

The IEEE Voting Systems Sponsoring Committee (VSSC)

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IEEE P1622

- Since approximately 2010, the IEEE P1622 working group has been pursuing the development of a common data format for election systems, focusing on development of XML schemas for device export and interoperability
- In 2011, P1622 published its first standard, which was designed to assist election officials in developing systems for electronic blank ballot distribution to overseas voters
- NIST became the primary backer of development within P1622 and, subsequently, work was begun on several additional standards

IEEE VSSC

- P1622 had reported directly to the IEEE Standards Activities Board as opposed to a sponsoring committee for historical reasons
- In 2013, the SAB recommended that the P1622 working group now pursue forming a sponsoring committee that would sit organizationally between the SAB and P1622
- The new sponsoring committee is known as the VSSC – Voting Systems Standards Committee
- Primary officers of the VSSC are:
 - John Wack, Chair (NIST)
 - Linda Harley, Vice-chair (Georgia Tech)

VSSC Working Groups

- 1622.2 – Election Results Reporting Interchange Format, Sarah Whitt, Chair (Wisconsin)
- 1622.4 – Election Data Modeling, Kenneth Bennett, Chair (LA County)
- 1622.5 – Election Systems Usability and Accessibility, Linda Harley, Chair (Georgia Tech)
- P1622 – Common Data Interchange Format for Election Systems, John Wack, Chair (NIST)
- Anticipating new working group on formal mathematical definitions of voting variations, e.g., ranked choice

VSSC membership

- Approximately 25 voting members, 65 non-voting observers
- NIST has sought out election officials and manufacturers who are subject matter experts and at the same time have a technical background
- Other groups have joined, including
 - ESS
 - Dominion
 - Unisyn
 - Associated Press
 - Members from the research community

Current status

- In 2014, the VSSC is expected to finalize two standards:
 - 1622.2 for election results reporting
 - P1622 for election event log export
- The VSSC will hold its next telecon in the approximate late July, 2014, timeframe. At that meeting, there may be discussion of additional working groups, e.g.,
 - To develop formal mathematical definitions for voting variations
 - To develop requirements for VRDB exports
 - To develop requirements for electronic poll books
 - To develop a common format for electronic cast vote records produced by tablet devices

1622.2 EMS/ENR export format

- Developed in conjunction with
 - ESS, Dominion
 - Hart, Unisyn aware but not participating yet
 - Election officials
 - AP, other organizations
 - Has required significant effort in order to accommodate all state architectures
- Features:
 - Devices will export directly or their exports will map to it
 - Accommodates ballots in correct rotations
 - Accommodates multiple naming/coding schemes for geo-political geographies
 - Includes election results/election night reporting
 - XML schema is generated directly from a UML data model
- Soon out for public review, is being tested in some states including for Ohio's recent primary
- NIST has developed translation s/w to convert back and forth with Pew's VIP version 3.0 feeds, translations work well

VSSC Issues

- NIST is the primary supporter and developer for the VSSC; this is both good and bad
 - Optimal for VSSC to be self-supporting
 - But, NIST can call the shots better as is
- The pace of standards development has been slower than desired, reasons include
 - Unavoidable time for start-up – finding the right people, understanding the right problems to solve, gathering the necessary information
 - Many participants wish to work as subject matter experts as opposed to developers
 - NIST is needed as a neutral 3rd party and to synthesize inputs from various groups and to provide technical support – pulled in many directions
 - Tension between election officials/manufacturers versus activists groups, who favor greater security in standards and transparency in development process, at a cost to pace of development
- Active management of working groups within IEEE is required for progress to occur; management takes time

VSSC Successes

- After considerable work, seems that a 'critical mass' of membership and expertise has been achieved
- Election officials are now a vital part of the VSSC and lead 2 of 4 working groups
- Several major manufacturers are involved, more involvement anticipated
- More recent focus on development of election data models as opposed to previous focus strictly on XML schemas is of greater value to new system/device developers
- Upcoming EMS/ENR schema is a significant standard; effect will be substantial
- IEEE is pleased with progress of VSSC
- VSSC praised in recent testimony to Congress by MIT's Charles Stewart 😊

For more information...

- VSSC website: <http://grouper.ieee.org/groups/1622>
- 1622.2 EMS/ENR draft standard:
<http://grouper.ieee.org/groups/1622/groups/2/index.html>
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