

The VVSG Version 1.1 Overview

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Overview

- Background and issues
- Selection criteria for ported material
- Overview of the ported material
- Associated testing material
- Next steps

Terminology

- VVSG – Voluntary Voting System Guidelines
- VVSG Version 1.1 - the revised version of VVSG 2005
- VVSG Version 2.0 - VVSG Next Iteration - the TGDC Recommendations of 2007

Background and Issues

- VVSG 2005
 - Required currently for new voting systems and significant updates to existing
 - An incremental update to 2002 VSS, but major gaps exist
 - But, no uniform, public test suites available for labs to use
- VVSG Version 2.0
 - Complete rewrite of VVSG 2005
 - Improved in many areas, e.g., security, reliability benchmarks
 - Tests being written, will be publicly available
 - Still in public review process, years from being required

VVSG Version 1.1

- Idea is to bridge gap between VVSG 2005 and 2.0 standards
- Port certain 2.0 material into 1.1
- Bring along the tests associated with the ported 2.0 material
- Do this in roughly one year

Steps

- EAC developed strategy for 1.1
- NIST proposed material, EAC made final decisions
- EAC and NIST addressed public review comments to 2.0 material to be ported
- NIST ported the updated 2.0 material to 1.1
 - Adjusted for differences in format and structure
- EAC to issue final versions and associated tests

Selection Criteria

- The material would improve testing of voting systems and fills major gaps
- The material would not require further research, is substantially ready for inclusion now
- It would not involve changes in hardware or significant changes in software
- Document creation, public review, final document can be produced within one year

Overview of Ported Material

- Human Factors – almost all requirements
- Security
 - VVPAT
 - Electronic records & Cryptography
 - System security specifications
 - External interface
- Core
 - S/W workmanship
 - Reliability & Accuracy
 - Humidity

Human Factors

- VVSG 2005 material was mostly new, based on research, best practices, and standards relating to human factors and the design of user interfaces
- 2.0 material consists of minor modifications, clarifications, and a few additions to VVSG 2005:
 - Usability performance benchmarks
 - Poll worker usability requirements
- Usability performance benchmarks still being researched, were not ported

Security - 1

- VVSG 2005 VVPAT section was all new material, based on research, state laws and regulations, best practices, and standards
- 2.0 material primarily a maintenance level upgrade to VVSG 2005
 - Improves the auditability and usability of the paper records
 - Ensures that sufficient information is printed on the record so that the systems can be used for early voting and in multi-precinct vote centers

Security - 2

- Electronic records requirements
 - Requirements were ported to require digital signatures on the electronic records
 - Software cryptographic modules can now be used in place of hardware modules
- System security specifications (documentation) requirements to assist test labs
 - More detailed templates being created as part of test materials

Security - 3

- VVSG 2005 contains a setup validation requirement to help ensure that only appropriate certified software is loaded
 - Permits an inquiry of the voting system software independent of the voting system software itself
 - Especially important in that VVSG 2005 permits DREs with no independent audit trail
 - This requirement would be implemented with special hardware
- As an alternative, new requirements were developed to help ensure that appropriate certified software is loaded
 - Voting software must be digitally signed
 - Digital signatures will be checked before loading
 - Can be implemented in software

Core Areas - 1

- Software workmanship requirements for coding standards, software integrity checks (e.g., error checking)
- Reliability & accuracy benchmarks (failures per ballot, et al.)
 - Replaces VVSG 2005's 163 hour MTBF benchmark
 - Does not include 2.0's volume test requirements
- Requirements for reliability & accuracy to be evaluated based on performance over course of entire testing engagement

Core Areas - 2

- Humidity - updated to require operational humidity testing as part of hardware tests
- Test plan and test report documentation requirements

Associated Testing Material

- All ported material comes with associated tests, drafts in Summer-Fall 2009
- Tests will be available publicly
- Will assist labs by giving them a uniform test suite for the ported material
- Can be used as a common basis for developing device-specific tests