnout and other related statistics about the election.

Election Official. A State or local government employee who has as one of their primary duties the management or administration of a Federal election.

Electronic Poll Book (EPB). The total combination of mechanical, electromechanical, and electronic equipment (including the software, firmware, cloud-based storage systems, and documentation required to program, control, and support the equipment) used to store and retrieve voter registration information, verify voter eligibility, and record voter activity at polls. EPBs may also allow voter registration records to be created and updated, assign voters to ballot styles, redirect voters to correct voting locations, provide voter turnout information to election officials, produce reports for election observers, and perform other tasks as permitted or required by local law.

Election-Supporting Technology. Any electronic machine, piece of equipment, or software package, other than a voting system, designed to streamline the voting experience. Includes electronic poll books, voter registration portals and databases, election night reporting systems, and electronic ballot delivery systems. May also include emerging systems not previously evaluated or certified by an accredited voting system testing laboratory.

Federal Election. Any primary, general, runoff, or special election in which a candidate for Federal office (President, Senator, or Representative) appears on the ballot. In addition, for the purposes of this manual, the term includes any and all Pre-Election Testing and Post-Election Testing and/or auditing done in conjunction with any primary, general, runoff, or special election involving a candidate for Federal office.

File Signature. A file signature (AKA a cryptographic hash value) creates a value that is computationally infeasible of being produced by two similar but different files. File signatures, a set of files produced using a hash algorithm, are used to verify that files are unchanged.

Hash Algorithm. An algorithm that maps a bit string of arbitrary length to a shorter, fixed-length bit string. The hash algorithm used for this Program is the Secure Hash Algorithm (SHA-2) specified in Federal Information Processing Standard (FIPS) 180-4.

Installation Device. A device containing program files, software, and installation instructions for installing an application (program) onto a computer. Examples of such devices include installation disks, compact flash memory cards, and USB memory drives.

Integration Testing. The end-to-end testing of a full system configured for use in an election to assure that all legitimate configurations meet applicable standards.

Lines of Code. Any executable statements, flow control statements, formatting, and comments.

Malfunction. A malfunction is a failure of an election-supporting technology, not caused solely by operator or administrative error, which impairs the confidentiality, integrity, or availability of the election-supporting technology.

Management Representative. An individual authorized to represent and make binding commitments and management determinations for the manufacturer.

Manufacturing Facility. A manufacturing facility that provides final system configuration and loading of programs for customer delivery, manufacturing of component units of the election-supporting technology, and manufacturing of major sub-assemblies of the election-supporting technology.

Manufacturer. An entity creating, marketing, and selling election-supporting technologies to local jurisdictions for their use. The manufacturer is responsible for registering and submitting their products for testing and certification in compliance with this manual.

Mark of Certification. A uniform notice permanently posted on an election-supporting technology signifying it is certified.

Minor Change. A minor change is 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. Any changes made to a system under test results in the manufacturer supplying a list and detailed description of all changes.

Modification. Any change to a previously EAC-certified voting system's hardware, software, or firmware that is not classified as a minor change or new system.

Program Director. The individual responsible for administering and managing the Election-Supporting Technology Evaluation Program. In the event of a vacancy in this position, the EAC Executive Director will designate staff to temporarily assume these duties.

Proprietary Information. Commercial information or trade secrets protected from release under the Freedom of Information Act and the Trade Secrets Act.

Scope of Certification. A document attached to the Certificate of Conformance. The scope of certification describes the system and includes, but is not limited to, the following:
- A system overview that briefly describes each major component of the system. It includes a high-level system diagram showing these components and how they relate and interact in each configuration.
- Languages supported by the system.
- In the event of a modification, a description of the change(s) made to each component.
- Proprietary components, including hardware and software included in the system. This will detail the model name/number and version.
- COTS components, including software and hardware, included in the system. This will detail the model name/number and version.
- The limitations and capacities that the system has been tested and certified to meet.
- The declared supported functionality of the system.
- All engineering changes certified with the system.

System Identification Tools. Tools created by a manufacturer of election-supporting technologies which allow elections officials to verify that the hardware and software of systems purchased are identical to the systems certified by the EAC.

Technical Representative. A person authorized to provide technical information for the manufacturer.

Trusted Build. A software compilation process where source code is converted into machine-readable binary instructions (executable code) in a manner providing security measures which help ensure that the executable code is a verifiable and faithful representation of the source code.

Voter Registration (VR) Portal. Online webpage that s used to register to vote, update voter registration information, and access voters' guides and voting history. Some portals provide information on elected officials, ballot drop box locations, voting center locations, and current ballot status.

Voter Registration (VR) Databases. A combination of either hardware, software, or firmware, materials, and documentation used to automate the process of voter registration and secure voter information within a county, state, or election jurisdiction by election administrators. Voter registration systems are connected to a private network, administered through state or local jurisdictions, and hold the capability of administrative functions to aid in the voting process on Election Day.

Voting System Test Laboratories (VSTL). Independent testing laboratories accredited by the EAC to test election equipment to EAC-approved 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 Requirements. Guidelines for election-supporting technologies developed, adopted, and published by the EAC. The guidelines are identified by version number and date.

Appendix B – ESTEP Test Plan Outline

This outline is provided solely as an aid to test plan development. Note that these items may change significantly, depending on the specific project planned.

1. **Introduction**
   1.1 References
   1.2 Terms and Abbreviations
   1.3 Project schedule with
      1.3.1 Owner assignments
      1.3.2 Test case development
      1.3.3 Test procedure development and validation
      1.3.4 EAC and manufacturer dependencies
   1.4 Scope of Testing
      1.4.1 System Overview
      1.4.2 Block diagram
      1.4.3 Supported Functionality

2. **Pre-Certification Testing and Issues**
   2.1 Evaluation of prior VSTL testing
   2.2 Evaluation of prior non-VSTL testing
   2.3 Known Field Issues

3. **Materials Required for Testing**
   3.1 Software
   3.2 Hardware
   3.3 Test Materials
   3.4 Deliverables

4. **Test Specifications**
   4.1 Applicable Requirements
   4.2 Hardware Configuration
   4.3 Software System Functions
   4.4 Test Case Design
   4.5 Security Functions
   4.6 Accessibility and Usability
   4.7 TDP Evaluation
   4.8 Source Code Review

Appendix C – ESTEP Test Report Outline

Test Reports produced by VSTLs must follow the format outlined below. Deviations from this format may be used upon prior written approval of the Program Director. Attachments may be used as an alternative to appendices.

1. **Introduction**
    1.1 Revision History
    1.2 References
    1.3 Terms and Abbreviations

2. **System Identification and Overview**
    2.1 Description of Baseline System
    2.2 System Block diagram

3. **Certification Test Background**
    3.1 Implementation Statement
    3.2 Scope of Testing

4. **Test Findings**
    4.1 Summary of Findings
        4.1.1 TDP Review
        4.1.2 Source Code Review
        4.1.3 Accessibility and Usability Testing
        4.1.4 Security Testing
    4.2 Anomalies, Deficiencies, and Resolutions

5. **Recommendation**
    5.1 Support for Recommendation to Certify or Deny

Appendix A. Warrant of Accepting Change Control Responsibility
Appendix B. Additional Findings
Appendix C. Anomalies, Deficiencies, and Resolutions report
Appendix D. Trusted Build
Appendix E. Test Plan
Appendix F. State Test Reports (if applicable)