# TECHNOLOGY GUIDELINES DEVEOPMENT COMMITTEE CORE REQUIREMENTS SUBCOMMITTEE

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## Overall goals of Standards

- Bring order to the current chaos surrounding election administration
- Done well they will give election officials the tools to evaluate, purchase, implement and manage new or refurbished voting systems as well as heighten trust in the process
- Done poorly and they will be seen as the current voluntary standards have been recently characterized – something for vendors and election officials to hide behind.

- If written with overwhelming detail they might stifle creativity and competition that we need while increasing costs and complexity beyond what most jurisdictions can accommodate

  Example: Font sizes on paper ballots or prohibiting vendor support in small counties
- If written too broadly, they will leave too much room for insufficient testing, error, misinterpretation and finger pointing

  Example: California disagreement over program modifications

- The rush to find the perfect system has led us in the past four years to unintended consequences

  Example: Moving from punch cards to op-scan relieved the pressure on lines – moving back to some type of machine based system in the poll will reintroduce lines. Impatient voters will not vote

  We see this in the registration area in the constant balancing of voter access versus fraud prevention

- The past four years have seen major advances and setbacks in the development of voting systems
- Our failures can be tied to rushing to fill a void with untried technology, overreaching our skill sets to implement it, developing systems without adequate research or testing.
- Our systems today are being designed in reactive mode to a series of trendy but inconclusive conclusions

## FUNCTIONAL REQUIREMENT ISSUE

- Recognize that the current state of election reform faces insufficient funding, uncertain technical development, changing legal and social requirements (i.e. broadened absentee balloting) and a volatile political climate
- This is leading to a path where the majority of systems implemented over the next several years will be "blended systems".
- The standards need to address the inherent complexities of multiple system management

- STANDARDIZED NATIONAL DATA SET
  - Serve as the counting basis for all systems
  - Basic file structure of counting systems does not have to be complex - basically same as Edison's original design of converting voter choices to a series of numeric sequences
  - Involves the simplest of mathematical calculations – adding and computing percentages. Expansion of IRV at local levels could complicate but still far less complicated than systems such as my property tax programs

- Free up front end and back end development efforts for blended models
- Allow for more varied component development for targeted groups
- Enhance competition by relieving companies from the requirement to design "whole process" systems. Could reduce the current concentration of systems in the hands of a few vendors
- Simplify testing processes and enhance audit capabilities

FUNCTIONAL REQUIREMENT ISSUE

Current voting system development, testing and audit does not provide the transparency necessary for a healthy political environment

At some level the public interest for open reviewable systems outweighs the proprietary interests of equipment companies - particularly when the technology is generally not innovative but adapted components from non election based systems

Continued reliance on closed systems will further erode the public confidence

Lack of trust in the administration of elections has a demonstrable impact on the outcome

SOURCE CODE

- If not open then some level of reviewability in any election

- Example – my own experience with other systems (payroll) and previous experience with open source for ballot counting

Voter Verification /Authentication

- No system allows voter to verify that the ballot is counted as cast or completely prevents fraudulent ballots from diluting the voter's vote

Example: historical problems with counting paper ballots – subjectivity, fatigue and fraud – source of chain voting

- Voters in each system have ways to see how she may have marked the ballot
  paper / punch / screen
- No system guarantees that the processed used to count that ballot will tabulate it as marked, punched, touched or pressed.

Example: optical scan printing issues/Nevada "fleeing" voter

FUNCTIONAL REQUIREMENT
DEVELOPMENT OF STANDARDS
FOR PAPER/PRINTING

- Current standards ignore the printing function of paper based systems – security, reliability, transport, changeability usability failings of paper systems as well as the loss of privacy in second chance voting

MINIMIZE THE RELIANCE ON PAPER/PRINTING INTERFACES TO SYSTEMS

- Until significant field testing can occur, minimize printed output on any VVPAT. Determine the most accurate method of turning the numeric ballot sequences into readable form (preferably machine readable form i.e. bar code) or Ted Selker's concept of audio records.

FUNCTIONAL REQUIREMENT ISSUE

- There is insufficient data available in the current ballot counting structure to adequately research, design, develop, test, audit and review ballot systems
- In almost all voting systems, data is stored as aggregates of ballots rather than individual ballots
- I currently have at my disposal 10 to 20 years worth of detailed data in other governmental systems I manage – i.e. tax collections, property appraisal, payroll, accounts payable, investments. All of these systems are larger and more complex than the data structure of a ballot and are utilized in cross testing, overseeing, forecasting and modeling.

Consideration of storage/ of the numeric datasets by individual ballot (not traceable to specific voter) rather than aggregate

- Would allow for research and mining of data to address a host of usability, reliability, and public policy issues

Example – impact of ballot rotation

- Would allow for significantly higher rates of pre-election software testing

- VVPAT systems have numerous potential negative impact on the overall system
- A growing segment of the population will not be comfortable, at least initially, with electronically based systems
- Recognize than in the current climate, vendors are going to manufacture and election officials will be compelled to purchase VVPAT systems

FUNCTIONAL REQUIREMENT ISSUE

- Ballot systems are rapidly exceeding the skill set of our workforce – office and polls
- Current efforts to retrain/augment that workforce are meeting with mixed results
- Current standards do not adequately address skill sets/training requirements needed to effective manage the system

MANAGEMENT AND TRAINING STANDARDS

- Development of management standards and testing of training material usability
- Development of self training components within the system.

Example – recently purchased defibrillators that walk you through the process of defibrillation.