

**Testimony  
Before the  
Election Assistance Commission  
(EAC)  
Stephen Berger  
May 5, 2004**

I welcome the Election Assistance Commission for this opportunity to offer my views regarding the use, reliability and security of electronic voting systems.

In these remarks I would like to very briefly review the history of electronic voting and offer an opinion of where we stand in this process. An important topic will be to look at how we came to have the standards currently in use for voting equipment and what areas invite further refinement. Next I would like to offer some thoughts on the balance between a system view and an equipment view of the issues which currently face us. Finally, I would offer some observations on how adopting solutions developed for other sectors may be helpful in further improving this nation's voting systems.

In looking at the history of electronic voting it is helpful to review the history of technological innovation, the history of standards for voting equipment and the history and current state of standards for regulatory and governmental purposes.

As all in this audience well know hand counted paper ballots began to be replaced by various mechanical devices the early 20<sup>th</sup> Century. In the mid 20<sup>th</sup> Century punch card technology was introduced in different implementations. In both of these innovations counting was taken out of human hands and entrusted to mechanical or electronic machines. The tally reported by the machine at the end of the voting day was trusted to be the true count voted on that machine. Later, Westinghouse developed the optical scanning device. In this method of voting the voter indicates their selection by filling in an area and the cards were then read optically in high speed tabulation machines. Since the 1990's a variety of Direct Record Electronic (DRE) machines have been developed. At first these were essentially electronic equivalents of mechanical level machines. However, increasingly they presented new form factors and technologies, such as touch screens and other innovations.

It is important to remember that election officials did not move to new technology without reason. Our predecessors saw each new technology they adopted as solving important problems. As we deliberate how best to make further improvements it is important to appreciate what conditions have been improved or problems solved and take pains not to recreate them. While today we are greatly concerned about air pollution from automobiles our forefathers saw the automobile as a solution to a pollution problem. Horse pollution was a great problem in every street in the land. Returning to the horse and buggy will not eliminate pollution, but simply change its nature and it may be

argued, leave us with a worse form of pollution. Similarly elections were subverted with every system ever used. Every technological step introduced has claimed to improve the accuracy, reliability and security of the voting system. A review of history generally supports these claims as being accurate while understanding that no innovation has eliminated all problems in these areas. From a historical perspective it may be argued that the original paper ballot system was the least secure, reliable and accurate system used in this country.

In his book, "Making Peace with Reality" Jerry White surveys the broad historical, cultural and technological trends that are determining our future. He argues that we live in a period of increasing complexity, rapid change and loss of personal control, which will only accelerate in the future. He characterizes this as a period of increasing chaos. In White's definition Chaos is characterized by an increase in complexity while at the same time a decrease in personal control. He observes two common reactions to increasing complexity, which he evaluates as ineffective, those are escapism and immersion. Faced with chaos some individuals attempt to escape, to go live in a cabin in the woods, while others totally immerse themselves, embracing all change as good and right. In the arena of elections, voting and voting systems we see these same forces at work and these same very human responses. Our task is to embrace change, in fact we cannot resist it. Our task is to critically evaluate new innovations and realities, keep and even encouraging the rapid adoption of what is good while protecting ourselves and the election system from weaknesses and finding effective remedies for what is negative. It has been and will be hard work. It is my opinion that any time we think we have found a magic answer without a downside we simply do not understand the problem yet. In this arena, like so many others, the problems are multivariable and the solutions are compromises, attempting to simultaneously meet multiple, competing requirements. In the end we want systems that are secure but user friendly. We want to have system that allow the voter to verify their vote but which also allow people with disabilities to vote in private. We want systems that protect the confidentiality of the vote but also allow effective audit and recount of the tally. We want the highest possible reliability and accuracy while at the same time having systems that all jurisdictions can afford. Our choices will be among compromises and one size will seldom fit the vast variety of voting jurisdictions in our nation.

The system that exists today has developed and matured through the dedicated efforts of many individuals, both within and outside of the government. What we have today has come into being for good reasons, guided by people who care deeply about our democracy. As a personal comment, let me say that I am a relative newcomer to this field, having first gotten involved in 2001. As I have come to meet those with a long heritage in elections, on the federal, state and local level as well as in the private sector, my great pleasure has been to find a cadre of dedicated and patriotic fellow citizens. These remarkable individuals have worked long and hard, largely unrecognized and unappreciated by the larger public they serve. In particular I would comment on the fine staff the EAC has inherited in the Office of Elections Administration. Penelope Bonsall and her staff are among the finest people it has been my pleasure to meet and work with. Their dedication, hard work and common sense are a credit to them and their

organization. With this quality of staff I expect great accomplishments lie ahead for the EAC.

Returning to our subject, it is our task, together, to bring forth, much needed improvements, however those improvements are unlikely to come through revolutionary action, but rather through the much more difficult task of further refinements, finding innovations that allow better compromises between competing requirements and introducing new technologies, but first finding safeguards for their vulnerabilities while welcoming the improvements they bring.

I would like to now turn my attention to the history of standards for voting equipment and then of regulatory standards in general. In 1990 the FEC published the first national standard in the USA for voting equipment. This document addressed a critical need, bringing the first widely recognized set of requirements for voting equipment. Fourteen years later it is easy to criticize the shortcomings of this document, however, at the time it was introduced it filled a critical need, without legislative authority, simply through the power of doing the right thing it began the process of setting minimum requirements for this nations voting system.

A standard is not an end in itself, but a tool. Standard, such as the 1990 FEC standard, becomes the guiding document to guide a quality system as it seeks to improve the election system. This need for a system to implement the standard was soon recognized and the National Association of State Election Directors (NASSED) soon created the system of Independent Test Authorities (ITA) to provide a trusted source for evaluating equipment to the standard.

Standards are always living documents, so in 1997 the FEC inaugurated a much needed revision of its 1990 document. Of course the trauma of the 2000 election occurred before their work could be completed. Among the many lessons of the 2000 election was how prescient the FEC staff was in beginning that work.

Also as a result of the 2000 election many within the Institute of Electrical and Electronic Engineers (IEEE) engaged in the issues related to the issues raised. The effort which found continuing expression was initiated by a group of engineers in the IEEE New York Section who approached the IEEE Standards Association Standards Board, proposing that the IEEE undertake the writing of standard for voting equipment.

The IEEE is the largest technical society in the world, with over 360,000 members in 150 countries. Its standards organization, the IEEE SA, supervises the writing of over 800 technical standards in all fields within the scope of the IEEE. Many of these documents are developed in close cooperation with governmental agencies and serve to provide the technical definition and tests of compliance for a wide variety of federal regulations. Working with federal agencies has a long history within the IEEE many refinements in these working partnerships have been developed over the years.

In fact the congress, in recognition of this very productive partnership, in the 1998 Technology Transfer and Reinvestment Act made it national policy that agency use recognized standards, developed through the consensus standards process, where they exist, to support the agencies objectives. This policy has been detailed more thoroughly in OMB circular 119. As an interesting aside, as the IEEE began to be involved in this process and dialogue was started with the US Department of Justice. Doing its “due diligence” the staff and DoJ assign an attorney to investigate the US federal policy regarding the involvement in consensus standards process by federal employees. The conclusion they reported to the IEEE was that in fact it was federal policy to use the consensus standards process and for employees of federal agencies to be involved in the development of such documents, where it was appropriate to the agencies mission.

When the IEEE entered this arena its first step was to make itself known to the relevant officials. Courtesy calls were made on NASED, the FEC and others to express the interest of the IEEE to contribute to the development of voting standards and discover how best to make a contribution. What we discovered was that the FEC was nearing the end of its own revision. The staff graciously invited as much input and criticism as our membership cared to contribute. We actually stopped our own project and for several months concentrated on reviewing and making suggestions to the FEC revision. In the end between 30-40 pages of detailed technical comments and recommendations were offered to the FEC by the IEEE. Many of these were incorporated into the 2002 FEC standard.

With the publication of the 2002 FEC standard the IEEE effort went into full swing. We had conversations with the staff at that time and everyone recognized that there was much important work yet to be done. Standards are always a work in progress. The question in a revision is how far to change things in this next step and what to leave for future work. Given the critical need for a revision for the 1990 standard the FEC staff made a judgment as to how far to go with this revision and what must be deferred in the interest of allowing one set of improvements to begin to work its way through the system. It is my personal opinion that the division they made was intelligent and well informed. They did not do all that may be desired, as they recognized at the time, however, they did a great deal that was badly needed and in releasing it when they did they allowed this set of improvements to begin moving toward implementation in the field and to have much improved equipment in place for the 2004 election and even wider deployment in future elections.

In recent days I have become aware that there is some criticism in the press of the 2002 standard. In general such criticism represents opportunism and a lack on understanding of the resource constraints under which it was developed. That this document can yet be further improved is without debate. However, characterize it as anything other than an important step forward in the improvement of the nations voting system shows an adolescent self-absorption at best. It is very important that the speedy implementation of the 2002 standard be encouraged. We know it can be further improved. On that all would agree and within the IEEE P1583 is attempting to do just that. However, the law of unintended consequences is particularly important in this field. It is important that we

see both how much better the equipment is that qualifies under the 2002 standard in contrast to that which qualified under the 1990 standard and it is important that we find what problems arise with implementing it, so that the next revision may address those unanticipated issues.

The IEEE is actively pursuing the development of standards for voting equipment. We have formed a Standards Coordinating Committee, SCC 38, to supervise standards in this area. The first and most active project is IEEE Project 1583 (P1583). P1583 started with the 2002 FEC standard as its starting point and asks the simple question, "What would those in the IEEE committee suggest for the next revision to this document?" That effort was launched in 2001 and its next meeting is at Piscataway, NJ later this week. The IEEE is accredited by and operates under American National Standards Institute (ANSI) rules. The IEEE is the largest ANSI accredited standards developing organization in the US. In all our standards great efforts are made to assure that all materially affected interests are represented in the process. All meetings are open and progress is made through the formation of consensus. The current committee has been very active, its current draft is over 240 pages in length.

Another IEEE project in this area is P1622, which is working on data interchange standards. This committee is seeking to develop a standard for data formats for that data can reliably be transferred through different components of the voting system, using recognized data structures. This work will be very helpful in facilitating the flow of information through the system.

One way to view the IEEE standards process is that it brings the tools to democracy to bear in dealing with this issue in our democracy. In the IEEE process, as required by ANSI, meetings are open and efforts are made to assure that all material interests are represented in the process. Decisions are made by vote. Before a standard can be approved multiple levels of balloting must take place. First the committee must reach a consensus about what should be in the document. If the committee cannot reach a consensus then the document does not go forward or will remain silent on the point of controversy. So all drafts, as they pass out of committee represent a compromise that the majority of the committee agrees to. After the committee the sponsoring organization within the IEEE ballots the document. At this level a wider circle of technical experts give the document their review. The sponsor ballot must receive a 75% return of all eligible votes and of those 75% must approve the document before it can go forward. Once a document is approved at the sponsor level it goes to the IEEE Standards Board Review Committee for further review and final approval within the IEEE. Once approved there it is an IEEE standard, but not yet an ANSI standard. IEEE standards are routinely then submitted for further review and approval by ANSI. ANSI holds a public review, receiving comments from anyone who cares to offer an opinion about a proposed standard. The ANSI staff carefully reviews the balance of the group which approved a document and audits the process used to assure that it conforms to ANSI requirements. Once a document passes all of these additional reviews it then becomes an ANSI/IEEE standard.

At this point the standard is purely voluntary. It is simply the best technical consensus that could be achieved on the topic being addressed. For standards of interest to governmental agencies, these agencies typically subject the standard to their own reviews and approval process. It is not unusual for a technical standard that is proposed for use in a regulatory context to go through a formal rulemaking process with review by the agency staff, public comment and reply comment and ultimately adoption by the agency under the Code of Federal Regulations. None of this is a fast process but it is a careful process with multiple levels of review to assure that technical requirements represent the best consensus achievable.

It is important to consider that national voting system standards do not operate in isolation. In their best implementation they are a tool in a quality system, working together with other components in this quality system to safeguard the nations voting system. There should be at least four levels of voting standards:

1. National Standards, such as FEC 2002, used by the ITAs to assure a consistent implementation of requirements nation wide.
2. State Acceptance Standards, which are used to assure that the specific equipment admitted to each state meets the particular requirements and needs of that state. For reference the Texas process is attached as Annex A, as well as a recent memo from Texas Secretary of State Geoff Connor discussing the system in the light of the VVPB issue.
3. Local Acceptance Standards, used to assure that the equipment delivered is the same as that examined at the state and national level and that it meets the contractual requirements. These tests are used before delivery is accepted.
4. Logic and Accuracy Tests, used to assure that equipment is functioning properly, has not been modified and continues to represent the same equipment examined at the other levels.

The consensus I hear is that our greatest exposure to problems and the greatest need for attention is at levels 3 and 4, the local acceptance tests and pre and post election, logic and accuracy tests. As the EAC considers where to invest its valuable resources these area would seem to invite careful consideration.

At this point I would like to make a few remarks about taking a systems approach to development of standards and specifications for DREs. Technical standards at their best represent the distillation of the insight and experience coming from many directions. We need to design into the system as much feedback as possible. We need clear channels of communication with the dedicated state and local officials that run elections and deal with the practical problems that arise. Where those problems lend themselves to technical solutions the standards need to be updated to reflect those needs. We need to maintain the most open paths of communication with examiners, both at the ITAs and at the state level. As they review and qualify equipment under current standards that experience needs to be brought into the standards revision process so that better and more thorough examinations may be performed in the future.

We also need to bring into this field the best practices which are being developed in other areas, facing similar challenges. I have seen no issues for the election system which are not faced by other sectors. Compared to many other sectors the voting equipment industry is very small. Therefore adopting solutions refined in sectors with far more resources to apply to their development brings to the election system a value that it is unlikely it could develop itself.

In that vein one such concept is the NIST software repository and the use of hash codes to verify that software has not been modified. At the FEC-NASED meeting in Ft. Lauderdale about a year ago NIST presented the function it provides of escrowing software. Thru the use of various hash codes it is possible to determine to an extremely high degree of certainty that the code being used in the field is the same code that is in escrow, and which was examined and qualified.

It is not widely known that some states do not allow vendors to deliver software directly. Rather the ITAs supervise a compilation of the code they examine and qualify and then the ITA delivers the code to those states, after it is approved. Florida is one example where the it is the ITA, not the vendor that delivered installs and source to the state. In this way safeguards are inserted that the code has not been changed or tampered with since the examination. Further it assures that the national and state examinations are viewing the same code and therefore building on each other. Another little known fact is that in Florida a vendor must escrow with the state a sample of each particular precinct tabulator. This escrowing of software and control of it through the examination process not only increases the confidence in the original examination but assures that should questions arise at a later time further examination may be made of the same code.

Using hash codes this system could be further refined. By running various hash codes on the software an examiner reviews and then running the same codes on the software loaded onto individual systems in the field it can be proven with high degree of reliability that the code being used in the field is the same code that was examined.

Even better, as the code is reviewed again at the state level, it can be assured that the code that was reviewed at the national level by the ITA is the same code being looked at by the state examiner. Moreover examiners in different states can be sure they are looking at the same code and their examinations then build on each other's efforts and as the software goes through multiple reviews the confidence in it rises.

However, all of this assumes that there is enough consistency to build in redundancy and have overlapping checks at the national, state and even local level. Fragmentation of requirements and election practices is a major obstacle to capturing this benefit. Encouraging consistency in the core functions of elections is important if the election system on a national level is to be improved.

The current Voter Verified Paper Ballot (VVPB) has certainly caught all of our attention. It is an important question that will clearly be with us for some time to come. I would like to offer a few observations. First, as proposed, the VVPB is a new innovation in

voting. In an area as important as voting innovations should be introduced with the utmost care. In telecommunications, new technologies are introduced on a regular basis, but only through a very careful and phase implementation that gives a high assurance that problems will be identified early, before widespread deployment has taken place. Similarly implementations of new voting innovations should have a careful process by which they are introduced in limited fashion, under carefully controlled and monitored conditions and then if they both deliver their promised benefits and do not develop unforeseen problems of their own should they be generally promulgated.

There is an old saying that just because you identify a problem it doesn't mean that you have identified the solution. In this case it is not clear that the hypothetical problem identified is correctly stated. There has been a tendency in the media to imply that all problems would evaporate if only there were a VVPB. However, if local election officials do not follow vendor recommendations for operating equipment in a secure fashion, problems will arise whether or not there is a VVPB. That problem is a human system issue, "How do you get election administrators all across the nation to follow recognized administrative requirements?" Problems have been reported with vendors delivering equipment which is different from that submitted to the ITA for examination. That problem also would not be solved by the presence of a VVPB.

What is clear as I have listened to debate among experience security professionals in the IEEE security task group is that there is not a consensus that the VVPB is the best solution or even a particularly good solution. To be sure the issue is hotly debated. The fact of the debate shows the need for it and promise to bring forth consensus solutions that are better than any suggest we currently have.

It is however clear that the VVPB approach brings its own set of problems. Clearly ballot boxes full of voter verified paper can be switched. It doesn't not take high tech skullduggery to head out the back door with one box and show up at the county seat with a different box. That kind of thing has been going on for a long time. It doesn't take a highly skilled hacker to see that the boxes from a particularly offensive precinct are thrown in the bay and then demand a recount. As we look at proposed solutions it is very important that they be evaluated for the improvement they bring at the equipment level and at the system level. It does not help in the long run to improve security in the equipment but loose it in the system.

It is also important that new innovations have standards written that will assure that only their best implementation be put forth. With the VVPB approach it is clear that the use scenario, in which machines are stored for long periods of time, then brought out, placed in service and required to operate with high reliability for many hours, is a challenge. Standards and tests are needed that will demonstrate that any printer technology proposed in such a system is capable of being stored for a long period of time and then can be brought out and have 10's of thousands of them print with very high reliability all day long. To date nobody has offered a set of specifications and tests that would adequately evaluate a proposed implementation against such a use scenario. Further it is not at all clear that any reasonably-priced printer technology exists that could meet this challenge.

In the end will we have improved anything if we address a fear of malicious code with the experience of large numbers of jammed printers and clogged ink cartridges? This does not say that these challenges cannot be met. Page: 9

It does say that the challenge has not yet been met and that meeting it will take a serious engineering effort from people experience in actually developing products that deliver high reliability.

In summary, regarding the VVPB question, it is very important that we know exactly what problems we believe are being solved. Then we need to ask why we believe this is in fact the best solution currently available to address those problems. Finally, it is important to challenge this proposed solution and see what problems it creates, both at the equipment and more particularly in this case, at the system level. The law of unintended consequences is very real and is best addressed by a careful and phased process by which changes are proposed, matured through careful testing and field trials and then introduced in a planned manner that assure that problem will be identified early and addressed before widespread deployment takes place.

In summary I have tried to say several things:

1. First, that our current system has been developed with a lot of thought and hard work from many very dedicated people. We should improve it with an appreciation for the value of what has been accomplished by those who preceded us.
2. Second, I believe the most promising approach to the complex set of issues facing the voting system is to take a system approach. Taking a system approach means forming strong partnerships among various participants. Certainly between the federal, state and local election officials. We hope between those officials and the equipment vendors, the engineering community generally and academics, working in various fields of interest and other interest groups. Developing the trust and open communication that will support the flow of information and allow solutions to go to their natural point of application, whether it be at the national, state or local level is perhaps the greatest challenge facing the EAC.
3. It is very important that solutions be adopted from other areas, where they have been perfected and see regular use. Voting systems are used only periodically but they face the same challenges of equipment in other areas that are used on a daily basis.
4. There needs to be a thoughtful process by which innovations are proposed, tested and introduced in a considered and phased manner so that the law of unintended consequences can be guarded against and so that these innovations can reach maturity before they see general deployment in the voting system.

I would like to thank the EAC for this opportunity to share these thoughts. I and the IEEE look forward to working with you and your staff toward the development of the most accurate, reliable and secure voting system we can accomplish through our mutual efforts.

## **Annex A**

### **Texas Voting System Certification Process**

#### **Standards**

The Texas voting system standards are among the most stringent in the country. Before any voting system may be used in the state of Texas, the Secretary of State must certify it. The certification process is governed by Chapter 122 of the Texas Election Code (the “Code”). Pursuant to Section 122.001 of the Code, a voting system must:

- (1) preserve the secrecy of the ballot;
- (2) be suitable for the purpose for which it is intended;
- (3) operate safely, efficiently, and accurately;
- (4) be safe from fraudulent or unauthorized manipulation;
- (5) permit voting on all offices and measures to be voted on at the election;
- (6) prevent counting votes on offices and measures on which the voter is not entitled to vote;
- (7) prevent counting votes by the same voter for more than one candidate for the same office or, in elections in which a voter is entitled to vote for more than one candidate for the same office, prevents counting votes for more than the number of candidates for which the voter is entitled to vote;
- (8) prevent counting a vote on the same office or measure more than once;
- (9) permit write-in voting;
- (10) be capable of permitting straight-party voting; and
- (11) be capable of providing records from which the operation of the voting system may be audited.

Tex. Elec. Code Ann. Section 122.001(Vernon 2003).

#### **Examiners**

To determine whether these standards are met, a team of six examiners is appointed to evaluate each voting system desiring certification in the state. The Secretary of State must appoint four examiners, one of whom must be a full-time employee of the Secretary of State’s office. The Attorney General must appoint two examiners, one of whom must be a full-time employee of the Attorney General. Two of the secretary of state's appointees must have demonstrated ability and experience in mechanics or electronics appropriate to the system or equipment to be examined, and two of the secretary's appointees must have demonstrated knowledge of and experience in election law and procedure. A person who has a pecuniary interest in the manufacturing or marketing of any part of a voting system or voting system equipment is ineligible for appointment. *Id.* Section 122.03

## **Administrative Requirements**

In addition to these Code requirements, the Secretary of State has also adopted several administrative rules governing the voting system certification process. Rule 81.61 requires that before a voting system may be examined, the system must be tested by a Nationally Recognized Test Laboratory (NRTL) and shall meet or exceed the minimum requirements set forth in the Performance and Test Standards for Punch Card, Mark Sense, and Direct Recording Electronic Voting Systems, or in any successor voluntary standard document developed and promulgated by the Federal Election Commission.

The Secretary of State has also adopted a rule that further defines how a voting system must provide records which enable the voting system to be audited. Rule 81.62 provides that:

(a) For any voting tabulation device, or any modification to a voting tabulation device, to be certified for use in Texas elections, the device shall include a continuous feed printer dedicated to a real-time audit log. All significant election events and their date and time stamps shall be printed to the audit log.

(b) The definition of "significant election events" in subsection (a) of this rule includes but is not limited to:

- (1) error messages and operator response to those messages;
- (2) number of ballots read for a given precinct;
- (3) completion of reading ballots for a given precinct;
- (4) identity of the input ports used for modem transfers from precincts;
- (5) users logging in and out from election system;
- (6) precincts being zeroed;
- (7) reports being generated; and
- (8) diagnostics of any type being run.

(c) The audit log for an election shall be retained by the custodian of election records for the appropriate preservation period.

(d) An alternative to the real-time printed audit log requirement may be approved by the Secretary of State for use on a precinct level voting system if the Secretary determines that the alternative produces at a minimum a sufficient record of items (b)(1)-(8) listed above and any administrative functions performed prior to opening the polls, the opening and closing of the polls, all ballot images, and any administrative functions performed after the closing of the polls. The alternative audit must be capable of being printed and a printed copy must be made available upon request.

## **Direct Recording Electronic Voting Systems**

Regarding direct record electronic voting systems, the Code specifically authorizes the use of these types of electronic voting systems. Chapter 129 of the Code was added in 2001 by the 77<sup>th</sup> Legislature. Chapter 129 does not require a paper receipt for the voter, but does require that before the voter may cast his or her ballot, a summary screen of the voter's ballot must appear that asks the voter to review his or her choices before finally casting a ballot. In 2001, members of the House Election Committee discussed whether a paper receipt should be a requirement, and decided against it at that time; opting instead from a policy perspective, as discussed above, for requiring a summary screen that grants the voter additional discretionary time to review the accuracy of his/her ballot. As discussed below, our office expects that the newly enpaneled Elections Assistance Commission will promulgate rules concerning this issue after reviewing the advisability of requiring verified paper receipts for voters.

### **Federal Law**

In addition, the Help America Vote Act of 2002 ("HAVA") mandates federal standards for electronic voting systems standards. These standards include a requirement that voting systems be accessible, which was already a requirement under Texas law, and that voting systems must be able to produce a paper audit trail of all votes cast, also a requirement under Texas law. HAVA also creates a new Election Assistance Advisory Commission that is required to adopt and regularly update federal voting system standards.

## **Annex B**

**TO:** Interested Parties  
**FROM:** Geoff Connor  
**DATE:** April 1, 2004  
**RE:** Electronic Voting System Certification and Voter-Verified Paper Trails

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Thank you for your recent correspondence with this office with respect to your concerns about the voting system certification process and the use of voter-verified paper trials in Texas. I would like to discuss both of these issues in turn, and hopefully address some or all of your concerns.

### **Voting System Certification Process**

First, voting system certification standards employed in Texas are among the most stringent in the country. Before any voting system may be used in the state of Texas, my office must approve the use of such system. Since 1998, Texas strengthened this process by requiring each voting system vendor to first obtain approval from a nationally-recognized independent testing authority prior to submitting their voting system (or modification to such system) to Texas for approval. My office has been charged with certifying voting systems for use in Texas since at least 1986, and it is a job that our office takes seriously, and one in which we believe we have demonstrated technical and legal expertise.

Chapter 122 of the Texas Election Code (the “Code”), and the series of rules promulgated thereunder, provide a detailed list of security functionality and checks and balances that all voting systems, including Direct Recording Electronic devices (“DREs”), are required to comply with prior to certification. The list is thorough and exhaustive. We recently detailed all of the legal requirements required for certification of voting systems in Texas in a memorandum posted on our website ([http://www.sos.state.tx.us/about/newsreleases/2004/01272004\\_memo.shtml](http://www.sos.state.tx.us/about/newsreleases/2004/01272004_memo.shtml)).

Again, these standards are some of the toughest in the country, and we take pride in the rigorous certification process that vendors are required to undergo in an effort to have various voting systems legally certified in this state:

There are two areas of the certification process that I would like to discuss in further detail:

### **Easier Accessibility to Written Records of Certification Examiners**

The voting system certification process currently in place in Texas is open and transparent. All applications for voting system certification, examiner reports, and the actual certification of

voting systems by the Secretary of State are “open records” under Chapter 552 of the Texas Government Code (the “Public Information Act”). Indeed, on various occasions following a written request pursuant to the Public Information Act, our office has provided voluminous written materials regarding the certification process. In addition, our office has a section of our website set aside particularly for information related to the certification process (<http://www.sos.state.tx.us/elections/laws/cclerklaws.shtml>).

However, we want to make the written records produced during the certification process even more accessible to the public. To that end, following the May 26-27, 2004 certification examination, my office will begin to post vendor applications for certification (Forms 100 and 101, and Schedule A), the names and dates certain vendors are scheduled for certification review, individual examiner reports, and the actual certifications made by my office to our website.

You should note, however, that Section 122.0331(d) of the Code exempts certain confidential information from disclosure under the Public Information Act. Accordingly, program codes and all other software on file with this office are not public information, and will not be posted to our website or otherwise disclosed at any time.

#### *Certification Review by Individual Examiners*

Chapter 122 of the Code sets forth the process by which individual examiners review the proposed certification of voting systems. These gatherings of individual examiners do not constitute “open meetings” under Chapter 551 of the Texas Government Code (the “Open Meetings Act”). Quite simply, the certification examinations performed by the team of examiners are not conducted as a “governmental body” for purposes of the Open Meetings Act, and have not been treated as such for the last 18 years in which such examinations have taken place.

Any effort to formalize this group would require action by the Texas Legislature. We are currently discussing this issue internally, and will continue to discuss this issue with appropriate members of the Texas Legislature.

In addition, our office is currently discussing the advisability of including a 15-day comment period following all reviews conducted by examiners prior to the actual certification of the voting systems by the Secretary of State, or his designee.

Under current administrative rules, certification examinations are scheduled three times a year during the months of January, May, and August, unless extenuating circumstances provide otherwise. Within 30-days following the certification examination, examiners are required to provide copies of their written reports to this office. This office then has 30-days to certify the voting system. *See TEX. ADMIN. CODE* §81.60. The proposal

currently being discussed by this office would provide for a 15-day comment period for the general public following the delivery of each report to this office. This office would then review all comments received from the public for consideration prior to the actual certification of any voting system.

Bearing in mind the proprietary nature of the intellectual property discussed at these certification examinations, it is clear that there is a balance of interests required between the need for

openness and transparency in the process and need to protect the voting system vendors' intellectual property rights. This office will continue to seek to perfect this balance of interests.

### **Voter-Verified Paper Trails**

Voter-verified paper trails ("VVPTs") have recently garnered a lot of attention in the media and otherwise. Some states, including California, have passed administrative rules that will require VVPTs for all DRE machines by 2006, and in some cases even sooner. It is my belief that a discussion of VVPTs in connection with DREs in Texas is premature.

The Help America Vote Act of 2002 ("HAVA") created the Elections Assistance Commission ("EAC") as the body charged with implementing the terms of HAVA. The EAC has only recently been formed and funded, and in fact, conducted their first meeting on March 23, 2004. One of their first charges will be to critically examine e-voting issues, including the advisability of a federal requirement for VVPTs.

In addition, there is a healthy debate currently ongoing in Congress with respect to the issue of VVPTs. Legislation has been filed by various members of Congress calling for a VVPT requirement. However, original sponsors of the HAVA legislation have also expressed their own opinion in a March 4, 2004 letter to other members: "Not only are such [VVPT] proposals premature, but they would undermine essential HAVA provisions, such as the disability and language minority access requirements, and could result in more, rather than less, voter disenfranchisement and error."

Quite simply from a policy perspective, any discussion of unilaterally requiring VVPTs for DREs through a rule-making process conducted by this office is premature given the debate currently ongoing at the federal and state level. The current law in Texas, embodied in Chapter 129 of the Code, does not require a paper receipt for the voter, but does require that before the voter may cast his or her ballot, a summary screen of the voter's ballot must appear that asks the voter to review his or her choices before finally casting a ballot. In fact, in 2001, members of the House Election Committee discussed whether a paper receipt should be a requirement, and decided against it at that time; opting instead from a policy perspective for requiring a summary screen that grants the voter additional discretionary time to review the accuracy of his/her ballot and does not

disenfranchise disabled and language minority voters. For now, a summary screen adequately protects the integrity of the voting system and vote, while at the same time protecting the disabled and those that are less proficient in the English language.

However, you should also know that Texas law does not prohibit the certification of a DRE with a VVPT. If a vendor were to come to the certification process with a VVPT, and pass the minimum requirements for certification in Texas, we would certify the voting system for use in the State of Texas. There simply have not been any voting systems with VVPTs which have meet the minimum requirements to date.

We look forward to monitoring the debate currently underway in the halls of Congress, and we are open to hearing your concerns, questions and comments with respect to VVPTs. Our office expects that the EAC will promulgate rules concerning this issue after reviewing the advisability of requiring VVPTs for voters.

The public must have the utmost confidence and trust in all processes related to elections. The Texas voting system certification process is a fair but rigorous one, thereby guaranteeing that Texas elections are conducted with integrity. However, like any process, there may be ways to strengthen and improve the process, and we welcome constructive suggestions. Some suggestions may require legislative action, and we are willing to work with the Texas Legislature, and appropriate federal officials, if necessary, to improve upon our already strong set of procedures in place with respect to voting system certification.

