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STUDY PROVES FLAWS IN HR 550 AUDIT LEAVE CONGRESSIONAL ELECTIONS FULLY EXPOSED TO OUTCOME ALTERING FRAUD AND ERROR
Statistical Analysts Propose Effective and Powerful Alternative

Summary

Today a group of computer security and statistical analysts released a study proving that the election audit procedure set forth in HR 550, popularly known as the Holt Bill, would in practice leave elections for the US House of Representatives *completely exposed* to undetected programming errors and deliberate fraud. (Download the full report at http://www.electiondefensealliance.org/hr550auditflaws)

The study demonstrates that the HR 550 audit is so ineffective that in 40% of races examined, the audit would *completely fail* to detect fraud or error affecting 10% of precincts in an average US House race. Fraud or error on this scale could easily alter the election outcome if left undetected.

Statistical experts and mathematicians associated with Election Defense Alliance (EDA) (http://www.ElectionDefenseAlliance.org) propose an effective alternative approach in their report issued today. Their validation approach detects fraud or error affecting as little as one percent (1%) of the electronic tally with a ninety-nine percent (99%) level of confidence. EDA urgently recommends replacing the audit proposed in HR 550 with this alternative approach. The EDA study first tested the HR 550 audit by applying its protocol in 10,000 simulated congressional elections. The simulation revealed serious flaws in the HR 550 audit design that cannot be remedied by typical means, such as by selecting larger samples.

To avoid this intrinsic flaw, the report then presents and tests an alternate validation protocol that *can* immediately achieve 99% confidence of detection of manipulation of even 1% of the total vote. The alternative audit calls for a *hand count of 10% of the paper ballot records in a U.S. Congressional District race in 100% of the precincts.* EDA will present this Universal Precinct-based Sampling ("UPS") in a full report soon to be released. Besides its extraordinary accuracy, UPS has the additional advantage of simplicity. It may be conducted "in-precinct" on election night, by public volunteers representing all concerned political parties. If conducted in-precinct, the UPS also avoids the difficult task of protecting the chain of custody of paper ballot records in 180,000 U.S. precincts. The HR 550 audit protocol demands this monumental task as currently written. Since a 10% hand-count sample could be drawn in 100% of precincts on election night, the UPS also eases the transition to decentralized, citizen-monitored hand-count verifications of elections, placing responsibility for the integrity of the vote count in the hands of the American people, where it rightfully belongs.

The EDA study also exposes the compromising position in which the HR 550 audit leaves candidates and concerned citizens. Even if fraud or error *is* detected by an HR 550 audit, candidates and citizens would still lack any means by which to determine how many votes were affected by the problem. Candidates and citizens would therefore lack a preliminary basis for challenging a potentially corrupted election in a timely manner. Regrettably, HR 550 is silent on when and how candidates or election officials should act when discrepancies are caught by the HR 550 procedure.

The UPS, to be more fully described in EDA's next report, provides a simple, effective, and vastly more powerful alternative for election validation than does the proposed HR 550 audit. The UPS provides a decentralized hand count, reduces chain of custody concerns and provides citizens a more clear and timely warning of fraud or error. Therefore Election Defense Alliance recommends UPS as an alternative to the HR 550 audit.

Background

Despite credible reports of widespread error-prone programming and severe, inherent security vulnerabilities electronic voting systems now tally over 80% of votes in America. (For example see http://brennancenter.org/programs/downloads/SecurityFull7-3Reduced.pdf) The majority of elections conducted on these systems are unverified. Therefore there is no independent procedure to prove the machine vote tally is accurate. Even where such procedures do exist on the books, officials frequently do not conduct them properly, or at all. A well-known but by no means isolated example is the Ohio 2004 "recount." In that case, officials cherry-picked precincts to recount rather than choosing them at random, as required by law. Election system vendors provided "cheat sheets" to help officials avoid triggering full hand recounts of the selected precincts. As a result, only *one* of Ohio's 88 counties faced a full recount.

In response to this unacceptable risk, Rep. Rush Holt (D-NJ) recently re-introduced HR 550, "The Voter Confidence and Increased Accessibility Act of 2005."   HR 550 is a bill currently pending in Congress that mandates a paper record for each vote and also calls for an audit of a fraction of the paper records of all electronic votes cast in federal elections. According to Representative Holt, HR 550 has received "bipartisan endorsement from one-third of the members of the House of Representatives, and has been endorsed by good-government groups as the 'gold standard' in [election] verifiability legislation." (June 12 press release at http://holt.house.gov/list/press/nj12_holt/061206.html) The authors of this HR 550 critique and of the UPS alternative believe otherwise.

About the authors

Bruce O'Dell, Coordinator of Data Analysis, Election Defense Alliance. O'Dell is an information technology consultant with 25 years experience who applies his expertise to analysis of the technical security and integrity of voting systems. His current consulting practice centers on e-Commerce security and the performance and design of very large-scale computer systems for Fortune 100 clients - recently as the chief technical architect in a company-wide security project at one of the top twenty public companies in America. (http://www.digitalagility.com/Odell_home_page.htm).

Jonathan Simon, JD, co-founder of the Election Defense Alliance. Simon is a graduate of Harvard College and New York University School of Law and is a member of the Bar of Massachusetts. He applies his prior experience as a political survey research analyst for Peter D. Hart Research Associates to studies of the accuracy of exit polls and other election integrity mechanisms. He collaborated on several studies assessing the accuracy of the 2004 presidential exit polls. (http://www.electiondefensealliance.org/jonathan_simon)

Josh Mitteldorf, PhD, is affiliated with the Department of Ecology & Evolutionary Biology, University of Arizona; currently specializing in computer simulations that demonstrate how natural selection can act on groups and communities, and has taught physics, mathematics, astronomy, and evolution at Harvard, Berkeley, Temple, the University of Pennsylvania, LaSalle and Bryn Mawr. Since the 2004 presidential election, he has been part of a coalition of statisticians who analyze voting patterns for evidence of errors or fraud. (http://www.u.arizona.edu/~jmitteld/)

Steven Freeman, PhD, earned his Ph.D. from MIT's Sloan School of Management and an M.S. in Social System Science from the University of Pennsylvania's Wharton School. Since 2000, he has held several academic positions at the University of Pennsylvania, where he currently serves as Visiting Scholar and a member of the teaching faculty of the Graduate Program of Organizational Dynamics in the School of Arts and Sciences. His election research has won an award from Project Censored as one of the three most important "censored" stories of 2005. He is the author, with Joel Bleifuss, of *Was the 2004 Presidential Election Stolen? Exit Polls, Election Fraud, and the Official Count*. (New York: Seven Stories Press 2006). (http://www.phil.upenn.edu/faculty/freeman/CV.pdf)

About Election Defense Alliance: Election Defense Alliance (http://www.electiondefensealliance.org/), founded July 4, 2006, is a coalition of election integrity activists working at the state and local levels across the nation to detect and counter covert, antidemocratic manipulation of voter registration databases and all electronic voting systems, and to promote honest, secure and transparent elections in which every vote is counted as cast so that our official election outcomes are truly worthy of the public trust.

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