U.S. Technology
Policy Committee

May 29, 2019

<u>Submitted Electronically</u>

Chairwoman Christy McCormick
U.S. Election Assistance Commission
1335 East-West Highway, Suite 4300
Silver Spring, Maryland 20910

Re: Comments on EAC VVSG 2.0 of the U.S. Technology Policy
      <u>Committee of the Association for Computing Machinery</u>

Dear Chairwoman McCormick:

The Association for Computing Machinery ("ACM") is the longest established and, with more than 100,000 global members, the largest association of individual professionals engaged in all aspects of computing in the world. A non-lobbying and otherwise wholly apolitical organization, ACM's mission includes providing unbiased, expert technical advice to policy-makers on matters of our members' wide-ranging expertise. That work is accomplished in the United States by and through ACM's U.S. Technology Policy Committee (the "Committee").

The Committee commends the Commission for opening this proceeding to refine the second iteration of its Voluntary Voting System Guidelines ("VVSG 2.0") and, consistent with our mandate, is pleased to again[1] have the opportunity to assist the Election Assistance Commission. We look forward to future opportunities to comment in greater technical detail upon the means of implementing the high-level principles and guidelines that are currently (and we believe productively) the focus of this stage of the proceeding. For present purposes, the Committee wishes to:

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[1] Committee member David Wagner leads the security team of the EAC's Technical Guidelines Development Committee (TGDC) on which Committee member Ron Rivest and Vice Chair Jeremy Epstein also previously sat. Epstein also served as a panelist at the EAC's January 10, 2018 Summit on the 2018 election.

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- associate itself with select comments, detailed in the attached matrix, of several other respected civil society organizations,[2] as well as with specific points made in the individual filing of Dr. Philip Stark;

- clearly underscore that, to be as secure and verifiable as possible, *all* voting technology must be: *isolatable* from inherently vulnerable networks of all kinds; *inspectable* with very high confidence at every stage of operation; and *interoperable* to maximize efficiency and system modernity.

  The Committee thus specifically and emphatically recommends that the final VVSG:

1. **Endorse a blanket ban on the internet connection capability of any and every voting technology addressed by the VVSG*, including connection to any private network that ultimately may connect to the internet.* ** This categorical prohibition on the inclusion of any connectivity-enabling devices in election-related equipment include all wireless modems, radios, and any other type of equipment capable of communicating over the internet. *Simply disabling such devices if installed will not suffice to protect election networks, databases and equipment*.

2. **Foster and justify public confidence that our election results are wholly evidence-based by requiring that elections be fully and robustly auditable.** To accomplish this goal, *all post-election ballot audits must occur before results are finalized and certified*. Moreover, such universal post-election assessment must include both *compliance audits* that verify the audit trail and *risk-limiting* ballot audits that either validate the declared results or determine what the correct results should be.

3. **Require the full interoperability of all internal voting system components, peripherals and data formats, together with component and system integration testing and certification.** Component testing would significantly decrease vendor development and testing costs. Component certification, combined with interoperability, almost certainly would decrease the costs and increase the options of election officials by facilitating the modular replacement of only those portions of their systems that require upgrading rather than systems in their entirety, as is now the norm. Component testing also would lower the barriers to market entry for new and potentially innovative component-producing companies which would be relieved from the present burdens of having to develop complete election systems.

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[2] The Committee has carefully reviewed and emphasizes in the attached Appendix select observations and recommendations of the Electronic Privacy Information Center (EPIC), National Election Defense Coalition (NEDC), State Audit Working Group (SAWG), and Verified Voting (VV).

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Thank you again for the opportunity to participate in this critical effort. Should you or your staff have any questions regarding these Comments, or seek further expert analysis or information our members may provide, please email Adam Eisgrau, ACM's Washington-based Director of Global Policy & Public Affairs, at the address below or reach him at 202-580-6555.

Sincerely,

James A. Hendler, Chair

Appendix

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ASSOCIATION FOR COMPUTING MACHINERY
U.S. TECHNOLOGY POLICY COMMITTEE COMMENTS ON EAC VVSG 2.0
ADDITIONAL CONCEPTS AND COMMENTS ENDORSED

ACM's U.S. Technology Policy Committee also makes the following additional general points (unattributed) and associates itself with the specific analyses of VVSG 2.0 identified below articulated variously in their Comments by: the Electronic Privacy Information Center (EPIC), National Election Defense Coalition (NEDC), State Audit Working Group (SAWG), Verified Voting (VV), and Dr. Philip Stark (PS).

Principle	Issue	Comment/Analysis	Source(s)
General	Structure	▪ Separation of proposed principles from detailed technical requirements.	PS
General	Process	▪ Approval of technical requirements and test assertions without EAC vote.	VV
General	Objective	▪ VVSG must: "deliver meaningful and effective guidance and requirements that will improve the security of voting systems and lessen exposure to manipulation, tampering or hacking."	NEDC
General	Auditability	▪ Our nation must conduct and verify fully auditable evidence-based elections.	PS, SAWG, VV
General	Connectivity	▪ No device involved in balloting or election administration should be connected *or connectable* to the internet or any private network that connects to the internet.	EPIC, NEDC, PS
4	Interoperability	▪ Strongly supported for all devices and data.	
5	Voter Access	▪ Voters must have equal and consistent access to election systems and resources.	
6	Voter Privacy	▪ Voter privacy must be assured and protected in all phases of the election process.	
7	Balloting	▪ Ballot text, form and vote selections must be presented in a clear and understandable way that can easily be marked and verified by all voters. ▪ Voting systems must allow voters to consistently and accurately verify both their ballots and the auditable records of their votes. ▪ Voters with disabilities must be able to independently validate their ballots.	 VV PS

8	Voting Systems/ Processes	▪ Voting systems and processes must be "robust, safe, usable and accessible. ▪ 8.3: System accuracy and ease of use must be prioritized over voter "satisfaction."	PS
9	Auditability	▪ 9.2: Election/voting records must be verifiable by the voter.	VV
10	Ballot Secrecy	▪ It should not be possible to link the voter to his or her ballot once the ballot has been cast. ▪ "Voters should vote privately . . . but votes should [more accurately] be [considered and described as] anonymous rather than secret." ▪ Delete "recallable ballot" from the glossary as the notion of a recallable ballot inherently conflicts with a ballot secret and anonymity.	EPIC PS SAWG
13	Data Protection	▪ Add a separate guideline articulating the clear prohibition on internet "connectivity," above.	NEDC
15	Detection and Monitoring	▪ 15.4: As this provision presumes the interconnection of voting systems with the internet or other networks in contravention of the recommended prohibition, it should be eliminated.	PS
Glossary		The Committee also concurs that the following key Glossary terms should be added or modified: ▪ Audit ▪ Ballot ▪ Ballot Secrecy ▪ Ballot Selections ▪ Cast Vote Record ▪ Correct (re: election outcomes) ▪ Effectiveness ▪ Efficiency ▪ Resilience ▪ Sensitive Data ▪ Voter Selections	 PS PS, VV SAWG, VV SAWG PS, SAWG, VV VV PS PS SAWG VV SAWG