

Meeting Minutes
United States Election Assistance Commission
VVSG 2.0 Virtual Public Hearing
March 27, 2020

1335 East West Highway
Silver Spring, Maryland 20910

The following are the Minutes of the Public Meeting of the United States Election Assistance Commission (EAC) held March 27, 2020. The virtual meeting convened at 10:00 a.m. via Zoom web conference on Friday, March 27, 2020 and adjourned at 11:49 a.m.

PUBLIC MEETING

Call to Order

Chairman Benjamin Hovland called the meeting to order at 10:00 a.m.

Roll Call

Chairman Hovland called roll and found present Vice Chair Donald Palmer, Commissioner Christy McCormick, and Commissioner Thomas Hicks and declared a quorum present.

Adoption of the Agenda

Chairman Hovland called for a motion to approve the agenda, as submitted. After being seconded by Commissioner McCormick, the motion carried unanimously.

Welcoming Remarks and Opening Statements of Commissioners

Chairman Hovland thanked the members of the Technical Development Guidelines Committee (TGDC), EAC and NIST staff, members of the public, and the EAC's Standards Board and Board of Advisors for their hard work in drafting the VVSG 2.0 requirements.

Vice Chairman Palmer announced that this was the first of three public hearings that will be held on VVSG 2.0. Also announced two avenues that the EAC is using to solicit comments on VVSG 2.0: EAC Boards (Board of Advisors and Standards Board) and the 90-day public comment period via [regulations.gov](https://www.regulations.gov).

Commissioner Hicks expressed appreciation for everyone's participation and also announced the June 22nd deadline to receive public comments. Also acknowledged Acting Executive Director, Mona Harrington, and welcomed new EAC staff.

Commissioner McCormick highlighted importance of public engagement in the VVSG 2.0 development process and encouraged public engagement during the 90-day public comment period. Expressed that VVSG 2.0 must be reasonable to support voting systems that are viable and affordable for jurisdictions and emphasized that reliability is critical.

Opening testimony from the panelists

10:11 a.m.

Chairman Hovland introduced and welcomed Neal Kelly, Orange County Registrar of Voters and member of the TGDC.

Neal expressed appreciation to the commissioners for their leadership and guidance throughout the development process. TGDC engaged in robust discussions over the requirements.

Why is VVSG 2.0 better than VVSG 1.1? Interoperability, human factors, accessibility, and security. Interoperability is bold and brings much needed flexibility to voting systems. VVSG 2.0 is based on functions not solely devices.

One key question: what requirements should election officials be focused on? At minimum, high quality design – election definition, closing polls, tabulation. Transparency – security. Interoperability – how a voting system uses data. Auditability – ensures that voting systems are auditable and support evidence-based audits.

10:19 a.m.

Chairman Hovland introduced and welcomed the NIST panelists: Mary Brady – Voting Program Manager, Dr. Sharon Laskowski – Human Factors Technical Lead, and Gema Howell – Cybersecurity Technical Lead.

Mary expressed the goal of VVSG 2.0 is for voters to have an improved voting experience and that the final count expresses the true will of the voters. Mary addressed the changing landscape of elections, provided an overview of election systems, and highlighted the updates to the VVSG definition, which included: activate ballots for voters, record votes cast by voters, label ballots needing special treatment, export election data, and the ability to produce records in support of audits.

Mary provided an overview of the process to develop public working groups and the scope of each group: Pre-Election, Election, Post-Election, Usability and Accessibility, Cybersecurity, Interoperability, and Testing. Mary noted that the TGDC adopted the VVSG 2.0 Principles and Guidelines in September 2017 and provided an overview of the Principles and Guidelines.

Mary highlighted the proposed new structure for VVSG 2.0: Principles and Guidelines, Requirements, and Test Methods. She also explained the development process and provided an overview of major discussion items at each of the TGDC meetings from August 2019 to February 2020. Items that were discussed during the meetings: common data formats, indirect voter associations, barcodes, wireless, internet technology, E2E systems, voting system definition, accessibility and security, and clear boundaries between voting and election systems.

Mary highlighted what is new with the VVSG 2.0 Requirements:

- Inclusion of industry and technology best practices
- Human factors reference federal accessibility standards, Section 508, and Web Content Accessibility Guidelines
- Updated voter interface requirements
- Common data formats
- Low-level support for risk-limiting audits
- Defensive coding practices, reliability, and electrical requirements were reviewed, updated, and streamlined
- Testing and certification guidance will be moved to the EAC's Testing and Certification Program Manual
- New security requirements for software independence and advanced auditing methods
- Dedicated section on ballot secrecy
- Two-factor authentication is mandated for critical voting operations
- Cryptographic protection and new system integrity requirements
- All sections of the prior VVSG were reviewed, rethought, and updated

Mary provided an overview of the core requirements: High Quality Design, High Quality Implementation, Transparency, and Interoperability. She also highlighted that changes to the core requirements:

- Voting functions are organized as phases of an election
- Ensures usability, security, and reliability are designed from the start
- Strengthened documentation requirements
- Updated coding practices
- Streamlined electrical requirements

- Mandates greater interoperability and moves VVSG closer to component certification
- Manufacturer must document data format
- All hardware interfaces must use common methods and standards
- Barcodes and other data encodings must use open standards and include documentation
- Updated guidance and technical references
- Comprehensive documentation for design, evaluation, and operation is detailed in the transparency section

Mary concluded her testimony by mentioning the four types of common data formats that have been published by NIST: NIST 1500-102 Cast Vote Records, NIST 1500-101 Election Event Logging, NIST 1500-100 Election Results Reporting, and NIST 1500-103 Voter Records Interchange.

10:40 a.m.

Dr. Sharon Laskowski provided an overview about human factors requirements: accessibility, usability, and privacy. Human factors requirements are in Principles 5 through 8 and one requirement in Principle 2. Sharon covered the goals for updating the accessibility and usability requirements for VVSG 2.0. A universal design approach was used in developing the human factors requirements.

Sharon highlighted the key updates to the requirements, which included text size, plain language, ballot review and verification. She also discussed:

- Equivalent and consistent voter access modes of voting (Principle 5)
- Voter privacy (Principle 6)
- “POUR Principles” – perceivable, operable, understandable, and robust (Principle 7)
- Robust, safe, usable, and accessible (Principle 8)
- High quality implementation (Principle 2, Guideline 2.2)

10:51 a.m.

Gema Howell provided a security overview by discussing an expanding threat model, which includes natural disasters and nation-state attacks. Gema then discussed innovations since 2007 in industry (stronger network protocols and security frameworks) and in voting systems (risk-limiting audits and E2E protocols). Security requirements are mostly under Principles 9 through 15 and some are under Principle 2.

Gema stepped through each principle and provided highlights of changes in each principle.

- Principle 9 – Auditable: software independence, E2E, and support for audits
- Principle 10 – Ballot Secrecy: distinguishes between ballot secrecy from voter privacy, no voter information in the voting system, and prevents the ability to associate a voter with their ballot selections
- Principle 11 – Access Control: strengthen access monitoring and requires multifactor authentication
- Principle 12 – Physical Security: logs physical connections and disconnections and restricts physical access to voting system ports that accommodate removable media
- Principle 13 – Data Protection: protects artifacts and transmitted data
- Principle 14 – System Integrity: improves system integrity including system hardening and secure configurations
- Principle 15 – Detection and Monitoring: additional log types and updateable and configurable detection and monitoring systems

Gema discussed remote ballot marking. VVSG 2.0 requirements do not apply to remote ballot marking devices and applications. However, remote ballot marking devices must comply with federal accessibility requirements.

Gema discussed external network connections such as electronic pollbook and modems used for transmitting results. She also addressed the security concerns associated with those connections and possible solutions to address those concerns. Gema discussed internal wireless connections such as Bluetooth keyboard and mouse with an election management system, and highlighted security concerns and how the requirements addressed the concerns including how voters can use assistive technology with voting systems.

Gema concluded her testimony by summarizing the security changes that were made in developing the VVSG 2.0 Requirements.

Questions and Answers:

11:12 a.m.

Chairman Hovland started off the Q&A by asking Mary if the requirements provided enough detail for manufacturers to build voting systems. Mary confirmed that the requirements do provide that detail. Commissioner Hovland followed up by asking if the new systems would reflect modern technology. Mary confirmed that NIST updated all of the requirements to reflect modern and best practices.

Chairman Hovland asked Sharon if the voter experience would be more user friendly compared to current voting equipment. Sharon confirmed that they would provide a better experience.

Chairman Hovland asked Gema if she was confident that new voting systems would be more secure than current voting systems. Gema confirmed that they would.

Chairman Hovland asked Neal to discuss the impact of the requirements on election officials in the years to come. Neal responded that he think they would because they provide more flexibility.

Vice Chairman Palmer asked the panelists the impact of air gaps in polling locations. Neal responded by stating that he currently has air gaps with his voting system and that he doesn't think the requirements are onerous. Mary responded that NIST had many conversations with manufacturers and election officials regarding air gaps. Manufacturers had no issue with it and election officials preferred it.

Vice Chairman Palmer followed up with asking about the transmission of results from a polling place. Gema responded that the requirements stop at the export of date and that transmission of results from a polling place are not covered by the requirements

Commissioner Hicks asked Mary, Sharon, and Neal if they could talk about the discussions the TGDC had about voting systems. Neal responded that the TGDC had a lengthy discussion about the number of devices that would be required in a polling place. Mary responded that NIST highlighted requirements that are legal requirements that manufacturers must be followed. Sharon added that accessibility has always been mandated and that we shouldn't underestimate the number of devices that should be required and that poll worker proper training take place.

Commissioner Hicks asked if the manufacturers would build universal equipment with the new requirements similar to cellphones. Sharon responded that the requirements support universal design.

Commissioner Hicks followed up by asking about the percentage of usage for accessible voting equipment. Sharon responded that accessibility devices have broad coverage. Neal mentioned that universal design is ideal.

Commissioner Hicks asked Gema if a poll worker inputting data would increase risk of errors. Gema responded that there is always a potential for user error.

She tried to share two options: barcode scanner or user to verify if information is correct.

Commissioner McCormick thanked the panelists and asked Mary if NIST took into account that requirements may be too difficult for manufacturers to meet. Mary responded that NIST took that into consideration. NIST also heard from manufacturers that they may be hold off building new voting systems until the new requirements are approved.

Commissioner McCormick asked Neal about how COTS would benefit election officials and why TGDC allowed them in the VVSG 2.0 requirements. Neal provided an example of a printer going down in a legacy system and how election officials would be able to purchase COTS hardware in a pinch.

Commissioner McCormick asked Gema to explain what changes were needed to make for risk-limiting audits. Gema responded that there was some key items that needed to be added to allow for conducting risk-limiting audits including identifiers, which led to additional requirements to ensure that an identifier cannot be linked to a voter.

Commissioner McCormick asked Gema to explain software independence. Gema explained that software independence provides the capability to tabulate results independent of a voting system.

Commissioner McCormick asked Sharon for an idea of how much input the manufacturers and test labs had in developing the usability requirements. Sharon responded that many of the developers participated in the NIST public working groups. Sharon also mentioned that NIST has seen an evolution with the manufacturers in going from hardware developers to user interface designers.

Public Commenter

11:43 a.m.

Caitriona Fitzgerald from Electronic Privacy Information Center. Caitriona supports the VVSG 2.0 principles on voter privacy and ballot secrecy, accountability, and that voting systems cannot be connected to external networks.

Adjournment

Chairman Hovland made a motion to adjourn the public meeting, which was seconded by Commissioner McCormick.

The Public Meeting of the Election Assistance Commission adjourned at 11:49 a.m.