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ACM Experts See Some Progress, but Reiterate Need to Improve US Election System Technology

Technology Leaders Urge Steps to Expand Use of Secure, Auditable Voting Systems to Build Trust in E-voting Infrastructure

WASHINGTON, DC, November 13, 2008 – Technology experts from ACM's U.S. Public Policy Committee (USACM) reported problems in a wide array of different technologies accessed by the nearly 124 million voters who participated in the 2008 U.S elections. The USACM experts, who monitored the reliability of voting equipment and registration records around the nation on Election Day, said it appeared that no systemic failures occurred, and expressed relief. But despite improvements in some jurisdictions, they reiterated the need for improved voting technology to help build trust in the e-voting infrastructure and enable voters to maintain their confidence in the democratic process.

"Based on what I saw and heard, there were some significant problems with e-voting, including DRE machine failures and unreliable optical scanners," said Edward Felten, a vice chair of USACM, referring to the direct-recording electronic voting machines and the systems that read and tally marked paper ballots. "We were fortunate that this Presidential election was not as close as 2000 or 2004, when these problems would have loomed larger." Felten, director of the Center for Information and Technology Policy at Princeton University, cited unresolved issues in the technology and said the nation deserves an e-voting system that doesn't rely on machines that remain unsecured and impossible to audit.

"Without early voting, there might well have been more voting system incidents triggered by heavy voter participation on Election Day," said Alec Yasinsac, a USACM expert on voting technologies. "In some places where machines did fail, voters were provided with emergency paper ballots. Although emergency paper ballots can be a useful backup measure, they can lead to other problems without proper planning, training, and resources at the polling places where they are used," said Yasinsac, dean of the School of Computer and Information Sciences at the University of South Alabama.

As a result of a heavy turnout by recently registered voters as well as intense voter participation, many newly installed or overhauled voter registration databases (deployed to meet Federal requirements) experienced "no match" situations as a result of predictable inaccuracies that often occur in databases. USACM's other vice chair Annie Antón said this problem could lead to legitimate voters being purged from the rolls.

"Instances of long delays and contested voter eligibility are likely to be ongoing problems unless voting jurisdictions adopt measures such as USACM's recommendations for verifying eligibility of voters and providing timely notification," said Antón, professor of computer science at North Carolina State University. She continued, "ACM's report on Voter Registration Databases (VRDs) includes nearly 100 high-level recommendations to help states as they comply with Federal laws that require computerized statewide electronic databases."

USACM also encouraged policymakers along with state and local officials to join with computing professionals, advocates, and industry to ensure secure, reliable, usable, and trustworthy computer-based systems. "There are many pressing problems facing the new Congress and administration," said USACM's chair, Eugene H. Spafford, professor of Computer Science at Purdue University, "but we hope that they don't lose sight of the need to bring additional reform and meaningful standards to this problem area. Although improvements have occurred in some states in recent years, there continue to be deficiencies that could lead to problems in future elections."

To protect against software bugs or malicious computer code, USACM continued to stress the need for a physical (i.e., paper) record to enable voters to verify that their votes have been cast accurately. USACM also advocated voting systems with audit trails and audit mechanisms to provide independent checks on the results they produce and store, and called for "software independent" verification systems (i.e., devices independent of vote-casting machines), as a key mechanism to reinforce voter trust. In addition, USACM recommended that voting systems be independently tested by qualified technical experts.

For more information on USACM, e-voting issues and access to the tech policy weblog, click on **http://usacm.acm.org/usacm/weblog.**

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About USACM

The ACM U.S. Public Policy Committee (USACM) **http://www.acm.org/usacm** serves as the focal point for ACM's interaction with U.S. government organizations, the computing community, and the U.S. public in all matters of U.S. public policy related to information technology. Supported by ACM's Washington, D.C., **Office of Public Policy**, USACM responds to requests for information and technical expertise from U.S. government agencies and departments, seeks to influence relevant U.S. government policies on behalf of the computing community and the public, and provides information to ACM on relevant U.S. government activities. USACM also identifies potentially significant technical and public policy issues and brings them to the attention of ACM and the community.

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