

**VOLUNTARY VOTING SYSTEM GUIDELINES DOCUMENT COMPARE  
SECTION 1**

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### 1 Introduction

#### 1.1 Objectives and Usage of the Voluntary Voting System Guidelines

The Voluntary Voting System Guidelines specify minimum functional requirements, performance characteristics, documentation requirements, and test evaluation criteria for national certification of voting systems. For the most part, these voluntary guidelines address what a voting system should reliably do, not how system components should be configured to meet these requirements. It is not the intent of the Guidelines to impede the design and development of new, innovative equipment. Furthermore, the Guidelines balance risk and cost by requiring voting systems to have essential, but not excessive, capabilities.

The Guidelines are not intended to define appropriate election administration practices. However, the total integrity of the election process can only be ensured if the use of voting systems certified to these Guidelines is coupled with effective election administration practices.

The Guidelines are intended for use by multiple audiences to support their respective roles in the development, testing, and acquisition of voting systems:

- ◆ Authorities responsible for the analysis and testing of such systems in support of certification of systems for purchase within a designated jurisdiction;
- ◆ State and local agencies evaluating voting systems to be procured within their jurisdictions; and
- ◆ Designers and manufacturers of voting systems.

#### 1.2 Brief History of Voting System Standards

The first voting system standards were issued in January 1990, by the Federal Election Commission (FEC). This document included performance standards and testing procedures for Punchcard, Marksense, and Direct Recording Electronic (DRE) voting

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Deleted: State and local officials today are confronted with increasingly complex voting system technology and an increased risk of voting system failure. Responding to calls for assistance from the states, the United States Congress authorized the Federal Election Commission (FEC) to develop voluntary national voting systems standards for computer-based systems. The resulting FEC Voting System Standards ("the Standards") seek to aid state and local election officials in ensuring that new voting systems are designed to function accurately and reliably, thus ensuring the system's integrity. States are free to adopt the Standards in whole or in p [... [26]

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~~systems. These standards did not cover paper ballot and mechanical lever systems because paper ballots are sufficiently self-explanatory not to require technical standards and mechanical lever systems are no longer manufactured or sold in the United States. The FEC also did not incorporate requirements for mainframe computer hardware because it was reasonable to assume that sufficient engineering and performance criteria already governed the operation of mainframe computers. However, vote tally software installed on mainframes was covered.~~

~~A national testing effort was developed by the National Association of State Election Directors (NASED). This testing program was initiated in 1994. As the system qualification process matured and qualified systems were used in the field, the NASED Voting Systems Board, in consultation with the testing labs, identified certain testing issues that needed to be resolved. Moreover, rapid advancements in information and personal computer technologies introduced new voting system development and implementation scenarios not contemplated by the 1990 Standards. In 1997, NASED briefed the FEC on the importance of keeping the Standards up-to-date. Following a Requirements Analysis completed in 1999, the FEC initiated an effort to revise the 1990 Standards to reflect the evolving needs of the elections community. This resulted in the 2002 Voting Systems Standards.~~

### 1.3 Voluntary Voting System Guidelines

~~In 2002, Congress passed the Help America Vote Act, which established the U.S. Election Assistance Commission (EAC). EAC was mandated to develop and adopt new voluntary voting system guidelines and to provide for the testing and certification of voting systems. HAVA also established the Technical Guidelines Development Committee (TGDC) with the duty of assisting the EAC in the development of the new guidelines. The Director of the National Institute of Standards and Technology (NIST) chairs the TGDC, and NIST was tasked to provide technical support to their work. The TGDC delivered an initial set of recommendations to the EAC, which the EAC modified somewhat to develop these proposed Voluntary Voting System Guidelines.~~

### 1.4 Accessibility for Individuals with Disabilities

~~Voters and election officials who use voting systems represent a broad spectrum of the population, and include individuals with disabilities who may have difficulty using traditional voting systems. In developing accessibility provisions for the 2002 Voting System Standards, the FEC requested assistance from the Access Board, the federal agency in the forefront of promulgating accessibility provisions. The Access Board submitted technical standards to meet the diverse needs of voters with a broad range of disabilities. The FEC adopted the entirety of the Access Board's recommendations.~~

**Deleted:** used in the United States.” (2 U.S.C. §431 Note) The resulting 1983 study cited a substantial number of technical and managerial problems that affected the integrity of the vote counting process. It also asserted the need for a federal agency to develop national performance standards that could be used as a tool by state and local election officials in the testing, certification, and procurement of computer-based voting systems. In 1984, Congress approved initial funding for the Standards.

**Deleted:** The FEC held a series of public hearings in developing the initial Standards. State and local election officials, election system vendors, technical consultants, and others reviewed drafts of the proposed criteria. The FEC considered their many comments and made appropriate revisions. Before final issuance, the FEC publicly announced the availability of the latest draft of the Standards in the Federal Register and requested that all interested parties submit final comments. The FEC meticulously reviewed all responses to the notice and incorporated corrections and suitable suggestions. Ultimately, the final product was the result of considerable deliberation, close consultation with election officials, and careful consideration of comments from all interested parties. In January 1990, the FEC issued the performance standards and testing pro... [33]

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and incorporated them into the 2002 Voting System Standards.

The Technical Guidelines Development Committee has built on this foundation and specified further requirements for making voting systems more accessible and easier to use by all voters. Section 2.2.7 of the Guidelines, Human Factors, presents revised and expanded requirements for the usability of voting systems.

Implementing these provisions, however, will not entirely eliminate the need to accommodate the needs of some disabled voters by human assistance. To facilitate jurisdictions in meeting accessibility needs, the Guidelines state that every voting system must incorporate some accessible voting capabilities. The Guidelines also state that systems incorporating a DRE component must meet specific technological requirements. To do so, it is anticipated that a vendor will have to either configure all of the system's voting stations to meet the accessibility specifications or will have to design a unique station that is part of the overall voting system configuration.

Under no circumstances should compliance with requirements for accessibility be viewed as mutually exclusive from compliance with any other provision of the Guidelines. If a voting system contains a machine uniquely designed to meet the accessibility requirements, such a machine will be tested for compliance with the accessibility requirements, as well as for compliance with all of the system performance requirements.

#### 1.5 Definitions

The Guidelines contain terms describing function, design, documentation, and testing attributes of voting system hardware, software and telecommunications. Unless otherwise specified, the intended sense of technical terms is that which is commonly used by the information technology industry. In some cases terminology is specific to elections or voting systems. A glossary of terms is contained in Appendix A. Nontechnical terms not listed in Appendix A shall be interpreted according to their standard dictionary definitions.

Additionally, the following terms are defined below:

- ◆ Voting system;
- ◆ Paper-based voting system;

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The FEC anticipates that during the lifetime of this version of the Standards increased obligations will be placed upon election officials at every jurisdictional level to provide voting equipment tailored to meet the needs of voters with disabilities. To facilitate jurisdictions in meeting accessibility needs, the Standards mandate that every voting system incorporate some accessible voting capabilities. The Standards

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- ◆ Direct recording electronic (DRE) voting system;
- ◆ Public network direct recording electronic (DRE) voting system;
- ◆ Precinct count voting system; and
- ◆ Central count voting system.

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### 1.5.1 Voting System 1

A voting system is a combination of mechanical, electromechanical, or electronic equipment. It includes the software required to program, control, and support the equipment that is used to define ballots; to cast and count votes; to report and/or display election results; and to maintain and produce all audit trail information. A voting system may also include the transmission of results over telecommunications networks.

Additionally, a voting system includes the associated documentation used to operate the system, maintain the system, identify system components and their versions, test the system during its development and maintenance, maintain records of system errors and defects, and determine specific changes made after system qualification.

Traditionally, a voting system has been defined by the mechanism the system uses to cast votes and further categorized by the location where the system tabulates ballots. However, the Guidelines recognize that as the industry develops new solutions and technology evolves, the distinctions between voting system types may become blurred.

Consequently, vendors that submit a system for certification testing that integrates components from more than one traditional system type or that includes components and technologies not addressed in the Guidelines shall submit the results of all beta tests of the new system. Vendors also shall submit a proposed test plan to the independent test lab to conduct national certification testing of voting systems. The Guidelines permit vendors to produce or utilize interoperable components of a voting system that are tested within the full voting system configuration.

### 1.5.2 Paper-Based Voting System

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A Paper-Based Voting System records votes, counts votes, and produces a tabulation of the vote count from votes cast on paper cards or sheets. A Punchcard voting system allows a voter to record votes by punching holes in designated voting response locations. A Marksense voting system allows a voter to record votes by making marks directly on the ballot, usually in voting response locations. Additionally, a paper-based system may record votes using other approaches whereby the voter's selections are indicated by marks made on a paper ballot by an electronic input device, as long as such an input device does not independently record, store, or tabulate the voter selections.

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#### 1.5.3 Direct Recording Electronic (DRE) Voting System

A Direct Recording Electronic (DRE) Voting System records votes by means of a ballot display provided with mechanical or electro-optical components that can be activated by the voter; that processes data by means of a computer program; and that records voting data and ballot images in memory components. It produces a tabulation of the voting data stored in a removable memory component and as printed copy. The system may also provide a means for transmitting individual ballots or vote totals to a central location for consolidating and reporting results from precincts at the central location.

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#### 1.5.4 Public Network Direct Recording Electronic (DRE) Voting System

A Public Network Direct Recording Electronic (DRE) Voting System is an election system that uses electronic ballots and transmits vote data from the polling place to another location over a public network as defined in Section 5.1.2. Vote data may be transmitted as individual ballots as they are cast, periodically as batches of ballots throughout the Election Day, or as one batch at the close of voting. For purposes of the Guidelines, Public Network DRE Voting Systems are considered a form of DRE Voting System and are subject to the standards applicable to DRE Voting Systems. However, because transmitting vote data over public networks relies on equipment beyond the control of the election authority, the system is subject to additional threats to system integrity and availability. Therefore, additional requirements discussed in Section 5 and 6 apply.

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The use of public networks for transmitting vote data must provide the same level of integrity as other forms of voting systems, and must be accomplished in a manner that precludes three risks to the election process: automated casting of fraudulent votes, automated manipulation of vote counts, and disruption of the voting process such that the system is unavailable to voters during the time period authorized for system use.

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### 1.5.5 Precinct Count Voting System

A Precinct Count Voting System is a voting system that tabulates ballots at the polling place. These systems typically tabulate ballots as they are cast and print the results after the close of polling. For DREs, and for some paper-based systems, these systems provide electronic storage of the vote count and may transmit results to a central location over public telecommunication networks.

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### 1.5.6 Central Count Voting System

A Central Count Voting System is a voting system that tabulates ballots from multiple precincts at a central location. Voted ballots are typically placed into secure storage at the polling place. Stored ballots are transported or transmitted to a central counting place. The systems produce a printed report of the vote count, and may produce a report stored on electronic media.

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### 1.6 Application of the Guidelines and Test Specifications

The Guidelines apply to all system hardware, software, telecommunications, and documentation intended for use to:

- ◆ Prepare the voting system for use in an election;
- ◆ Produce the appropriate ballot formats;
- ◆ Test that the voting system and ballot materials have been properly prepared and are ready for use;
- ◆ Record and count votes;
- ◆ Consolidate and report results;
- ◆ Display results on-site or remotely; and
- ◆ Maintain and produce all audit trail information.

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In general, the Guidelines define functional requirements and performance characteristics that can be assessed by a series of defined tests. Mandatory requirements are designated by use of the term “shall.”

Some voting systems use one or more readily available commercial off-the-shelf (COTS) devices (such as card readers, printers, or personal computers) or software products (such as operating systems, programming language compilers, or database management

# VOLUNTARY VOTING SYSTEM GUIDELINES DOCUMENT COMPARE

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systems). COTS devices and software are exempt from certain portions of the certification testing process as defined herein, as long as such products are not modified for use in a voting system.

Generally, voting systems are subject to the following three testing phases prior to being purchased or leased:

- ◆ National certification tests;
- ◆ State certification tests; and
- ◆ State and/or local acceptance tests.

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#### 1.6.1 National Certification Tests

National certification tests validate that a voting system meets the requirements of the Voluntary Voting System Guidelines and performs according to the vendor's specifications for the system. Such tests encompass the examination of software; the inspection and evaluation of system documentation; tests of hardware under conditions simulating the intended storage, operation, transportation, and maintenance environments; operational tests to validate system performance and function under normal and abnormal conditions; and examination of the vendor's system development, testing, quality assurance, and configuration management practices.

Certification tests address individual system components or elements, as well as the integrated system as a whole.

Since 1994, testing of voting systems have been performed by Independent Test Authorities (ITAs) certified by the National Association of State Election Directors (NASED). Upon the successful completion of testing, the ITA issued a Qualification Test Report to the vendor and NASED. The NASED Voting Systems Board would review the test report and if satisfactory, would issue a Qualification Number. The Qualification Number remains valid for as long as the voting system remains unchanged. HAVA mandates that the certification testing process be transferred from NASED to EAC, which will take place in the summer of 2005.

Upon receipt of satisfactory test reports that address the full scope of testing, EAC will issue a Certification Number that indicates the system has been tested by an accredited test lab for compliance with the Guidelines and qualifies for the certification process of states that have adopted the Guidelines. The Certification Number applies to the system as a whole and does not apply to individual system components or untested configurations.

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After a system has completed certification testing, further examination of a system is required if modifications are made to hardware, software, or telecommunications, including the installation of software on different hardware. Vendors request review of modifications by the test lab based on the nature and scope of changes made and the scope of the test lab's role in EAC certification. The test lab will asses the extent to which the modified system should be resubmitted for certification testing and the extent of testing to be conducted and will provide an appropriate recommendation to the EAC and the vendor.

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qualification .... [39]

Generally, a voting system remains certified under the standards against which it was tested, as long as no modifications requiring recertification have been made to the system. However, if a new threat to a particular voting system is discovered, it is the prerogative of EAC to determine which certified voting systems are vulnerable, whether those systems need to be retested, and the specific tests to be conducted. In addition, when new requirements supersede the requirements under which the system was certified, it is the prerogative of EAC to determine when systems that were certified under the earlier requirements will lose their certification, unless they are tested to meet current guidelines.

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are ...NASED...qualified ...  
standards...standards  
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Among other things, certification testing complements and evaluates the vendor's developmental testing and beta testing. The test lab is expected to evaluate the completeness of the vendor's developmental test program, including the sufficiency of vendor tests conducted to demonstrate compliance with the Guidelines as well as the system's performance specifications. The test lab undertakes sample testing of the vendor's test modules and also designs independent system-level tests to supplement and check those designed by the vendor. Although some of the certification tests are based on those prescribed in the Military Standards, in most cases the test conditions are less stringent, reflecting commercial, rather than military, practice.

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### 1.6.2 State Certification Tests

State certification tests are performed by individual states, with or without the assistance of outside consultants, to:

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- ◆ Confirm that the voting system presented is the same as the one certified under the Guidelines;
- ◆ Test for the proper implementation of state-specific requirements;
- ◆ Establish a baseline for future evaluations or tests of the system, such as acceptance testing or state review after modifications have been made; and

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### ◆ Define acceptance tests

State certification test scripts are not included in the Guidelines, as they must be defined by the state, with its laws, election practices, and needs in mind. However, it is recommended that they not duplicate the national certification tests, but instead focus on functional tests and qualitative assessment to ensure that the system operates in a manner that is acceptable under state law. If a voting system is modified after state certification, it is recommended that states reevaluate the system to determine if further certification testing is warranted.

Certification tests performed by individual states typically rely on information contained in documentation provided by the vendor for system design, installation, operations, required facilities and supplies, personnel support and other aspects of the voting system. States and jurisdictions may define information and documentation requirements additional to those defined in the Guidelines. By design, the Guidelines do not address these additional requirements. However, national certification testing addresses all capabilities of a voting system stated by the vendor in the system documentation submitted to a test lab, including additional capabilities that are not required by the Guidelines.

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### 1.6.3 Acceptance Tests

Acceptance tests are performed at the state or local jurisdiction level upon system delivery by the vendor to:

- ◆ Confirm that the system delivered is the specific system certified by EAC and, when applicable, certified by the state;
- ◆ Evaluate the degree to which delivered units conform to both the system characteristics specified in the procurement documentation, and those demonstrated in the national and state certification tests; and
- ◆ Establish a baseline for any future required audits of the system.

Some of the operational tests conducted during certification may be repeated during acceptance testing.

### 1.7 Conformance Clause

#### 1.7.1 Scope and Applicability

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The Voluntary Voting System Guidelines define requirements for conformance of voting systems that voting system vendors shall meet. The Guidelines also provides the framework, procedures, and requirements that testing labs responsible for the testing of voting certification systems shall follow. The requirements and procedures in the Guidelines may also be used by States to certify voting systems. To ensure that correct voting system software has been distributed without modification, the Guidelines include requirements for certified voting system software to be deposited in a national software repository. This provides an independent means for election officials to verify the software they purchase.

The Guidelines define the minimum requirements for voting systems and the process of testing voting systems. The guidelines are intended for use by:

1. Designers and manufacturers of voting systems,
2. Test labs responsible for the analysis and testing of voting systems in support of the EAC national certification process,
3. National software repositories, either maintained by the National Institute of Standards and Technology (NIST) or by another EAC designated repository,
4. Election officials, including election judges, poll workers, ballot designers and officials responsible for the installation, operation, and maintenance of voting machines, and
5. Test labs responsible for the state certification of voting systems.

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Minimum requirements specified in these guidelines include:

- Functional requirements,
- Performance characteristics,
- Documentation requirements,
- Test evaluation criteria, and
- Procedural requirements.

### 1.7.2 Conformance Framework

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This section provides the framework in which conformance is defined. It identifies the entities to which these guidelines apply, the relationship among the various entities and these guidelines, the structure of the requirements, and the terminology used to indicate conformance.

### 1.7.2.1 Applicable Entities

The requirements, prohibitions, options, and guidance specified in these guidelines apply to voting systems, voting system vendors, test labs, and software repositories.

In general, requirements for designers and manufacturers of voting systems in these guidelines apply to all types of voting systems, unless prefaced with explanatory narrative describing unique applicability. Other terms in these guidelines shall be construed as synonymous with “all voting systems.” They are:

- “all systems,”
- “systems,”
- “the system,”
- “the voting system,” and
- “each voting system.”

The term “voting system vendor” imposes documentation or testing requirements on voting systems, via the manufacturer or vendor. Other terms in these guidelines shall be construed as synonymous with “voting system vendor.” They are:

- “vendors,”
- “the vendor,”
- “manufacturer or vendor,”
- “voting system designers,” and
- “implementer.”

The terms used to designate requirements and procedural guidelines for system testing authorities are indicated by referring to testing authorities and test labs. The term “repository” will be used to designate requirements levied on the National Software Reference Library repository maintained at NIST or any other EAC designated repository.

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### 1.7.2.2 Relationships Among Entities

It is the voting system vendor that needs to implement these requirements and provide the necessary documentation for the system. In order to claim conformance to the Guidelines, the voting system vendor shall satisfy the specified minimum requirements, including implementation of functionality, prescribed software coding and assurance practices, and preparation of the Technical Data Package. To claim that a voting system is certified, the voting system vendor shall satisfy the requirements for certification testing and successfully complete the test campaign with an accredited voting system test lab.

An EAC accredited test lab shall satisfy the requirements for conducting certification testing. The EAC accredited test authority may use an operational environment emulating that used by election officials as part of their testing to ensure that the voting system can be configured and operated in a secure and reliable manner according to the voting system vendor's documentation and as specified by the Guidelines. The EAC accredited test lab shall coordinate and deliver the requisite documentation to the EAC for national certification and copies of the certified voting system software to the repository.

### 1.7.2.3 Structure of Requirements

Sections of this document that augment the 2002 Voting System Standards, by either replacing sections or adding new material, are indicated by line numbers, header and footer information, and hierarchically structured requirements. Each requirement is numbered according to a hierarchical scheme in which higher-level requirements (such as "provide accessibility for blind voters") are supported by lower-level requirements (e.g., "provide an audio-tactile interface"). Thus, requirements are nested. A nested requirement or lower-level requirement is a 'child' to its 'parent' or higher-level requirement.

Some of these requirements are directly testable and some are not. The latter tend to be higher-level and are included because 1) they are testable indirectly insofar as their lower-level requirements are testable, and 2) they often provide the structure and rationale for the lower-level requirements. Satisfying the lower-level requirements will result in satisfying its higher-level 'parent' requirement.

### 1.7.2.4 Conformance Designations

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# VOLUNTARY VOTING SYSTEM GUIDELINES DOCUMENT COMPARE

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A voting system conforms if all the stated requirements that apply to the voting system are independently demonstrated to be fulfilled. An implementation statement (see Section 1.7.6) or similar mechanism is used to describe the capabilities, features and optional functions that have been implemented and are subject to conformance and certification testing. There is no concept of partial conformance, e.g., a voting system is 80 percent conforming.

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#### 1.7.3 Conformance Language

The following keywords are used to convey conformance requirements.

- Shall – indicates a mandatory requirement in order to conform. Synonymous with “is required to.”
- Is prohibited – indicates a mandatory requirement that indicates something that is not permitted (allowed), in order to conform. Synonymous with “shall not.”
- Should, Is encouraged – indicates an optional recommended action, one that is particularly suitable, without mentioning or excluding others. Synonymous with “is permitted and recommended.”
- May – indicates an optional, permissible action. Synonymous with “is permitted.”

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• ... to indicate... to be followed (implemented)... ... [71]

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• ... to indicate... Normative ... [73]

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This text is directly applicable to achieving conformance to this document. Informative parts of this document include examples, extended explanations, and other matter that contain information necessary for proper understanding of the Guidelines and conformance to it.

#### 1.7.4 Categorizing Requirements

In addition to defining a common set of requirements that apply to all voting systems, the Guidelines categorize some requirements into related groups of functionality to address equipment type, ballot tabulation location, and voting system component (e.g., election management system). Hence, not all requirements apply to all elements of all voting systems. For example, requirements categorized as “DRE Systems” (as in Volume I, Section 2.4 3.3) are not applicable to paper-based voting.

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Among the categories defined in the VVSG are two types of voting systems with respect to mechanisms to cast votes – Paper-Based Voting Systems and Direct Record Electronic (DRE) Voting Systems. Additionally, voting systems are further categorized, in these guidelines, by the locations where ballots are tabulated – Precinct Count Voting Systems, which tabulate ballots at the polling place,

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# VOLUNTARY VOTING SYSTEM GUIDELINES DOCUMENT COMPARE

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and Central Count Voting Systems, which tabulate ballots from multiple precincts at a central location. The Guidelines define specific requirements for systems that fall within these four categories as well as various combinations of these categories.

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### 1.7.5 Extensions

#### 1.7.6

Extensions are additional functions, features, and/or capabilities included in a voting system that are not required by the Guidelines. To accommodate the needs of states that may impose additional requirements and to accommodate changes in technology, these guidelines allow extensions. Thus, a voting system may include extensions and

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still be conformant to the Guidelines. The use of extensions shall not contradict nor cause the nonconformance of functionality defined in the Guidelines.

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### 1.7.6 Implementation Statement

An implementation statement provides information about a voting system by documenting the requirements that have been implemented by the voting system. It can also be used to highlight optional features and capabilities supported by the voting system, as well as to document any extensions (i.e., additional functionality beyond what is required in the standard). An implementation statement may take the form of a checklist to be completed for each voting system for which a claim of conformance to the Guidelines is made.

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An implementation statement provides a concise summary and quick overview of requirements that have been implemented. The implementation statement may also be used to identify the subset of a test suite that would be applicable to the voting system being tested. If an implementation statement is provided, it shall include identifying information about the voting system, including at a minimum version and date information. Additionally, a narrative description of the voting system capabilities shall be included in the implementation statement.

### 1.8 Effective Date

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The Voluntary Voting System Guidelines shall become effective 24 months after its final adoption by EAC. At that time, every component of every voting system submitted for certification testing shall be tested according to these Guidelines. The Guidelines are voluntary, and it is up to the states to decide if, how, and when to adopt the Guidelines. Therefore, during the 24-month period that precedes the effective date of the Guidelines, a state may require voting systems used in the state to comply in whole or in part with the Guidelines, notwithstanding the effective date.

However, the effective date provisions do not apply to the mandatory provisions of Section 301(a) of the Help America Vote Act (HAVA), which states must comply with on or before January 1, 2006. While the Guidelines set requirements and measures against which voting systems can be examined, they may represent a higher standard than what is required by Section 301(a) of HAVA. To make sure states are able to be in compliance by the January 1, 2006 deadline, EAC will issue guidance to interpret Section 301(a).

**END OF EAC SECTION 1**

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**Deleted:** the broadest audience, including voting system developers, equipment manufacturers and suppliers, independent test authorities, local agencies that purchase and deploy voting systems, state organizations that certify a system prior to procurement by a local jurisdiction, and public interest organizations that have an interest in voting systems and voting systems standards. .

- . Section 2 describes the functional capabilities required of voting systems. .
- . Sections 3 through 6 describe specific performance standards for election system hardware, software, telecommunications and security, respectively. .
- . Sections 7 and 8 describe practices for quality assurance and configuration management, respectively, to be used by vendors, and required information about vendor practices that will be reviewed in concert with system qualification and certification test processes and system purchase decisions. .
- . Section 9 provides an overview of the test and measurement process used by test authorities for qualification and re-qualification of voting systems. .
- . Appendix A provides a glossary of important terms used in Volume I. .
- . Appendix B lists the publications that were used for guidance in the preparation of the Standards. These publications contain information that is useful in interpreting and complying with the requirements of the Standards. .
- . Appendix C addresses issues of use ... [78]