

SECURITY, ACCURACY, AND RELIABILITY OF THE HART INTERCIVIC eSLATE VOTING SYSTEM

Prepared by:
Fort Bend County Elections Administrator
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INTRODUCTION

Fort Bend County uses the eSlate voting system from Hart InterCivic Inc. The eSlate voting system is the most widely-used electronic voting system in the State of Texas.

This document is provided for Fort Bend County voters who have concerns regarding electronic voting systems and who want to know whether their vote is safe and secure without a “voter-verified paper audit trail.” We hope that the information provided in this document can provide confidence to the vast majority of Fort Bend County voters that their vote will be accurately counted and reported by the eSlate voting system.

While no system is perfect, studies show that electronic voting systems offer the most accurate and secure method of voting available:

- x It is impossible to “overvote” (vote for more candidates that can be elected).
- x Voters are immediately able to completely correct a vote for the wrong candidate.
- x Voters must view a summary screen of all races and measures before casting ballot – this gives voters an opportunity to review and change their choices before vote is cast.
- x Voters are alerted to un-voted or under-voted races on the summary screen.
- x It is impossible to incorrectly mark the ballot, eliminating ambiguity regarding voter intent.
- x Electronic voting systems have been shown to eliminate racial and language gaps found in documented error rates of paper-based voting systems (including optical scan).
- x Votes are redundantly stored in multiple physical memory locations to preserve election results in the event of equipment failure.

It is also important to remember that voting equipment is only one component of an overall election system that includes citizen involvement, transparency, external security measures, management policies and procedures, and professional election officials. All of these people, procedures, and technologies work together to ensure reliable and trustworthy election results.

HISTORY OF ELECTRONIC VOTING SYSTEMS

Electronic voting systems have been used in jurisdictions throughout the United States since the 1970's. Approximately 30% of the votes nationwide in the 2004 Presidential election were cast using electronic voting devices.

According to the American Association of People with Disabilities, “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.” Electronic voting machines are very reliable and have multiple redundant features to capture and store votes accurately.

DESIGN OF THE HART INTERCIVIC eSLATE VOTING SYSTEM

EQUIPMENT SAFEGUARDS AGAINST UNAUTHORIZED ACCESS

The eSlate system includes both physical and electronic intrusion detection controls, such as numbered wire seals (commonly used in elections), and time-stamped transaction logs that record every system action related to the voting process. Data cannot be inserted or altered by unauthorized personnel because the database structure is proprietary and is protected by encrypted passwords determined by the Elections Administrator.

EQUIPMENT SAFEGUARDS AGAINST EXTERNAL ACCESS

The eSlate voting system is activated by the voter using a randomly generated four-digit code; there are no smart cards or other programmable devices that require an external access point into the voting hardware. This eliminates the possibility of hackers or others being able to gain access to the system in order to tamper with or subvert the election. In addition, the voting devices and tabulation computers are **NEVER** connected to an external network (including the Internet), so there is no opportunity for someone to access the system remotely and alter computer code or election results.

CLEAR AUDIT TRAIL

Each component of the eSlate voting system creates an audit record every time it is accessed or information is changed. All audit records can be extracted and printed in hard copy. All audit reports, audit trail documents, databases, and election reports can be archived in hard copy and/or saved electronically to CD-ROM to preserve information as required by the Election Code.

Ballot images are captured of each vote cast. These ballot images can be printed after the election if a candidate in the election requests a manual recount. The Texas Election Code requires a real-time printed audit log at the central counting station. This printed log records every event, tally, correction, and report produced from the tabulation system.

All audit logs and reports are public documents that are available for public viewing and/or copying in accordance with the Texas Open Records Act.

NO REPROGRAMMING FOR EACH ELECTION

Unlike optical scan voting systems, the eSlate voting system is not reprogrammed with new code for each election; only the election data changes. This eliminates a major source of potential error or manipulation. In addition, the eSlate system allows Elections Department staff (rather than the vendor) to prepare and implement the data entry of party names, candidate names, propositions, precincts, districts, etc. necessary for setting up each election.

EQUIPMENT DESIGNED FOR FAILSAFE OPERATION

The components of the eSlate voting system are networked together at the polling place, allowing the system to store all information (election coding and individual vote records) in three physically separate locations. This provides back-up and redundant data storage in the event that any one of the components malfunctions. This is a significant advantage over stand-alone electronic voting devices that have a single point of failure. (As a clarification, although the devices are networked together at the polling place, the system is **NOT** connected to an outside network, including the Internet.)

Automatic creation of vote records in multiple memory locations throughout the course of election day eliminates the need to physically collect votes from each voting device upon poll closing. This eliminates a potential source of error.

The eSlate voting system has battery backup to protect against power failures and lost data. All information storage devices are solid-state, and thus are not susceptible to magnetic fields, abusive handling, or loss of power.

INTEGRATED DIAGNOSTICS AND INTERNAL CONTROLS

The eSlate voting system uses error-checking techniques to ensure the accuracy of reading and writing digital data. Repetitive data integrity checks ensure that only authorized devices are communicating on the local network at the polling place, and that the data being communicated originates from a source that has complete integrity with the election database created for the current election. The eSlate voting system also incorporates continuous checking of each data transfer to ensure that the data received at the end of the transfer is the same as the data originated by the source.

MANUFACTURING STANDARDS

The eSlate voting system incorporates a tough polycarbonate display cover that is nearly indestructible. This makes the eSlate voting device better able to withstand vandalism attempts or other potential damage due to accidents than touch screen voting devices.

eSlate voting devices meet the stringent testing requirements of MIL-STD (U.S. Military Standard) 810 for environmental ruggedness, including humidity, vibration, and drop height. These devices are tested in temperature extremes through hot-cold chamber testing, salt fog testing, and water-resistance testing.

VOTING SYSTEMS CERTIFICATION & INDEPENDENT TESTING

FEDERAL CERTIFICATION TESTING

Voting system certification standards employed in Texas are among the most stringent in the nation. Every voting system certified for use in Texas, including the Hart InterCivic eSlate voting system, must comply with the Federal Voting System Standards promulgated by the Federal Election Commission. An Independent Testing Authority (ITA) selected and approved by the National Association of State Election Directors (NASSED) rigorously tests each voting system's hardware, firmware, and software for compliance with the Federal Voting System Standards. Voting systems certified by the ITA are issued a NASSED Qualified identification number to show that they meet or exceed the Federal Voting System Standards.

STATE CERTIFICATION TESTING

In addition, Texas election law requires the Secretary of State to certify all voting systems used in the state. The Secretary of State's testing involves a team of 6 examiners. The Secretary of State appoints four examiners, one of whom must be a full-time employee of the Office of the Secretary of State. The Attorney General appoints two examiners, one of whom must be a full-time employee of the Office 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 of State's appointees must have

demonstrated knowledge of and experience in election law and procedure. Before the Texas examination of a voting system, 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.

Voting systems vendors must submit each hardware, firmware, and/or software update to the ITA and the Secretary of State for testing in order to maintain their voting system's certification.

VOTING SYSTEM TRANSPARENCY – TESTING, TESTING, TESTING...

LOGIC AND ACCURACY TESTING

The accuracy of electronic voting devices are tested by "Logic and Accuracy" testing before and after each election as required by the Election Code and the Texas Administrative Code to make certain that the voting system is working properly. Votes from a hand-tallied spreadsheet are entered into the electronic voting devices. Printed totals from the electronic system are then compared to the hand-counted results. Additional functional tests are performed manually on each voting device. The schedule of Logic and Accuracy testing and functional testing is posted in advance of each election, and these testing sessions are open to the public.

In addition, the eSlate voting system prints a "zero report" when the machines are opened a status code report when they are powered-up at the polling place to document that there are no prior votes stored within the system.

HASH TESTING / VERSION CONTROL TESTING

Before each election, version control testing will be conducted to make sure that each component of the electronic voting system is using a certified version of the vendor's software and firmware.

PARALLEL TESTING OF VOTING EQUIPMENT

Parallel testing of voting equipment involves the random testing of production voting devices on election day. Voting units are selected at random. The selected voting device(s) are taken offline and then used for additional logic and accuracy testing. The Elections Administration Department has participated with the Secretary of State in parallel testing in past elections.

OTHER SECURITY MEASURES AND PROCEDURES

SECURITY AT THE COUNTY ELECTIONS OFFICE

Security features are in place within the Elections Administration Department including a key-card entry system to control access to areas of the office where voting equipment is to be stored and rooms where ballot coding computers and election tabulation computers are located. The key-card security system includes a log of each entry into the secured area as well as unsuccessful attempts to enter the secured area. Each employee will be issued a uniquely coded key-card that gives him or her access to appropriate areas of the office and logs each person's entry into a secure area. Access into the "tabulation room" (where the ballot coding computer and tabulation computers are kept) will be limited to the Elections Administrator and three key Election staff members.

SECURITY AT THE POLLING PLACE

Voting devices will be delivered to the polling places several days before election day. They are kept in a secure location at each polling place, and stored inside a locked cart to prevent access or theft. Each voting unit will be stored inside a secure case and sealed with a numbered- wire seal. The presiding election judge will be required to verify that the correct seals are intact on the voting devices before they may be opened and used in the election.

The precinct control device of the eSlate voting system and other supplies used by the election worker sare delivered to each polling location in a secured steel cabinet before election day. The cabinet is both locked and sealed to ensure the security of the contents. After the polls close, the presiding judge is responsible for returning the contral device to the Elections Department.. A memory card is stored inside the unit in a closed compartment sealed with a numbered wire seal and is not to be accessed by the election judge or polling place staff. When the unit is returned to the central counting station after the polls close, Elections staff will verify that this seal has remained intact while in the custody of the presiding election judge and while in use on election day.

The separation of equipment prior to the opening of the polls ensures that the individual voting devices may not be “pre-voted” (they cannot be used until activated with the precinct control device in the custody of the election judge). Conversely, the precinct control device cannot be used to “pre-vote” without an attached voting device (which have been delivered to the polling place and are not accessible by the election judge until election day).

OTHER MANAGEMENT AND OPERATIONAL PROCEDURES

Internal management and operational procedures are crucial to the success and reliability of any voting system, including our previous optical scan system. The following procedures will be carried forward or instituted:

- x An audit of each precinct’s electronic tally of the number of votes cast will be conducted against the number of signatures in the precinct’s poll book roster.
- x Polling place officials will be required to certify in writing that the proper locks and seals were found to be intact on the voting equipment before the polls open.
- x Polling place officials will be required to print and keep a “status report” from the voting system to ensure that no votes have been pre-loaded into the system.
- x A physical inventory of all voting devices will be conducted before and after each election to ensure custody of all voting devices is maintained.
- x All procedures will be in writing. All election judges, early voting workers, county Election staff, and central counting workers will undergo extensive training in both voting equipment operation and election law/procedures.
- x Bi-partisan staffing will be encouraged and employed to the extent possible at election day polling places, early voting polling places, and the central counting station.
- x Criminal background checks will be conducted on all incoming permanent and temporary Election Department personnel who have access to voting equipment.

WHY CAN’T A PAPER RECORD BE PROVIDED?

Neither federal election law nor the Texas Election Code requires electronic voting systems to produce a paper record commonly referred to as a “contemporaneous paper record” (CPR) or “voter-verified paper audit trail” (VVPAT). Although Hart InterCivic has a prototype CPR device, it is not certified or sold in states where it is not required by state law. Proposed legislation on the state and federal levels that would require a CPR have been filed but have not received wide

bipartisan support and do not appear to be moving forward at the present time.

HOW THEN IS A MANUAL RECOUNT CONDUCTED?

Even if CPR-enabled voting devices were used, current Texas election law does not allow for this type of paper record to be used for recount purposes. Under current state law, only the electronic results or the stored ballot images printed to paper after the election may be used for recounting an election conducted with an electronic voting system.

Persons requesting a recount from an election held with an electronic voting system may request either an electronic recount or a manual recount. In the case of electronic voting systems, a manual recount is conducted by printing the stored ballot images to paper after the election. These printed ballot images are then hand-counted by a recount committee, just as if they were actual paper ballots. These procedure have been successfully used in multiple recounts in Fort Bend County over the years.