Touchscreen Voting Systems Issue Paper
Florida State Association of Supervisors of Elections

The 2000 General Election has served as the catalyst for election reform not only in Florida but throughout the United States. In Florida, the most significant reform undertaken was that of requiring the replacement of certain voting systems. Counties were left with the choice of either purchasing an optical scan precinct count system or a direct record electronic (DRE) touchscreen voting system. In the 2002 elections, the new equipment performed exceedingly well in virtually every county which implemented one of these two new systems. The equipment performed well and voters appeared to have little problem utilizing these new systems. In the immediate future, practically every jurisdiction in the country will be moving to the use of one of these systems.

As a result of these reforms, sixteen Florida counties chose to purchase and install touchscreen voting systems. These counties represent over half of all registered voters in Florida. In 2002, the United States Congress passed, and President Bush thereafter signed into law, the Help America Vote Act (HAVA) that requires every county in the United States to provide at least one touchscreen voting booth (DRE) or other voting system that accommodates the blind and/or visually impaired in every polling place no later than January 1, 2006.

With the number of counties that have selected touchscreen systems and the certain increase in use of these systems, some individuals have begun to question their reliability, security and accuracy. Based on these concerns, the Florida Supervisors of Elections feel it is necessary to address these issues to insure our voting public of the integrity of our elections equipment.

Touchscreen voting systems are sophisticated systems, more so than any others previously developed and used. However, because of the simplicity they provide the voter, jurisdictions across our nation are realizing the advantages of these systems. Accuracy and security are two major areas that elections officials find to be central in the selection of systems. Touchscreen systems offer the highest levels of accuracy and security.

Touchscreen systems are designed to capture the voter's choices by touching a screen. The choices are not final until the voter has had the opportunity to verify or change any of his choices. Once the voter is satisfied, the ballot is cast by either touching the screen in an indicated location or by pressing a button located at the top of the voting unit.

All voting systems in use in the State of Florida are approved and certified by the Division of Elections of the Florida Department of State prior to their use. No system can be purchased and thereafter used by any county in the state until this certification takes place.

INDEPENDENT TESTING AUTHORITIES/STATE CERTIFICATION

Prior to any system being certified for use in Florida, the system manufacturer is required to submit it to an independent testing authority (ITA). Independent testing authorities are currently certified by the National Association of State Election Directors' (NASED) ITA Certification Committee. These duties are being transferred to the National Institute of Standards and Testing (NIST) pursuant to HAVA. This transfer of duties is expected to be completed by Fall, 2005. This independent testing authority is INDEPENDENT of any manufacturer, state authority or county elections official. These testing labs (Cyber, Systest, and Wyle) are charged with the responsibility of exposing the hardware to a number of tests. In addition, the software and firmware go through an extensive examination of the source code to ensure that it performs as required by the Federal Election Commission standards…nothing more, nothing less.

Once the ITA completes its review, the system is sent to the State for a complete examination of hardware, firmware and software. Florida's certification process is considered to be one of the most stringent in the nation. The Department of State's Division of Elections, as part of the testing process, conducts an election on each system to verify its performance. If the system is approved and certified, no changes to the system can be made without further examination, testing and certification.

SOURCE CODE/PROPRIETARY SOFTWARE

Much is being said about the lack of availability of the systems' software, firmware and hardware to the general public. Voting systems software is proprietary. Because of this, there is the general thought that it is controlled by the manufacturer, one specific individual or small group of individuals. Nothing could be further from the actual facts. Simply because the software is not open to every hacker in the world, does not mean the software is not reviewed and exposed to public scrutiny.[1] For obvious reasons, strict control of this software is maintained and provides further safeguards from unauthorized individuals altering or tampering for private gain.

Supervisors of elections DO NOT have the source code or any other software or firmware that has the ability to affect the logic of their respective voting systems thereby affecting the tabulation of votes. Source code is required by law to be escrowed with the State as well as escrowed with the independent testing authority. Additionally, NASED requires the manufacturer's software to be escrowed with its written source code. Therefore, this code can always be accessed, by authorized authorities, to insure that it hasn't been improperly changed and is performing in the proper and authorized manner.

OTHER SECURITY ISSUES

Voting systems are very decentralized. There is not one critical nexus that everything must pass in order for an election to be conducted. Because of this decentralization, a

[1] DREs and the Election Process, The Election Center

number of different entities and individuals are involved with the preparation and conduct of the election. As stated above, systems are certified through ITAs and the Division of Elections. After the actual election parameters (office titles, candidates' names, and the number for which voters are allowed to vote) are established at the local county level, the system is required to be publicly tested to insure it is properly programmed, the election is correctly defined and all of the voting system input, output and communication devices are working properly. Candidates and political parties are notified of these tests and the public is given notice as required by law.

Supervisors of elections realize that for voting systems to operate in a secure manner, sound policies and procedures must also be developed that address each component of the process. The actual voting system is just a part of the overall system. The "best" voting system available is only as "secure" as the policies and procedures that govern its use and operation. All interested parties must look beyond the actual system in order to establish its level of security.

It needs to be clearly understood that the touchscreen system, while computerized, is a stand alone system. Each of the voting machines is not tied into any type of integrated database or communication system that would allow it to be tapped into from the outside. Therefore, as we so commonly see with computer systems and communication networks, hacking into these voting machines is not a concern. The process of voting and tabulating the results is not subject to being affected by sources outside the election system process.

VERIFIABLE PAPER RECEIPTS

One of the reasons that counties selected touchscreen voting systems was the elimination of paper. Our society is moving away from requiring paper with much of the business that is being transacted. With this being said, supervisors were very much aware that new systems would have to be able to produce a ballot reproduction, on paper, if ordered to do so for recount purposes and/or by order of a court. HAVA requires the voting system to produce a permanent paper record with a manual audit capacity.[2] Systems must have this capability in order to preserve the reliability and integrity of the system.

A small number of persons has put forth that there be a requirement for touchscreen systems to produce a paper receipt after the voter casts his ballot. The systems currently certified provide the necessary safeguards and security to insure accurate elections. It would appear that the reason this concern arises is either a distrust of technology by the people who would request such a printout or a lack of understanding that in the event that there is a close election or other issue which arises after the election, there is an ability to make a determination of the votes that were actually cast. It may be impossible to eliminate the distrust of modern technology by persons who may have this concern. However, the equipment now in place does provide the elections authorities, as well as the judicial system, a means by which all votes can be ascertained from the images on the DRE system. It is critical to understand that each DRE has a record that can be retrieved

[2] Help America Vote Act, Section 301(a)(2)(B)(i)

from each machine to show the votes that were actually cast by the voter. While it may be a lengthy process, the equipment can provide the authorities with the ability to demonstrate the votes actually cast if a recount or some similar issue presented itself, post election. Therefore, the issue of creating a paper trail for each voter is unnecessary except to eliminate the paranoia of the critics of these systems.

However, there are a number of other concerns beyond merely insuring that there is integrity in the system by being able to recreate the votes that had actually been cast that throw into question the need for a paper receipt. Some of those issues are:

(1) A paper receipt proves nothing. Consider this scenario…a voter selects his candidates on the touchscreen system and votes for "Candidate X." The voter is required to "review" his choices on a review screen before the system will allow the ballot to be cast…the voter's review screen indicates "Candidate X." This review allows the voter to make any changes or corrections to his ballot to prevent the voter from being unclear how he voted. Once the voter is satisfied, he casts his ballot by either touching a determined spot on the screen or pushing a button on the voting unit. Assuming the unit is equipped with a printer, the voter's receipt indicates he voted for "Candidate X." Now that the voter has received his receipt he can then proceed to go to the elections official at the polling place and tell them that he in fact voted for "Candidate Y," yet his receipt shows "Candidate X." Voters who desire to create absolute confusion can throw the election into turmoil if the printed receipt, which is no different than the record which would be maintained on the system, is given substantial impact at this point. The paper receipt therefore proves nothing other than to verify the vote which already is recorded. Punchcard system or lever machine voters did not receive verification of their vote, or that it was in fact counted as cast, other than the trust in the system and process. Likewise, voters using an optical scan system do not receive a receipt and the paper ballot which is retained is identical to the ballot record in the DRE.

(2) Paper receipts violate the spirit and intent of the HAVA which states, "the voting system shall permit the voter to verify (in a private and independent manner) the votes selected by the voter on the ballot before the ballot is cast and counted."[3] Requiring printers would negate the opportunity for blind or visually impaired voters to review "in a private and independent manner" their ballot prior to it being cast. Touchscreen voting systems provide for the very first time the ability for disabled voters to cast a ballot unaided and unassisted. Paper receipts take that opportunity away from these voters. Additionally, the federal requirement of multiple languages on the ballot also presents a challenge that is not contemplated by the proponents of the verifiable paper receipt.

(3) Printers for touchscreen voting booths are not currently available. The systems currently certified are not certified with printers. Requiring printers is not as simple as just plugging a printer into the unit. With printers comes a new set of issues and challenges such as paper jams, running out of ink and paper and the realization that they are a mechanical piece of equipment. Printed receipts for large ballots could be several feet long. Additionally, pollworkers will need to be further trained to connect additional

[3] Help America Vote Act, Section 301(a)(1)(A)(i)

equipment at the polling place on Election Day. Printers add weight to the units complicating precinct setup and increasing the costs for delivery to the polling places.

(4) Counties in Florida that have purchased touchscreen voting systems have invested a great deal of state and local tax dollars. You cannot talk about the paper receipt without discussing the additional cost to local governments to retrofit every touchscreen voting booth with a printer. County governments are cash strapped. Counties that were using punchcard voting systems were, by legislative act, required to abandon these systems for either optical scan or touchscreen systems. These counties have spent millions of dollars to comply with state law. It is estimated that printers would cost an additional $500 to $1,000 each. This is a huge expenditure of funds that counties do not have.

There have been some comments made that counties should use "their portion of HAVA reimbursement" money to purchase these printers. First, it is not clear that HAVA dollars will be available for this purchase. HAVA money set aside for voting systems was set aside for those counties that do not have a DRE system and are being required to purchase at least one device per polling place to allow the disabled voters to cast a ballot unaided and unassisted. Second, it is unclear as to whether or not the HAVA money will "filter down" to the counties. Counties do not have the resources to provide printers for systems that already have a "manual audit capacity" and are already in compliance with federal and state requirements.

(5) Based on our experience, the hand-counting of paper ballots, or in this case receipts, is not as accurate as ballots counted electronically. It should be understood that we are talking about counting, in some instances, many thousands of pieces of paper. The process used to accomplish this task is cumbersome and problematic. Counting teams are human….susceptible to becoming tired, prone to distractions and error. Experience has shown that hand recounts of any paper ballots are not as accurate as when counted on the tabulation system.

(6) Since 1964, electronic voting systems have been used in this nation's elections processes. In almost four decades, not a single case of election fraud due to tampering of a system's hardware or software has occurred. Comparably, in the last 40 years, hundreds of cases of election fraud involving paper have occurred and been successfully prosecuted.[4] The risk exists, depending on the laws, rules, policies and procedures in place, that the use of a paper receipt would open the door for voters to exchange their receipt (their vote) for something of value. Our existing systems do not allow this to happen.

(7) Although mechanical lever machines have been decertified for use in Florida, the argument can be made that lever machines never provided a paper receipt of any kind; yet, voters had a higher degree of comfort with lever machines than any other system.

The call for a verifiable paper receipt is not just being addressed by local elections officials. The Election Center, an international association of voter registration and

[4] American Association of People with Disabilities Policy Statement on Voter Verified Paper Ballots

election officials, has written a report addressing the security concerns of DREs which is probably the most comprehensive document to date evaluating these systems. Additionally, The Leadership Conference on Civil Rights, the United States League of Women Voters, and the American Association of People with Disabilities have all produced well written and reasoned papers justifying their positions for not requiring paper receipts.

CONCLUSION

Touchscreen voting systems are like no other type of voting technology used before. These systems are more complex and secure; yet, voters find them very easy to use. These systems have allowed supervisors of elections the opportunity to address many of the critical issues on Election Day such as overvoting, ballot review, and ease of use. Additionally, the greatest advantage these systems provide is the audio ballot allowing blind and visually impaired voters to vote unaided and unassisted for the very first time.

Supervisors of elections realize the apprehension the voting public may experience any time there is a change to new technology. Supervisors and their staffs have worked tirelessly to educate our public about the new systems and the security and reliability they provide. Supervisors are committed to continuing to educate our citizens on how these systems operate as well as being informed about candidates and issues. These groups and individuals who continue to challenge, without justification or proof, the credibility of these systems are committing a huge disservice to the voting public. The continued unfounded attacks on these systems erode the public's confidence. Once the public loses trust in the actual voting system, the elections official, and our elections processes, they have no reason to go to the polls and vote.