STATE CERTIFICATION OF VOTING SYSTEMS
Requirements and Procedures

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Part 1: Introduction

1.1. Purpose of Procedures

These procedures have been developed and issued as part of a continuing effort to improve the administration of elections in the Commonwealth of Virginia. They provide a formal and organized process for vendors to follow when seeking state certification for a new voting system or an improvement or modification to an existing voting system currently certified for use. To this end the procedures are designed to:

1. Ensure conformity with state election laws relating to the acquisition and use of voting systems and equipment.

2. Provide an organized and consistent means of evaluating and certifying voting systems and equipment marketed by vendors for use in Virginia.

3. Provide an organized and consistent means of evaluating and certifying additional capabilities and changes in the method of operation for voting systems previously certified for use in Virginia.

4. Provide an organized and consistent means of decertifying voting systems and equipment.

5. Provide for the improvement of the electoral process by ensuring that all voting systems operate properly and are installed and tested in compliance with the State Board of Elections approved procedures.

6. Provide for the accurate reporting of all election results for any jurisdiction in which each certified system is used.

1.2. Specific Requirements

1. The voting system or equipment must meet the requirements contained in the most recent version or versions of the Voluntary Voting System Guidelines (VVSG) or Voting System Standards (VSS) currently accepted for testing and certification by the U.S. Election Assistance Commission (EAC). Compliance with the applicable VVSG/VSS may be substantiated through federal certification by the EAC, through certification by another state that requires compliance with the applicable VVSG/VSS, or through testing conducted by a federally certified voting system test laboratory (VSTL) to the standards contained in the applicable VVSG/VSS. Meeting the requirements contained in the VVSG or VSS will substantiate

compliance with the voting system requirements contained in Section 301 of the Help America Vote Act of 2002 (HAVA).

2. A modification to a voting system previously certified by SBE will be tested in a manner necessary to ensure that all changes meet applicable standards and that the modified system (as a whole) will function properly and reliably. If the system being modified has been tested or certified to a previous VVSG/VSS version, SBE may allow testing of modifications to the prior standards or require testing of the modification to the most current standards, at its discretion.

3. The voting system or equipment must comply with the provisions in the *Code of Virginia* relating to voting equipment (Article 3, Chapter 6 of Title 24.2).

4. The voting system or equipment must comply with any applicable regulations or policies issued by the State Board of Elections.

5. The vendor must ensure that the equipment and software can accommodate interactive visual and non-visual presentation of information to voters and alternative languages when required. (See HAVA, 42 USC 15481(a)(3), (4), §203 of the Voting Rights Act (42 USC 1973aa-1a) and Virginia Code Section 24.2-626.1)

1.3. Applicability

1. The procedures outlined in this document are applicable to all voting systems first used on or after the effective date of this document.

2. These procedures are intended to assist local jurisdictions in identifying voting systems that meet all federal and state requirements and are available for purchase based on individual locality requirements.

3. The requirements of these procedures are waived for any voting system or equipment previously certified for and in use in the Commonwealth of Virginia on or before June 28, 2005. The State Board of Elections reserves the right to require re-certification of these systems or equipment at a future date.

4. Any modification to the hardware, firmware, or software of an existing system which has been certified by the State Board of Elections in accordance with these procedures will, in general, invalidate the certification unless it can be determined by the State Board of Elections that the change does not affect the accuracy, reliability, security, usability or accessibility of the system.

5. The intent of these procedures is to ensure that voting system hardware and software have been shown to be reliable, accurate, usable, accessible and capable of secure operation before they are certified for use in the Commonwealth. Hardware and software products with performance proven in commercial applications may be deemed acceptable, provided that they are shown to be compatible with the operational and administrative requirements of the voting environment. Typically, the vendor will be required to provide documentation of a product's proven performance, such as test reports to comparable standards. Products not in wide

commercial use, regardless of their performance histories, will require qualification, certification, and acceptance tests before they can be used. This requirement applies to the operating systems and monitors as well as to the application programs which control and do the work of ballot processing.

1.4. Decertification

The State Board of Elections reserves the right to reexamine and reevaluate any previously certified voting system for any reason, at any time. Any voting system that does not pass certification testing will be decertified. A voting system that has been decertified by SBE may not be used for elections held in the Commonwealth and may not be purchased by localities to conduct elections.

Part 2: Basis for Certification

There are three distinct levels of testing that a voting system must successfully complete before a voting system can be used in the Commonwealth of Virginia. These levels are **Federal Compliance Testing, State Certification Testing,** and **Acceptance Testing.**

Federal Compliance Testing demonstrates that a voting system complies with the requirements of the most recent version or versions of the VVSG/VSS currently accepted for testing and certification by the EAC. Primary evidence of compliance with these requirements is certification of the system by the EAC. However, federal compliance may also be demonstrated through certification by another state electoral authority that requires compliance with the applicable VVSG/VSS or through testing conducted by a federally certified VSTL to the applicable VVSG/VSS.

State Certification Testing is intended to assure that a voting system complies with the requirements of the Commonwealth of Virginia. State Certification further examines the readiness of a voting system for use under the election management procedures currently in use or proposed for use with the system. State Certification Testing is more specific than Federal Compliance Testing and examines the fit between the voting system and the specific requirements and practices of the Commonwealth.

Acceptance Testing assures that the system delivered is identical to that which was certified and is in good working condition.

2.1. Federal Compliance Testing

Federal Compliance Testing is performed to demonstrate compliance with the most recent version or versions of the VVSG/VSS currently accepted for testing and certification by the EAC. While EAC certification serves as primafacie evidence of compliance, federal compliance may also be demonstrated through certification by another state electoral authority that requires compliance with the applicable VVSG/VSS or through testing conducted by a federally certified VSTL to the applicable VVSG/VSS. SBE will make the final decision on compliance based on all available information. If there is evidence of a material non-compliance, the Commonwealth will work with the vendor to resolve the issue.

To support a review of Federal Compliance Testing, the following documents shall be provided to SBE:

1. A full copy of the Technical Data Package (TDP);

2. A copy of the Test Plan, Test Report and all Test Procedures and Test Cases used by the Voting System Test Lab (VSTL) in performing EAC certification testing or results of testing conducted by a VSTL to the applicable VVSG/VSS outside of the federal certification process;

3. A release to the VSTL to respond to any requests for information from the Commonwealth of Virginia;

4. A release to other states which have certified the system or prior versions of the system to respond to any requests for information from the Commonwealth of Virginia; and

5. Any additional information the State Board of Elections believes is necessary to determine compliance with the applicable Voluntary Voting System Guidelines or Voting System Standards.

2.1.1. Voting System Hardware Elements

All equipment used in a voting system shall be examined to determine its suitability for election use according to the appropriate procedures contained in this document. Equipment to be tested shall be identical in form and function with production units. Engineering or development prototypes are not acceptable.

Modifications to existing hardware that has been previously certified by SBE will invalidate the results of the prior certification unless it can be determined by the State Board of Elections that the change does not affect the accuracy, reliability, security, usability or accessibility of the system.

2.1.2. Voting System Software Elements

Voting system software shall be examined and tested to ensure that it adheres to the performance standards specified in the most recent version or versions of the VVSG/VSS currently accepted for testing and certification by the EAC.

Modifications to existing software that has been previously certified by SBE will invalidate the results of the prior certification unless it can be determined by the State Board of Elections that the change does not affect the accuracy, reliability, security, usability or accessibility of the system.

2.1.3. Reciprocity

The State Board of Elections may accept the qualification tests of the hardware and/or software of a voting system conducted by another state electoral authority that requires compliance with the applicable VVSG/VSS or through testing conducted by a federally certified VSTL to the applicable VVSG/VSS. Any such tests that are accepted may be used to support certification approval in conjunction with, or in lieu of, EAC or State Board of Elections testing. The procedure for transferring qualification tests results from another state or a VSTL is contained in the following sections (see Supporting Information in Part 3). This reciprocity does not, of course, extend to the "Compliance with the *Code of Virginia*" and the "Acceptance Tests" described below since these items are considered unique to Virginia.

2.2. State Certification Testing

State certification testing is intended to verify that the design and performance of the voting system seeking certification complies with all applicable requirements of the *Code of Virginia* and SBE regulations and policies.

The certification test is not intended to result in exhaustive tests of system hardware and software attributes; these are evaluated during federal compliance testing. However, all system functions, which are essential to the conduct of an election, will be evaluated.

An important focus of State Certification Testing is a review of experience with the current and prior versions of the system and the results of other state certification examinations. Any testing and or experiences of other states using the system may be considered. This review requires making inquiries of other users of the system. State certification reports and other evaluations of the system are read and analyzed for insight into the suitability of the system for use in Virginia.

The recommended use procedures are examined along with the voting system to determine how well the system will integrate into Virginia election law and management practices.

Testing is performed to evaluate the system with respect to the specific practices of Virginia. Testing will evaluate all system operations and procedures which:

a. Define ballot formats for a primary election, a general election, and a recount including all voting options defined by the *Code of Virginia*,

b. Install application programs and election-specific programs and data in the ballot counting device,

c. Verify system readiness for operation,

d. Count ballots,

e. Perform status tests,

f. Obtain voting data and audit data reports,

g. Support recount or election audits, and

h. Address compliance with physical and language accessibility requirements

The test environment will include the preparation and operation of election and voting databases, and the validation, consolidation, and reporting of administrative and voting data as required by law.

The state may perform hash testing of applications software to verify that the versions provided by the vendor are identical to the versions that have undergone federal compliance testing.

Certification testing will be complete after a successful test use of the equipment in an actual election (*Code of Virginia* §24.2-629 (E)) in one or more local jurisdictions, which have consented to conduct such a test. Successful completion of a test election shall include a post-election audit.

2.3. Acceptance Tests

Acceptance Tests will be conducted by the local jurisdiction, with the assistance of state officials or consultants. Acceptance testing will be performed as part of the procurement process for the voting system.

The local jurisdiction will conduct tests to confirm that the purchased or leased system to be installed is identical to the certified system and that the installed equipment and/or software are fully functional and capable of satisfying the administrative and statutory requirements of the jurisdiction. The state may require localities to perform hash testing of applications software for this purpose. SBE will request that upon acquiring equipment, the locality forwards a letter to SBE confirming that the versions of all software and model(s) of equipment received are identical to the certified system that was ordered.

Typically, the acceptance test will demonstrate the system's ability to execute its designed functionality as advertised and tested, including but not limited to:

a. Process simulated ballots for each precinct or polling place in the jurisdiction.

b. Reject overvotes and votes not in valid ballot positions.

c. Handle write-in votes.

d.   Produce an input to or generate a final report of the election, and interim reports as required.

e.   Generate system status and error messages.

f.   Comply with and enable voter and operator compliance with all applicable procedural, regulatory, and statutory requirements.

g.   Produce an audit log.

Part 3: Review and Approval Process

3.1. Summary of Process

These procedures are limited to those systems and equipment that have passed the prototype stage and are in full production and available for immediate installation and use. A total of six (6) steps have been established to carry out this process. These steps are designed so that the State Board of Elections can, at any point, make a determination to continue the evaluation.

3.2. Procedure for Certification

The evaluation of the voting system will proceed in the following steps:

Step 1: Letter of Request for Certification and Certification Fee
The certification evaluation procedure shall be initiated by a letter from the vendor of the voting system to the Secretary of the State Board of Elections requesting certification for either a specific voting system or for a software, firmware, or hardware modification to a certified voting system. A response letter will be sent to the vendor requesting the certification fee if SBE finds no reason to deny the request for certification based on a preliminary review of the request.

Vendors must pay an initial fee of $10,000 for new voting system certification requests and other fees as required for requests for modifications to a previously certified voting system. If SBE's actual costs for reviewing the vendor's submission exceed the amount of the initial fee, the vendor agrees to reimburse SBE for all additional costs incurred. All fees must be collected before certification will be granted.

The Commissioner of Elections of the Department of Elections or the Board's representative will notify the vendor of the earliest date after which the requested certification evaluation can begin.

Step 2: Technical Data Package and Corporate Information
The vendor shall submit the Technical Data Package, Corporate Information, and other material described in the next section of this document to an evaluation agent selected by the Commonwealth. The vendor will be supplied with the contact information of the evaluation agent.

The evaluation agent will review the Technical Data Package, Corporate Information, and other materials provided and notify the vendor of any deficiencies. Certification of the voting system will not proceed beyond this step until the Technical Data Package and Corporate Information are complete.

Step 3: Preliminary Review
The evaluation agent will conduct a preliminary analysis of the Technical Data Package, Corporate Information, and other materials provided and prepare an Evaluation Proposal containing the following information:

1.   Components of the voting system requiring evaluation.

2.   Identification of any additional materials needed to ascertain financial stability and capabilities of the vendor to maintain support of the voting system.

3.   Description of the activities required to complete the portion of the evaluation performed by the evaluation agent.

4.   Estimate of time required to complete the portion of the evaluation performed by the evaluation agent.

Step 4: Authorization to Proceed
The vendor will review the Evaluation Proposal and notify the Secretary of the State Board of Elections, in writing, of the desire to continue or terminate the evaluation process. A copy of this notification will be sent to the evaluation agent.

Step 5: Evaluation
The vendor will arrange for any "Non-operating, Environmental" testing if required and submit the results of these tests to the evaluation agent. After any required "Non-operating, Environmental" tests have been successfully completed, the evaluation agent will conduct the evaluation described in the Evaluation Proposal and submit a report of the findings to the State Board of Elections.

Step 6: Test Election
The State Board of Elections will supervise a test use of the system in an actual election with the vendor present prior to final certification.

Step 7: Certification
Based on the information contained in the report from the evaluation agent, the test election, and any other information in their possession, the State Board of Elections will determine whether the proposed voting system will be certified for use in the Commonwealth of Virginia and notify the vendor of the decision. In addition the Department of Elections will solicit a statewide contract from any vendor for voting systems certified for use in the Commonwealth.

3.3. Supporting Information

Request for Certification
The request to begin the certification process for a voting system shall be a letter addressed to:

        Commissioner of Elections
         Department of Elections
        1100 Bank Street, 1st Floor
        Richmond, Virginia 23219

This request shall be signed by a company officer and contain the following information:
1.   Identification of the specific voting system to be evaluated for certification. Each different voting system or version of a voting system requires a separate request for certification. Each component of the hardware, firmware, and software must be identified by version number.

2. Copies of documents substantiating completion of federal compliance testing, including whether the proposed voting system has been certified under the most recent version or versions of the VVSG/VSS currently accepted for testing and certification by the EAC in another state or by a VSTL.

3. Whether the proposed voting system has ever been denied certification or had certification withdrawn in any state or by the EAC.

4. A brief overview description of the voting system. Typical marketing brochures are usually sufficient for this description (8 copies).

5. Whether the proposed voting system or a version of the proposed voting system is currently used in Virginia or elsewhere. (List all locations where the system is used.)

6. A check or money order for the non-refundable certification fee must be included with this request before any certification work begins.

Technical Data Package

Before evaluation can begin, the vendor must submit to the evaluation agent a Technical Data Package. Each item in the package must be clearly identified; if the TDP is incomplete or the items in the package are not clearly identified, the entire package may be returned to the vendor and the evaluation of the voting system rescheduled.

The *Technical Data Package* must contain the following items, if they were not included in the TDP submitted to the VSTL:

1. *Hardware Schematic Diagrams*. Schematic diagrams of all hardware.

2. *Hardware Theory of Operations.* Documentation describing the theory of operation of the hardware.

3. *Customer Maintenance Documentation.* Documentation describing any maintenance that the vendor recommends can be performed by a customer with minimal knowledge of the system.

4. *Operations Manual.* Operations documentation that is normally supplied to the customer for use by the person(s) who will operate the equipment.

5. *Recommended Use Procedures.* Specific election administration procedures recommended for use with the system.

6. Definition of Marked Oval. Define the system thresholds used to declare a readable mark in an oval to be read by the scanner.

7. *Software License Agreement.* The software license agreement must be perpetual. An annual renewable support fee may be included as an option.

8. *Software Source Code.* Source code of the software and firmware is not required ifit was submitted pursuant to federal certification. SBE may, at its discretion, request copies of the source code if the system has not been certified by the EAC. *{If source code is required to be submitted, it shall be supplied in the form of a listing <u>and</u> in a machine-readable form on media that is readable by the voting system. If there is any chance of ambiguity, the required compiler must be specified.}*

9. *Software System Design.* Documentation describing the logical design of the software. This documentation should clearly indicate the various modules of the software, their functions, and their interrelationships with each other. The minimum acceptable documentation is a system flowchart.

10. *Customer Documentation.* A complete set of all documentation which is available to the purchaser/user of the voting system. Clearly identify the documentation which is included in the cost of the system and the documentation which is available for an additional charge.

11. *Standard Contract.* Statement of deliverables to include: verification statement that equipment purchased is identical to equipment certified by the State Board of Elections, software licenses, warranties, support services provided, etc. and associated cost of each.

12. *Warranty.* The period and extent of the warranty and the method of repair/replacement for all hardware items; the circumstances under which equipment is replaced rather than repaired and the method by which a user requests such replacement; additional warranties that are available over and above the standard warranty, what these warranties cover, and their costs; the period and extent of warranty and the method of correction or replacement for all software provided as part of the voting system; and the technical documentation provided with all hardware and software that is used to certify that the individual component will perform in the manner and for the specified time.

13. *Test Data/Software (Optional).* Any available test data, ballot decks, and/or software that can be used to demonstrate the various functions of the voting system or verify that the version of the applications submitted are identical to the versions that have undergone federal compliance testing (i.e. hash testing tools). Although optional, these items can significantly reduce the effort, and hence the time and cost, involved in the evaluation of the system.

14. *Recommended Security Practices.* Documentation of the practices recommended by the vendor to ensure the optimum security and functionality of the system.

If the voting system is certified, the State Board of Elections will retain the Technical Data Package as long as the voting system is marketed or used in the Commonwealth of Virginia.

Transfer of Certification (Reciprocity)

If the voting system has successfully completed qualification testing by the EAC or another state, the State Board of Elections may accept the results of those tests. In this case, the Technical Data Package shall contain the following item in addition to the items described above:

Qualification Test Report. A certified copy of the results of the evaluation of the voting system under the most recent version or versions of the VVSG/VSS currently accepted for testing and certification by the EAC. This report must clearly identify the system evaluated, specifying the version numbers of all components of the hardware, firmware, and software. The evaluation report or an accompanying letter shall identify the state for which the evaluation was performed, the responsible state official, the organization conducting the evaluation, and the individual responsible for the evaluation. This report must be sent to the State Board of Elections directly from the organization which conducted the evaluation. This report will not prohibit the state from evaluating the voting system and testing all components of hardware, firmware and software to ensure it complies with the Code of Virginia.

Corporate Information

Before evaluation can begin, the vendor must submit to the evaluation agent the Corporate Information as detailed below with each item clearly identified. If the Corporate Information is incomplete or the items in the package are not clearly identified, the entire package may be returned to the vendor and evaluation of the voting system rescheduled.

The Corporate Information shall contain the following items:

1. History and description of the business including year established, products and services offered, areas served, branch offices and subsidiary and/or parent companies.

2. Management and staff organization, number of full time employees by category, number of part-time employees by category, resumes of key employees who will assist Virginia localities in acquiring the system if it is authorized for use.

3. Audited Report of the business' most current fiscal year. Multiple reports may need to be submitted depending on the business' fiscal calendar and the length of time to complete the certification process. Certification can take as long as a year.

4. Comfort letter from the business' primary bank. If the business uses more than one, multiple comfort letters must be submitted.

5. Financial history of the business including a financial statement for the past three (3) fiscal years. If the vendor is not the manufacturer of the equipment for which application is made, include a financial statement for the manufacturer for the past three (3) fiscal years.

6. Gross sales in voting products and services for the past three (3) years and the percent that is representative of the total sales of the business and its subsidiaries.

7. The location and manufacturing capability of each manufacturing facility that is used to fabricate and assemble all or any component part of the voting and/or tabulating system being submitted for certification.

8. The location and servicing capability of each service facility that will be used to service the voting and/or counting system for certification and the service limitation of the facility.

9. If publicly traded, indexes rating the business debt.

10. Quality assurance process used in the manufacturing of the voting system.

11. Configuration management process used with the voting system.

If the voting system is certified, the State Board of Elections will retain the Corporate Information as long as the voting system is marketed or used in Virginia. The Department of Elections will sign a statement of confidentially for corporate information only.

Proprietary Information
The vendor must clearly mark any information it requests be treated as confidential and proprietary before providing it to Virginia representatives for evaluation. It is not sufficient to simply state that everything is proprietary. Every page of documentation that contains information the vendor considers proprietary information must be clearly marked. The State Board of Elections cannot guarantee the extent to which any material provided will be exempt from disclosure in litigation or otherwise.

3.4. Audit and Validation of Certification

It is the responsibility of both the vendor and the local jurisdiction to ensure that a voting system that is supplied or purchased for use in the Commonwealth of Virginia has been certified by the State Board of Elections. It is the responsibility of the vendor to submit any modifications to a previously certified voting system to the State Board of Elections for review.

If any question arises involving the certification of a voting system in use in Virginia, the hardware and software system verification tools will be used to verify that the voting system in use is in fact identical to the voting system that was submitted for certification. Any unauthorized modifications to a certified system may result in decertification of the system by SBE or bar a voting system vendor from receiving certification of voting systems in the future.

3.5. Time Frame

The State Board of Elections reserves the right to terminate the certification process at any time if the vendor fails to proceed in a timely manner. In particular, if a period of three months expires between any request for information by the Board or its evaluation agent and the vendor's response to that request, the Board will terminate the certification process. If the certification process is terminated under this provision, the vendor will forfeit any fees received by SBE. Any certification process terminated under this provision must be re-initiated from Step 1, Section 3.2: Procedure for Certification.

The certification process is also terminated when:

a. SBE issues a determination regarding certification;

b. The Vendor withdraws from the process; or

c. The system fails the certification test; or

d. The vendor cannot conduct the certification testing with the equipment on-hand.

The process can only be re-initiated from Step 1, Section 3.2: Procedure for Certification, if the process is terminated under conditions a., b., c. or d.

Part 4: Appendix A - Glossary

The following terms are defined in SBE Policy 2009-001, Voting Equipment Security.

Acceptance Testing - The purpose of acceptance testing is to demonstrate and confirm to the greatest extent possible that the voting systems purchased or leased by a local jurisdiction are <u>identical</u> to the voting systems certified by the State Board of Elections and that the voting systems equipment and software are fully functional and capable of satisfying the administrative and statutory requirements of the local jurisdiction. Acceptance testing is conducted when voting systems are initially received by the local electoral board from a vendor or other outside source (e.g., another local jurisdiction).

Certification Testing - The purpose of certification testing is to verify that the design and performance of the voting system being tested comply with all of the requirements of the *Code of Virginia*. Certification testing is not intended to exhaustively test all of the voting system hardware and software attributes; these are evaluated during qualification testing by an approved VSTL. However, all voting system functions, that are essential to the conduct of an election and a recount, are evaluated.

Evaluation Agent – An independent outside consultant selected by the State Board of Elections to conduct certification testing of voting systems.

Qualification Testing - The purpose of qualification testing is to demonstrate that the voting system complies with the requirements of its own design specifications. This testing encompasses selective in-depth examination of software; inspection and evaluation of voting system documentation; tests of hardware under conditions simulating the intended storage, operation, transportation, and maintenance environments; and tests to verify system performance and function under normal and abnormal operating conditions. Qualification testing is normally conducted by a Voting System Test Laboratory (VSTL).

Voting System - The term "voting system" refers to the total combination of mechanical, electro-mechanical, electronic and digital equipment (including the software, firmware, and documentation required to program, control, and support the equipment) that is used to: define ballots; verify voter registration; cast and count votes; report or display election results; recount votes or produce audit records or support election recounts or audits; and to maintain and produce any review trail information; and the practices and associated documentation used to: identify voting system components and versions of such components; test the system during its development and maintenance; maintain records of system errors and defects; to determine specific system changes to be made a system after the initial qualification of the system; and make available any materials to the voter (such as notices, instructions, forms, or paper ballots).

Voting System Test Laboratory (VSTL): Test laboratory accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) to be competent to test voting systems. When NVLAP has completed its evaluation of a test lab, the Director of NIST will forward a recommendation to the EAC for the completion of the accreditation process.

Part 5: Appendix B - Contacts

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