Voting Methods Models

- Supports Data Interoperability & Data Integrity of vote data sets, for the variety of Voting Methods & Use Cases

- Enables Elections Administration (EA) voting systems counting, tabulation, mathematical evaluation, and other common operations on vote data sets to be valid to a high degree of confidence, accurate, and cost effective

- Use Cases: auditing, aggregation & roll-up, verification, evidence procedures, capacity planning, testing & certification, security, information privacy, logging & tracing, other common vote selection data set operations, legislative, RFPs
Voting Methods Models: Uses

- Audits, evidence-based election procedures, validation approaches and tests for voting system modules
- VVSG, legislators, elections officials, may reference precise voting methods definitions in legislation, rules, guidelines
- Elections officials and administrators, may unambiguously and precisely specify commonly understood requirements for operations on vote data sets in RFPs
- Elections systems manufacturers, software systems providers and elections analysts may characterize systems with confidence
Voting Methods Models : Project Plan

NIST 1500-X, initial version expected for next VVSG:

• Set of mathematical models for common operations on cast vote & vote selection data sets, representing plain language algorithmic definitions from U.S. elections legislation, guidelines

• Models implemented as precise and validated mathematical logic in an executable DSL, text & formula description, unique identifier

• UML model of voting methods universe, mapped to the EA business process models framework

• Set of Use cases to aid understanding & application

• Reference set of packaged tools and examples for validating executable models modules in particular configurations
Voting Methods Models: Specification

NIST 1500-X, initial version expected for next VVSG:

For each voting method/module in the specification:

- Unique Identifier, Numeric with Text Label
- Text description of model element, brief with pointer to references
- UML model index mapping the module to EA Business Process
- The written mathematical model in human readable domain specification language
- Set of test conditions and expected outcomes
- Index into an example ballot library illustrating use, including configuration, or testing
- Notes briefly describing information, if any, that would be crucial for an adopter of this standard or that may be exceptional, and a pointer to detailed information if necessary