Voting System Qualification

How it happens and why

Life gets rich

- Many computerized voting systems
  - Computerized voting machines
  - Punch cards
  - Optical scan systems
  - Radical new concept: optical scan central count

Growing Reservations

- Voting system failures create tension
  - Big corporations run from the field
  - Election results are in doubt
  - Election officials become wary
  - Computer experts weigh in

Experts weigh in

- **Effective Use of Computing Technology in Vote Tallying.**
- 1975 Report by
  - National Bureau of Standards
  - Office of Federal Elections

Computing Technology

Basic cause of computer-related election problems was the lack of appropriate technical skills at the state and local level to develop or implement sophisticated Standards against which voting system hardware and software could be tested.

Congress responds

- In 1984, Congress appropriated funds for the Federal Election Commission to develop voluntary national standards for computer-based voting systems.

Voting System Standards 1990

- Performance and Test Standards for Punchcard, Marksense and Direct Recording Electronic Voting Systems issued by the FEC in January 1990.

Voting System Standards 2002

- These Standards are currently in effect.
- Included in HAVA as the basic voting systems guidelines for the new EAC
- They are in effect until they are revised or replaced by the EAC

How do we know?

- At first there was no formal process to show compliance with the VSS
- In 1994 National Association of State Election Directors (NASED) began a program to test voting systems and certify compliance
- Testing laboratories pass rigorous review to become qualified Independent Test Authorities approved by NASED

NASED
Voting Systems Board

- Oversees the Qualification process
- Works with the ITAs to assure compliance with the test standards
- Technical committee of 3 people who are both computer engineers and election experts reviews all ITA reports

After the ITA finishes testing

1. NASED Technical Review Committee evaluates the report.
2. Comments and questions by the Committee to the ITA.
3. ITA revises the report, if necessary.

After testing

4. The review and revision process continues until the report satisfactorily completes the review process.
5. **NASED issues a Qualification Number only after the review and revision process is completed.**
6. ITA issues Final Report.

State Certification Process

- Varies from state to state
- Some states have no formal process
- Others have more rigorous standards

Transition Soon

- EAC nearly ready to take over the process for approving and monitoring test laboratories
- Working with the National Institutes of Standards and Technology (NIST)
- Developing a process to contract with technical review board members & add others

January 2006

- The HAVA voting system standards take effect – Section 301.

Voting System Defined

- HAVA defines voting system as
- The total combination of mechanical, electromechanical, or electronic equipment (including the software, firmware, and documentation required to program, control, and support the equipment) that is used-

Voting system = everything

- Used
  - to define ballots;
  - to cast and count votes;
  - to report or display election results; and
  - to maintain and produce any audit trail information

Voting system includes

- the practices and documentation used--
- to identify system components and versions
- to test the system during its development and maintenance;

Voting system includes

- to maintain records of system errors, defects;
- to determine specific system changes to be made after initial qualification ;
- to make available any materials to the voter (such as notices, instructions, forms, or paper ballots)

HAVA & 2002 VSS

- Similar definitions of voting system
- Voting systems are tested as a whole, not in parts or components

- HAVA is federal law
- 2002 VSS required by Iowa law

HAVA Sec. 301 Voting System Standards

- **Each voting system used in an election for Federal office shall meet the following requirements**
  - **permit the voter to verify (in a private and independent manner) the votes selected by the voter on the ballot before the ballot is cast and counted;**

HAVA VSS, continued

- provide the voter with the opportunity … **to change the ballot or correct any error before the ballot is cast and counted** (including the opportunity receive a replacement ballot if necessary)

HAVA VSS, continued

- Correct overvotes before ballot is cast and counted
  - Notify the voter that she has overvoted
  - Effect of overvoting
  - Opportunity to correct

HAVA VSS, continued

- Counties using
  - paper ballots,
  - punch cards
  - Central count voting systems including
    - Absentee
    - Vote by mail
- Voter education program to meet the error correction requirements

Privacy & Confidentiality

- The voting system shall ensure that any notification required under this paragraph preserves the
  - **privacy of the voter and the**
  - **confidentiality of the ballot.**

Audit Capacity

Voting system must produce

- permanent paper record with a manual audit capacity
- Voter must be able to correct votes before the permanent paper record is produced
- Official record for any recount

Voting systems must be accessible

- For persons with disabilities
  - Nonvisual ballots
  - Privacy and independence
- One DRE or other accessible voting system in each polling place

New Standards

- EAC currently working on new Voluntary Voting System Standards (VVSG)
- Development by TGDC, NIST, public comment
- To be issued soon
- Effective date probably 2 years after adoption

Will my system be obsolete?

- VVSG is a voluntary standard
- State legislatures will determine whether to adopt the new VVSG and when they will apply

Summary

Questions