



# Election Assistance Commission

## *EAC's Testing & Certification Program*

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VSAP Advisory Committee  
- November 4, 2011

# Overview

- EAC Functions
- Testing and Certification
  - 2005 VVSG
  - Certification Process Diagram
  - Enhancements to the Certification Program
  - Challenges
- Quality Monitoring Program
- Opportunities for Cooperation

# EAC Functions

- Testing and Certification
  - Quality Monitoring
  - Laboratory Accreditation
  - UOCAVA Activities
  - Standards Activities
- Election Administration and Voting Survey
- NVRA
- Grants


# Testing and Certification Division

- 5 Full time employees
- 5 technical reviewers with various specialties:
  - Testing Methodologies
  - Security
  - Software
  - Hardware Testing
- Program policies contained in two manuals:
  - Testing and Certification Program Manual
  - Voting System Test Laboratory Program Manual

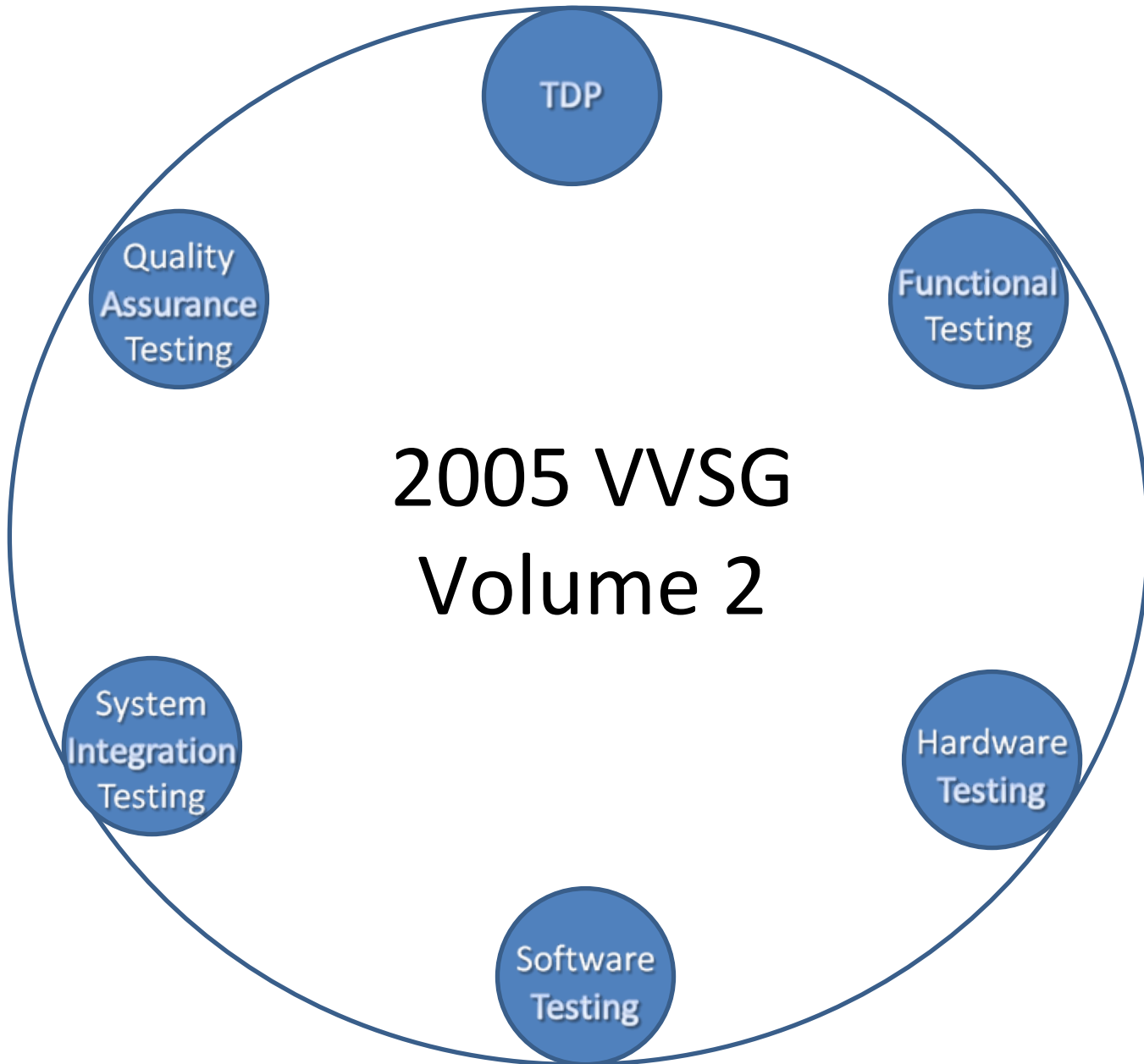
# Conformance Testing

- The EAC's Testing and Certification Program performs conformance testing.
- A voting system is submitted to the EAC for testing to a specific standard
  - (e.g. 2005 Voluntary Voting System Guidelines)
- A standard is composed of requirements
- The voting system must meet **all** requirements

# U.S. Voting Standards

1. 1990 VSS
2. 2002 VSS
3. 2005 VVSG 
4. Revision to the  
2005 VVSG (VVSG 1.1)
5. Next Iteration (VVSG 2.0)







# Out of Scope: 2005 VVSG

- Voter Registration Databases
- Ballot on Demand Systems
- Pollworker Usability and Accessibility
- Electronic Pollbooks
- Blank Ballot Delivery Systems
- Online Ballot Marking Systems

# Future of the VVSG

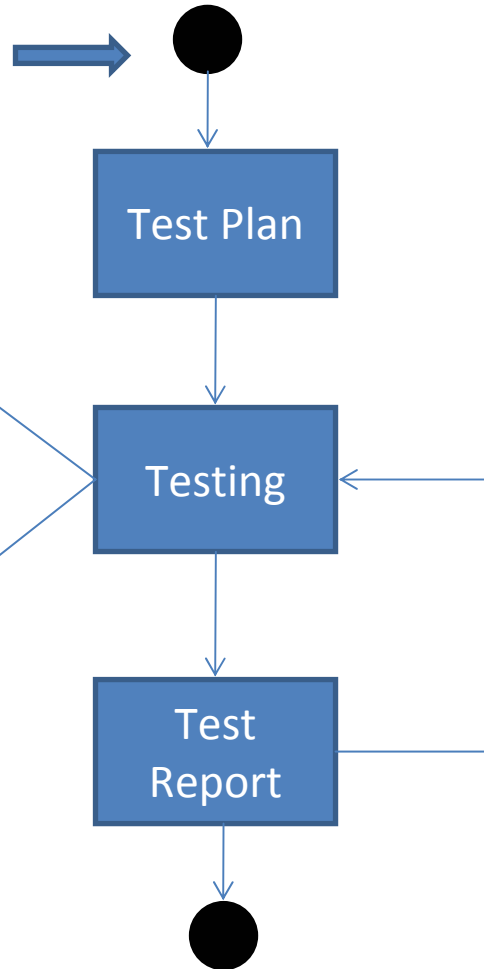
- Revision to the 2005 VVSG (VVSG 1.1)
  - This standard bridges the gap between 2005 VVSG and VVSG 2.0
  - When EAC has a Quorum of Commissioners, the Standard will be voted upon
- Next Iteration (VVSG 2.0)
  - EAC conducted 180-day public comment period
  - Additional TGDC research, requirements, public comment period, and EAC policy decisions
  - Projected release date of 2014

# Certification Process Diagram

Registered Manufacturer Submits System

## VVSG Vol. 1

1. Functional
2. Accessibility
3. Hardware
4. Software
5. Telecommunications
6. Security
7. Quality Assurance
8. Configuration Management



# Cost & Time of Testing

- Systems should take 4 – 8 months
  - System complexity
  - Preparedness of manufacturer
- Less than \$800,000
- Fastest full system certification was 7 months
  - Unisyn OpenElect Voting System 1.0
- Longest full system certification is 3+ years
  - Sequoia WinEDS 4.0 ... Why?
- Minor Modifications should take 1-3 months

# Certification Bottlenecks

- Source Code Review
- Technical Data Package Review
- System Readiness (Pre-Certification Testing)

# Pre-Certification Testing

- Internal manufacturer testing is key
  - Before EAC/VSTL testing
- Verify systems meet standard internally first
  - Causes less time, money
  - Systems to jurisdictions expeditiously
- Example: Source code review
  - Automated Tools
  - Accuracy Testing

# Program Enhancements

- Mark Recognition of paper-based systems
- Software Assurance
  - Shifting focus of source code review to security and reliability
- Quality Assurance / Configuration Management
  - Quality systems in; Quality systems out
  - Stabilize system naming conventions and code branches
    - Ex: Voting System Company New System 1.0, 1.4, 5.3
- Documentation and Technical Data Package
  - Often hundreds of documents for a single system
  - Difficult to comprehend

# Governmental System Submission

- Only registered manufacturers can submit systems
- EAC's program intends for:
  - *A manufacturer* to design and create a system
  - *A manufacturer* to submit a system for testing
  - *A manufacturer* to continue compliance
- If manufacturer does not continue compliance:
  - Informal Investigation
  - Formal Investigation
  - Decertification Procedures
- If a governmental body chooses to submit a system, they will be treated no differently than any other manufacturer



# Program Challenges

- Communication
  - Timelines
  - Social Media
  - Outreach to Advocacy Groups
  - Website
- Common Data Format
  - UOCAVA Blank Ballot specification pending completion
- Component Testing
- Cost & Time of Testing
- Encouraging Pre-Certification Testing

# Quality Monitoring (QM) Program

## Certification is the easy part

- Goal is to ensure continued compliance
- Systems used in the field must be identical to certified versions
- EAC performs field audits when asked by local jurisdictions
- Issue System Advisory Notices when needed

# Quality Monitoring Feedback Loop

- Without state participation, only half of the program is executed
- Reports on system performance
  - Clearinghouse of voting system reports
  - Assist other jurisdictions with similar equipment

# Quality Monitoring in Practice

- Manufacturer, LEO, and EAC reporting
- MicroVote System Advisory
  - As certification was granted
- ES&S System Advisory
  - During certification testing (potentially affected fielded systems)
  - After field reports and subsequent audits
- Dominion System Advisory
  - Self reported: Dominion Advisory Posted

# Opportunities for Cooperation

- Differences in state law and testing affect jurisdictions throughout the nation
  - May disproportionately affect small jurisdictions
- By combining various state requirements we can reduce the cost of testing
  - Example: States could travel to VSTLs while systems are under test
- Potential yearly state certification conference
- EAC interested in working with jurisdictions to create a better process

# Questions?

- Joshua Franklin
- [jfranklin@eac.gov](mailto:jfranklin@eac.gov)
- More information available at [www.eac.gov](http://www.eac.gov)
  - EAC Testing and Certification Program Manual
  - Test Plans and Reports
  - Voting systems under test
  - Certified voting systems
  - Accredited test laboratories