

The Election Center

an international service association of election and voter registration officials

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11-03-2005

GAO Report: Electronic Voting Systems Security and Reliability

In September 2005, the Government Accountability Office (GAO) released a report titled, "Elections: Federal Efforts to Improve Security and Reliability of Electronic Voting Systems Are Under Way, but Key Activities Need to Be Completed." In the report, the GAO places the elections community under a great deal of scrutiny because of increasing fears and concerns regarding voting systems security and reliability. The report does little to dispel concerns and may in fact reinforce the allegations and suspicions of inadequate security procedures and standards for electronic voting equipment.

In the 102-page document, the GAO's objectives were to 1) determine the significant security and reliability concerns identified about electronic voting systems, 2) identify recommended practices relevant to ensuring the security and reliability of these systems, and 3) describe actions taken or planned to improve their security and reliability.

The bulk of the GAO report assesses problems with electronic voting systems including: flaws in system security controls, access controls, physical hardware controls, and weak security management practices by voting machine vendors (GAO's words). News coverage of voting system operational problems where votes were either lost or miscounted during an election are cited within the report from states such as California, Pennsylvania, North Carolina, and Florida, but the GAO did not investigate nor report what the election officials themselves had to say to substantiate or rebut information that may not be as reported.

The GAO concerns are analyzed in the context of the voting system life cycle, beginning with product development to operation and management of electronic voting systems at the state and local levels, and finally to the voluntary voting systems standards. The GAO warns that the aspects of the life cycle are interdependent - a problem occurring at one phase of the cycle is likely to affect other areas, which causes difficulty in finding the true root to occurring problems. Reported concerns are discussed below.

The concerns the GAO found with product development include allegations of weak security controls, audit trail design flaws, and weak security management practices. Evaluations gathered from the GAO demonstrated that election management systems did not encrypt the data files containing cast votes, and cited opinions that other computer programs could access the cast vote files and alter them without a record on the systems audit log. Other analysis cited by the GAO reported that the actual hardware of certain DRE models did not have protections on locks, power cords, or power switches to prevent possible interruptions. [Since the GAO focused mostly on allegations and criticisms of election security without necessarily substantiating the validity of those criticisms, it is difficult to determine whether these were isolated instances, misinformed examples, or real, systemic problems.]

In their view, election operation concerns included incorrect system configurations, poor implementation of security procedures, and operational failures during an election. Even the GAO notes that though the variety of reports of problems occurred during the operation of the election, the root cause was not known in all cases.

The GAO's examination of voting system standards states their belief that the standards are vague and have incomplete security provisions, inadequate provisions for some commercial products and networks, and inadequate documentation requirements. The security management concerns reportedly stem from the practices

of state and local governments in ensuring the security of electronic voting systems, citing poor version control of systems software and inadequate security management programs.

Throughout the report the GAO states that the specific security and reliability problems analyzed were found with specific makes and models and involved circumstances in elections from specific jurisdictions. In a response to the GAO report, the U.S. Election Assistance Commission (EAC) wanted clearly stated that voting system problems are not systemic. According to the EAC, the complexity of assuring the accuracy, integrity, confidentiality, and availability of voting systems, the security and reliability concerns raised merit attention, but there needs to be a context for evaluating the extent of the problems.

The end of the GAO report concentrates and explores the possible changes and planning it recommends in order to keep the integrity of the electronic systems in tact. Mainly the report recommends that the EAC establish tasks, processes, and time frames for improving the federal voluntary voting system standards, testing capabilities, and management support available to state and local election officials. Although the report focuses extensively on the role the EAC plays in the recommended improvements, the GAO also illustrates through further recommendations the importance of incorporating the influence of the whole election community. The recommendations assert ways the principles of security and reliability can be built into each phase of the voting system life cycle and encourages further research and documentation on the problems occurring at every stage of the process.

The GAO report also recognizes efforts already taking place by Federal and non-governmental groups. Specifically the EAC has led efforts to draft changes to existing federal voluntary standards for voting systems, including provisions addressing security and reliability, to develop a process for certifying voting systems, to establish a program to accredit independent laboratories to test electronic voting systems, and develop a library and clearinghouse for information on state and local elections and systems. Even though movement and efforts are underway the changes are unlikely to effect federal elections in 2006.

The Election Center is noted for the Professional Education Program's efforts on the management side of elections, to provide training and certification to election officials, and to the continuing educational emphasis of workshops and seminars related to all forms of ballot, voting equipment and polling site security issues. Plans are under way to expand the curriculum of this program to integrate additional tactics to manage security issues more effectively. Additionally, the Checklist series offered by The Election Center (and noted by the GAO) are available on Ballot Security and Voting Equipment Preparations.

Look for further discussion of GAO recommendations regarding the security and reliability of electronic voting systems in Election Center member alerts to be released next week.

Find a copy of the full report at the following link, <http://www.gao.gov/new.items/d05956.pdf>.

NOTE TO MEMBERS: Heidi Freier is the newest employee of The Election Center and she has joined us as Membership Services Coordinator. Heidi will be working to analyze a variety of published reports and preparing "digest" versions of reports so members can be informed on what is available without necessarily having to read 140-page or 390-page reports from various governmental or nongovernmental organizations. Heidi is a graduate of University of Houston. She worked for a software services firm prior to joining The Election Center in June of this year. This report was prepared by Heidi (as she will for additional reports on the GAO study) who will be working to keep members informed of substantive reports, news, articles and other items useful for our members to know. You can reach her at heidif@electioncenter.org.

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