

Eron Lloyd
eronlloyd@gmail.com

Fair Elections PA

PA Governor's Task Force on Election Reform Testimony

March 30, 2005

Ballot vs. Receipt: Debating Paper-based Verification Options

A strong movement has developed here in the U.S. to require a voter-verified paper audit trail (VVPAT) for all voting machines. There is a growing mistrust in the integrity of voting machines and ultimately, the official election results. Much of this is fueled by apparent failings in recent elections, but perhaps the biggest source of mistrust is in the expanding use of high-tech voting equipment called Direct Recording Electronic machines, commonly called DREs.

Unlike many other types of equipment, DREs are designed to provide voters with the ability to cast votes without ever producing a physical or otherwise tangible ballot. Herein lies the issue: there is considerable concern regarding the integrity of votes cast on DREs, which could either accidentally or intentionally discard or manipulate the voter's intent without notice. To protect against this, many groups have advocated for DRE technology to standardize on the use of some type of verification and audit system. Two general solutions have been proposed: the voter receipt, which could come in a variety of forms ranging from a slip of paper not unlike a cash register receipt to a Web-based ID code that displays the contents and status of votes cast and the retention of the official paper ballot. The requirement of a VVPAT is considered by many voting rights and computer security experts to not be up for debate; the only argument then is in the detail of implementation.

Unfortunately like most electoral reform issues, even most people who support the idea of change don't fully understand the problem. The momentum behind the voter receipt concept has grown a great deal and it seems like a simple and appealing one: like purchasing merchandise or conducting transactions at an ATM, a voter receipt can in theory verify that the correct choices were registered, cast and counted. Several DRE manufacturers have even begun implementing voter receipts to beat others to market with the HAVA deadlines forcing equipment upgrades. Advanced methods such as Web-based verification systems and vote cryptography have also been proposed and developed. With all this effort in solving the problem, one would wonder that beyond general inertia, how could there be resistance to the receipt concept? Let's get back to the ballot.

From contracts to legal tender, we still live in a society that places the highest value on paper-based records. How then should elections be any different? A paper-based "hard copy" election ballot is generally considered to be the official record of a voter's intent. From checkboxes to punch cards to marksense there has been a continuing tradition of maintaining a physical record of votes cast. Paper ballots are tangible and instill an added sense of confidence and trust in the voter at a time when skepticism is running high. From the time the ballot is dropped in the box to the time it is tallied there can be many eyes keeping track of it.

Compared to voter receipts, paper ballots have significant benefits. Ballots have

official status while receipts do not; in addition to the absence of inherent legal protections, receipts cannot be used to accurately rebuild and recount an election. While digital votes can be tampered with and still have a correct receipt printed, complete voter verification can be done on the official paper ballot. Receipts can also put voters at risk of coercion or vote buying and loss of anonymity. Paper ballots do not leave the poll.

On the other hand, this isn't to say that paper ballots are perfect. History has shown us the many weaknesses of this approach: entire ballot boxes disappear, millions of ballots are thrown out due to voter or equipment errors and there is a huge problem of accessibility and language localization support. In fact, these very problems have been the impetus to move to DREs in the first place. The final solution lies in an innovative conjunction of the two, bringing together the best of both worlds.

What several groups are beginning to propose is the use of computer voting equipment that produces an official paper ballot. One example, arguably the most complete design of this concept, was pioneered by the Open Voting Consortium and demonstrated around the country last year. In this system voters choose their selections on computer systems identical to most DREs. When they are ready to cast their votes, an official paper ballot is printed with the choices clearly visible for inspection, which is placed in a ballot box if correct. In addition, the equipment retains a digital version of the ballot, again like DREs. The key difference is what takes place once all the votes are cast: using a fundamental principle of accounting, each pair of paper and electronic ballots are matched up and reconciled. Inconsistencies are caught immediately when totals don't add up or ballots either mismatch or go missing on either end. This extra step adds a layer of integrity unavailable in either DRE or solely paper-based systems. Distributed with this testimony is a detailed explanation of this reconciliation procedure.

A recommendation to the task force then is to look into the need for a paper ballot requirement for all new voting equipment upgrades as well as making it retroactively applicable to existing DRE deployments in the state. This requirement should be presented to the General Assembly as necessary legislation to be amended in PA Election Code and fast tracked for adoption in time for HAVA-mandated procurements. Doing so will protect the state from expensive court battles over election results and further assure the voters that everything is being done to protect and reflect their voting intent. Further information can be obtained by us at Fair Elections PA or from the following resources provided below.

Additional Resources:

- <http://www.openvotingconsortium.org>
- <http://www.blackboxvoting.org/>
- <http://www.verifiedvoting.org/>
- <http://www.evoting-experts.com/>
- <http://www.eff.org/Activism/E-voting/>
- <http://www.notablessoftware.com/evote.html>
- <http://www.cs.uiowa.edu/~jones/voting/>
- <http://avirubin.com/vote/>
- <http://www.wheresthepaper.org/>