

TGDC Meeting

Scope of Standards and Testing

Washington, DC
February 8-9, 2016



Scope

- 1 : space or opportunity for unhampered motion, activity, or thought
- 2 : extent of treatment, activity, or influence
- 3 : range of operation



Scope

Future VVSG Development Goals
EAC Future VVSG Working Group
July 15, 2015

- 1. The purpose and scope of the VVSG must be defined and confirmed**

Why is this the highest priority recommendation from the Working Group?





Purpose of Standards and Testing

Standards and Testing have multiple purposes:

1. Statute/Rule checklist item
2. Indemnification
3. Assurance of functionality/quality
4. Illumination of behaviors, attributes, and interoperability of the system. Informs correct use and best-practice implementation

Ultimately the purpose is to reduce uncertainty and mitigate risk of adoption and use. This means context is important.





In the beginning...

Voting Machine





In the beginning...

Voting Machine

A machine is...

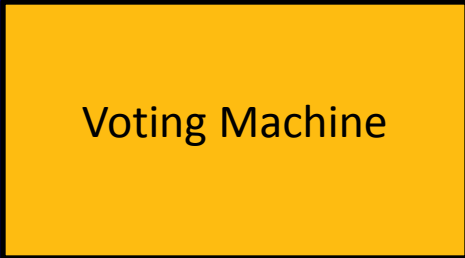
an apparatus using or applying mechanical power and having several parts, each with a definite function and together performing a particular task.

- Stand-alone
- Mechanical (electro-mechanical)
- Durable
- Finite in purpose
- Precinct-based
- Proprietary





Pre-HAVA



- Ballot design anomalies manifest in voting machine outcomes
- Auditability concerns manifest in voting machine design and limitations
- Age and design concerns are illuminated by research and audits
- HAVA passed, creating a path forward for replacing voting machines with systems that better addressed a constrained set of issues



HAVA definition

Voting System	
Define Bal.	Cap & Tab
Reports	Audits

... 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—

- (A) to define ballots;
- (B) to cast and count votes;
- (C) to report or display election results; and
- (D) to maintain and produce any audit trail information





What has changed since 2000?

- Everything.
- Statutes & Rules
 - HAVA
 - MOVE Act
 - Myriad of state statutes/rules on virtually every aspect of election administration, most of which impact voting system technology, directly or indirectly





What has changed since 2000?

- Operations
 - Advanced/Early voting
 - Voter ID
 - UOCAVA ballot delivery
 - Online Voter Registration
 - Vote Centers
 - Vote-by-Mail
 - Cost structure
 - Accessibility requirements
 - Security requirements





What has changed since 2000?

- Technology
 - Client-Server Architecture
 - Apps and ubiquitous computing
 - ePollbooks
 - Ballot-on-Demand
 - Precinct Management Systems
 - Online VR
 - Absentee Ballot Management Systems
 - Super VR systems with integrated functions
 - Multi-modal systems
 - Multi-vendor systems
 - COTS





What has changed since 2000?

- Voter Expectations
 - Transparency
 - Cost
 - Convenience
 - Speed



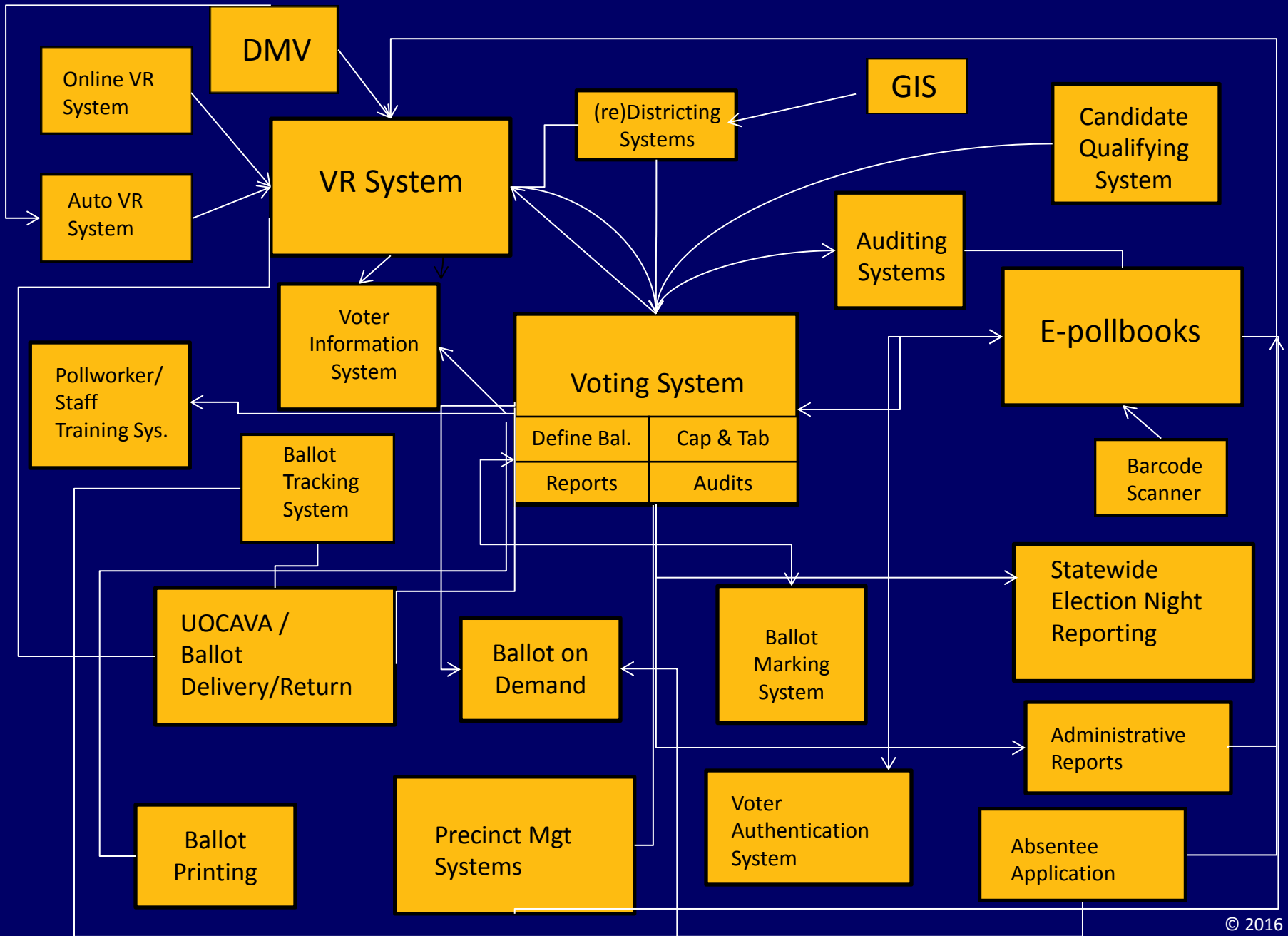
We created a construct – an abstraction - for viewing the voting system in a partial vacuum of operational complexity.

Voting System	
Define Bal.	Cap & Tab
Reports	Audits

This abstraction has purpose – it helped us isolate what we thought was important and simplify the scope of problems addressed by the systems and in turn, simplified the design and administration of standards and tests.

This abstraction and simplification has created a gap between the model and reality that has become increasingly difficult to manage.

Interaction of Voting and Election Systems





Election Systems

Those systems that collect, process and store data related to elections and election administration.

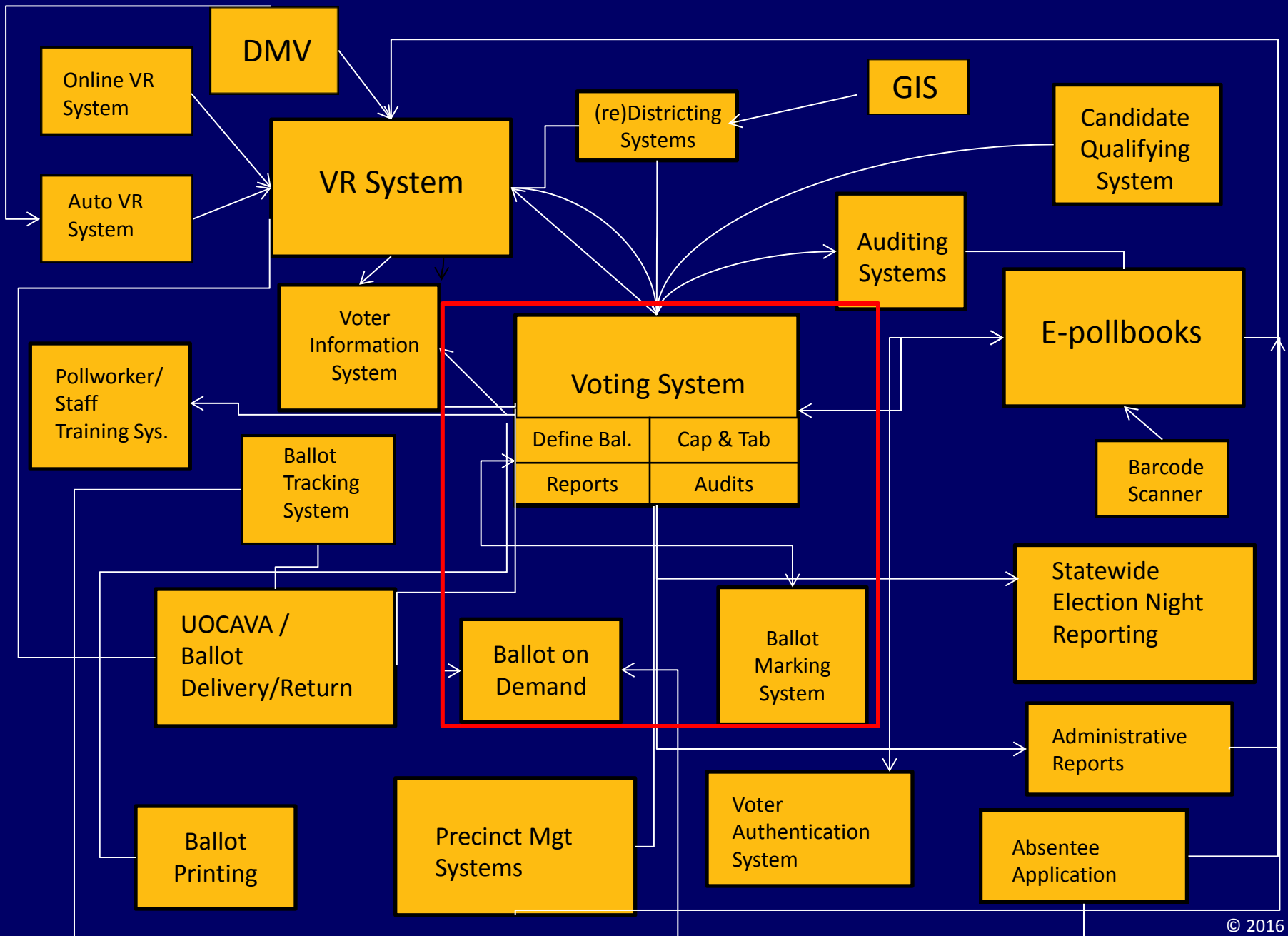
The core election system has traditionally been the voting system.

In the future, these systems will not be separable.

The extent of integration could make the boundary designation of a “voting” system, both impossible and irrelevant.



Interaction of Voting and Election Systems





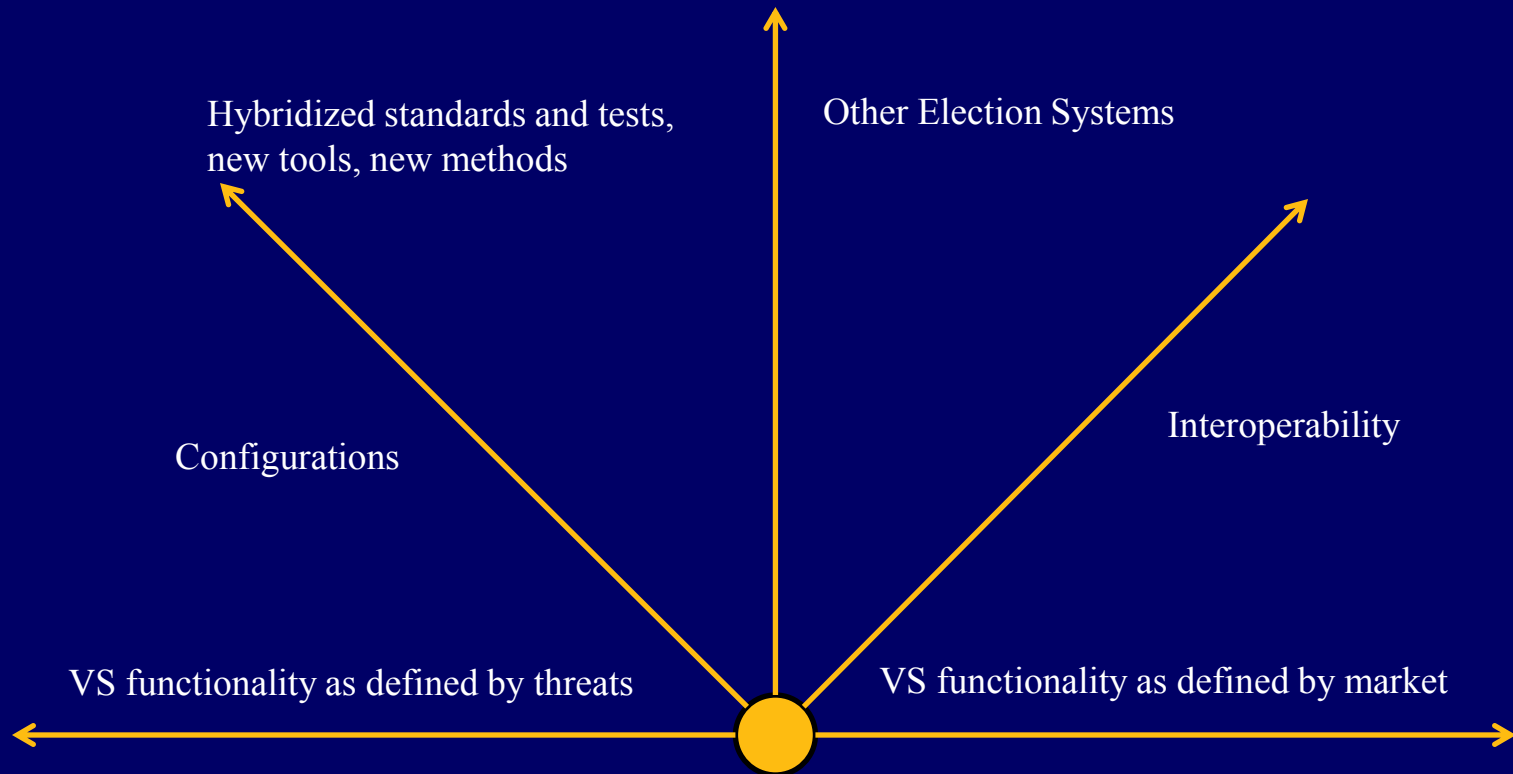
Scope

VS functionality as defined by HAVA





Scope





FAA Guidelines – an analogy

- 1926 – Safety of pilots, passengers, civilians, property. Advancement of the science and practice of commercial aviation.





FAA Guidelines

- 2016 – Pilots, aircraft, air traffic control, airports, training, maintenance, manufacturing and drones...





Challenge

For the VVSG to accomplish its highest level goals and remain relevant to the design, testing and certification of voting(election) systems, it must adapt.

That adaptation will include new tools, new organizational structure, and new perspectives – but it must also include a broadening of scope.





Challenge

Adapting the VVSG, and the processes used to create it, manage it, and apply it, is essential to its continued relevance. The scope of testing and validating systems must reflect the here-and-now as well as the future of election technologies.

“ All failures are failures to adapt. All successes are successful adaptations.” — *Max Mckeown*





Thank You!

Merle S. King
mking@kennesaw.edu

