STAR

SECURE
TRANSPARENT
AUDITABLE
RELIABLE

VOTE

Ten of the Main Requirements that Made a New Voting System Design Necessary

1. Voting system must provide rapid and accurate vote counts and also provide a paper record of each ballot that can be verified by the voter and can be used in the event of a recount, a contest, or equipment failure. Voting system must produce a paper record that is voter verifiable and archivable for 22 months or more. These records must be produced using printers that are reliable, fast, low cost to operate, have simple methods for replenishing consumables, and are easy to replace.

2. Voting system must efficiently and cost-effectively manage the use of early voting, mega-voting sites, and election day vote centers.

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3. Voting system must provide a variety of methods for routinely auditing the accuracy and security of the system as a routine part of each election. Methods should verify that the software accurately recorded the ballot content and performed a correct count.

4. Voting system must eliminate voter intent questions on paper ballots before the ballot is placed into the ballot box. Voter must know how their vote is being recorded without relying on how a system might be interpreting their hand marks.

5. Voting system must have a secure and transparent method for ensuring voters are given the correct ballot format.

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6. Voting system must provide a system for giving maximum flexibility to voters with disabilities so that they can cast a secret ballot. When possible, the voting experience should allow adaptability with new technologies available for persons with sight, hearing, and/or mobility challenges.

7. Voting system must utilize hardware and components that are comparably priced to (or are) off-the-shelf, durable, reliable, fast, lightweight, and easy to replace. Warranty and maintenance costs on these products should be minimal. Ideally, the system will incorporate equipment that is available on state contract (or similar structure) thereby allowing greater price savings.

8. Voting system must use software that is well designed, robust, and utilizes best security practices. It must provide functionality and flexibility to meet the needs of the administrator while being easy to use so that vendor involvement is not necessary in ballot creation, tallying, auditing, reporting, etc. Vendor must allow some type of review by a "red team" throughout development and when upgrades are offered to ensure quality and security requirements are being met. Software must be structured in modules with standard interfaces – for example, different modules for creating the ballot, tallying the ballot, creating reports, etc. (Modularity will give counties greater variety in selecting options best for their area and reduce the cost and time it takes to certify upgrades.) A plan for routinely and timely upgrading the software (for example, to fix bugs, improve functionality, and keep current with newer technology and operating systems) must be part of the proposal.

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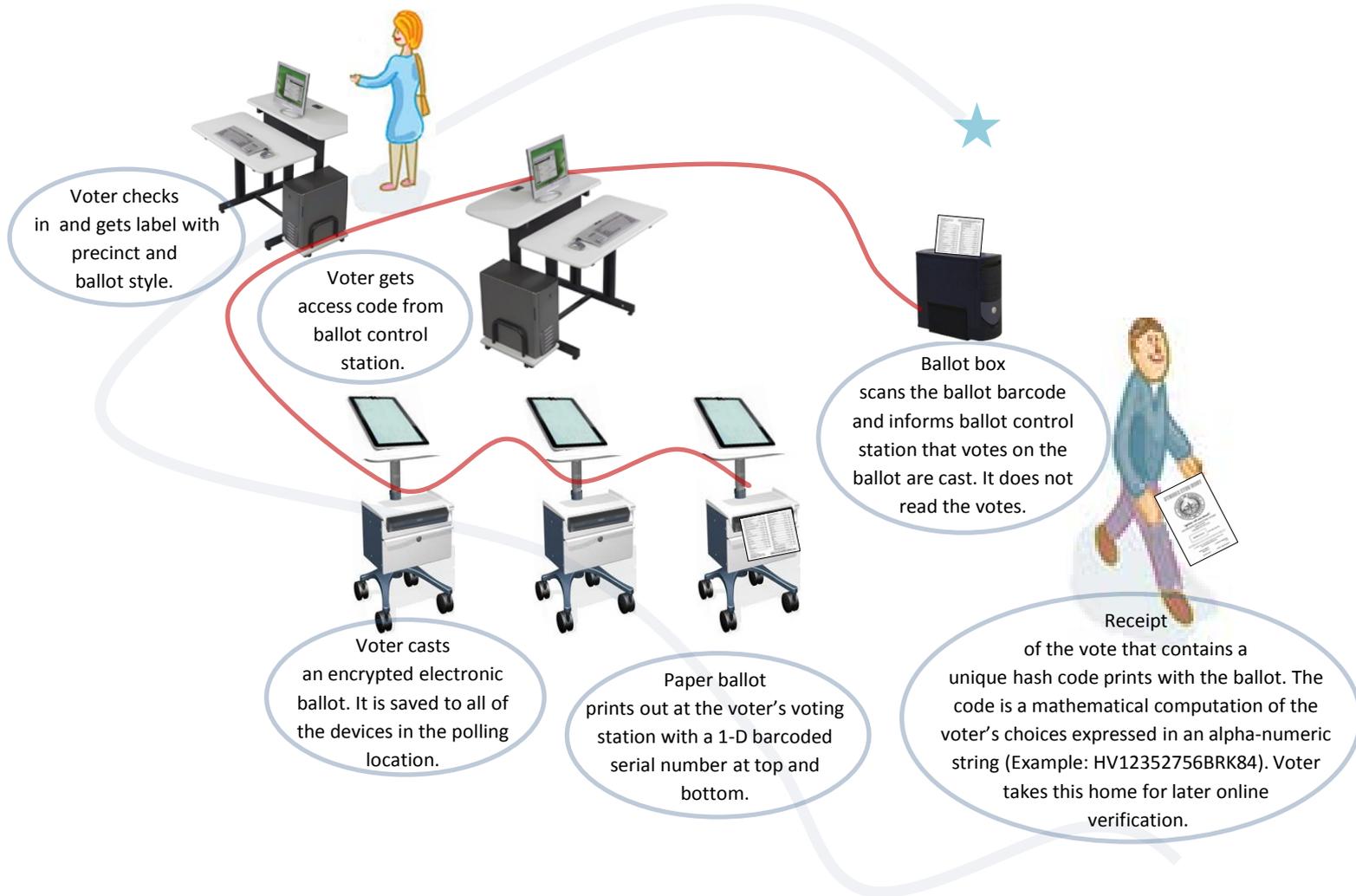
9. Voting system must have the ability to rapidly and easily produce reports that can be used by a wide variety of customers. Reports must be easily formatted (and reformatted) so that election night results can meet standard requirements for direct transmission to the media and agencies collecting data for a large number of jurisdictions. For example, hand re-entry of data should not be necessary for local, state, or national media or agencies for rapidly collecting election results.

10. Voting system must have reasonable purchase, maintenance, and support costs. Costs for the upgrade of software should be minimal or part of the maintenance agreement. Costs for replacing or adding hardware should be reasonable. Support services must have variety, depth, and reasonable costs. Current cost models on the market are not acceptable.

Travis STAR Voting System
Workflow Diagram

Voter Cast Ballot

Voter checks in and gets label with precinct and ballot style.

Voter gets access code from ballot control station.

Ballot box scans the ballot barcode and informs ballot control station that votes on the ballot are cast. It does not read the votes.

Voter casts an encrypted electronic ballot. It is saved to all of the devices in the polling location.

Paper ballot prints out at the voter's voting station with a 1-D barcoded serial number at top and bottom.

Receipt of the vote that contains a unique hash code prints with the ballot. The code is a mathematical computation of the voter's choices expressed in an alpha-numeric string (Example: HV12352756BRK84). Voter takes this home for later online verification.

Straight Party

Purple	⊘

States Representative

PURP	Anna Alpha	⊘

Governor

| PURP | Betty Beta | ⊘ |

Lieutenant Governor

| PURP | Gertrude Gamma | ⊘ |

Attorney General

| PURP | Daniel Delta | ⊘ |

State Senator

| PURP | Eric Epsilon | ⊘ |

Comptroller of Public Accounts

| OLD | Zita Zeta | ⊘ |

Attorney General

| PURP | Derick Delta | ⊘ |

State Senator

| PURP | Edith Epsilon | ⊘ |

Comptroller of Public Accounts

| OLD | Zorro Zeta | ⊘ |

Commissioner of the General Land Office

| PURP | Etta Eta | ⊘ |

Commissioner of Agriculture

| PURP | Theodore Theta | ⊘ |

Railroad Commissioner

| PURP | Onnie Iota | ⊘ |

Place 334, Justice, Supreme Court

| NO SELECTION | ○ |

Place 445, Justice, Supreme Court

| NO SELECTION | ○ |

Place 549, Justice, Supreme Court

| NO SELECTION | ○ |

Place 223, Judge, Court of Criminal Appeals

| NO SELECTION | ○ |

Place 552, Judge, Court of Criminal Appeals

| NO SELECTION | ○ |

Railroad Commissioner

| PURP | Icsha Iota | ⊘ |

Place 334, Justice, Supreme Court

| NO SELECTION | ○ |

Place 667, Judge, Court of Criminal Appeals

| NO SELECTION | ○ |

District 589, Member State Board of Education

| PURP | Kevin Kappa | ⊘ |

District 257, State Senator

| NO SELECTION | ○ |

Place 456, Justice, 33rd Court of Appeals District

| PURP | Larry Lambda | ⊘ |

Place 334, Justice, Supreme Court

| NO SELECTION | ○ |

Place 667, Judge, Court of Criminal Appeals

| NO SELECTION | ○ |

District 589, Member State Board of Education

| PURP | Karla Kappa | ⊘ |

District 257, State Senator

| NO SELECTION | ○ |

Place 456, Justice, 33rd Court of Appeals District

| PURP | Leticia Lambda | ⊘ |

Travis County General Election continued

Precinct 145, Justice of the Peace

| PURP | Nancy Nu | ⊘ |

District 147, State Representative

| PURP | Xena Xi | ⊘ |

County Judge

| PURP | Oscar Omicron | ⊘ |

677, Judge

| PURP | Peggy Pi | ⊘ |

Judge

| PURP | Rhoda Rho | ⊘ |

District Clerk

| PURP | Samuel Sigma | ⊘ |

County Clerk

| OLD | Teresa Tau | ⊘ |

County Treasurer

| PURP | Uma Upsilon | ⊘ |

District Clerk

| PURP | Solona Sigma | ⊘ |

County Clerk

| OLD | Thomas Tau | ⊘ |

County Treasurer

| PURP | Ulysses Upsilon | ⊘ |

County Commissioner

| PURP | Philip Phi | ⊘ |

Railroad Commissioner

| PURP | Charles Chi | ⊘ |

Supreme Court

| NO SELECTION | ○ |

Place 554, Justice, Supreme Court

| NO SELECTION | ○ |

Place 998, Justice, Supreme Court

| NO SELECTION | ○ |

Place 221, Judge, Court of Criminal Appeals

| NO SELECTION | ○ |

Place 155, Judge, Court of Criminal Appeals

| NO SELECTION | ○ |

Place 166, Judge, Court of Criminal Appeals

| NO SELECTION | ○ |

Place 332, Justice, Supreme Court

| NO SELECTION | ○ |

Place 554, Justice, Supreme Court

| NO SELECTION | ○ |

District 248, Member State Board of Education

| PURP | Patrice Pai | ⊘ |

Place 442, Justice, 33rd Court of Appeals District

| PURP | Orlando Omega | ⊘ |

Central Health Tax Ratification Election

Proposition 1

| For | ⊘ |

Proposition 2

| Against | ⊘ |

Proposition 3

| For | ⊘ |

Austin Community College Board of Trustees Election

Place 7, ACC Trustee

| Umberto Upsigma | ⊘ |

YOUR VOTE COUNTS

Thank you for voting!

Take this confirmation of voting with you

Verify your ballot at:

www.star-vote.org/ballot/

Enter this unique code: **HV1235Z7568RK84**

Find your code on the STAR-Vote website to ensure that your vote was recorded correctly.

Look for election results and other tools for confirming the election at:
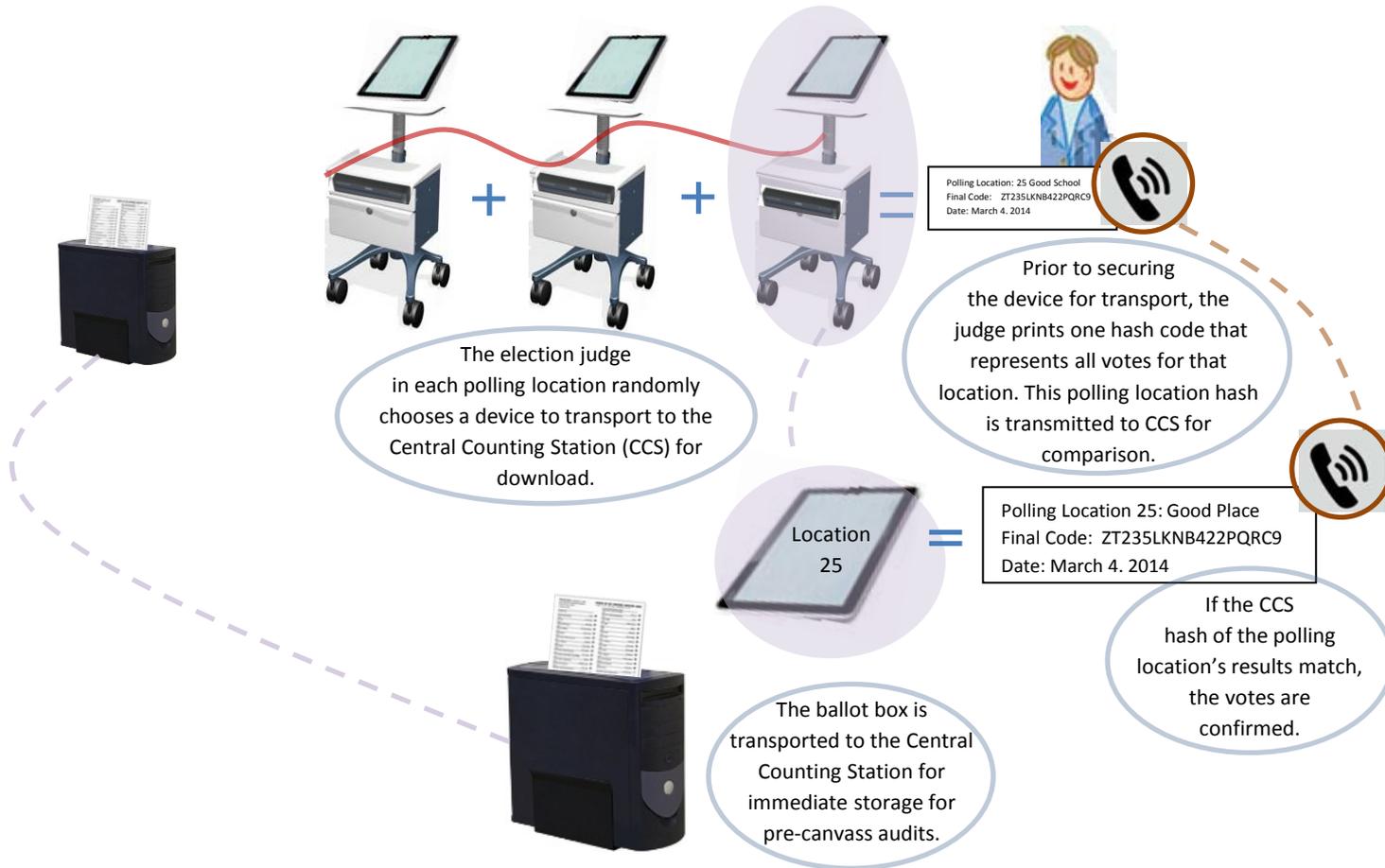
www.traviscountyelections.org

Voting Date: October 30, 2012

Location: Randall's South Mopac

Voting Terminal: UI12345

Time: 18:45:56

Polls Close

The election judge in each polling location randomly chooses a device to transport to the Central Counting Station (CCS) for download.

Prior to securing the device for transport, the judge prints one hash code that represents all votes for that location. This polling location hash is transmitted to CCS for comparison.

Polling Location: 25 Good School
Final Code: ZT235LKNB422PQRC9
Date: March 4. 2014

Location 25

Polling Location 25: Good Place
Final Code: ZT235LKNB422PQRC9
Date: March 4. 2014

If the CCS hash of the polling location's results match, the votes are confirmed.

The ballot box is transported to the Central Counting Station for immediate storage for pre-canvass audits.

Central Counting Station

Location 72 + Location 11 + Location 25

A diverse group of Election Trustees are appointed and each given possession of a laptop. When a specified number of laptops are connected to the central tabulation computer, they act like a key to unlock and tally the encrypted ballots.

Final Total Code: ZT235LKNB422PQRC9
Date: March 4. 2014

=

If the CCS hash of the polling location's results match the posted hash total, the votes are confirmed.

Final Total Code: ZT235LKNB422PQRC9
Date: March 4. 2014

=

Verification

After all votes have been read into the system and results published, the central tabulation system creates a hash code for each cast ballot using the same mathematical computation that was used in the polling location. These computations are published online.

YOUR VOTE COUNTS

Thank you for voting!

HV12352756BRK8

If a voter does not put a ballot in the ballot box, it is considered "spoiled," and becomes part of a live parallel testing process.

SPOILED

The voter can chose to take the ballot home to test the system themselves, or they can leave the ballot with the judge at the polling location. It is marked as "spoiled" and saved for parallel testing by the ballot board. According to Texas law, a voter can spoil 3 ballots.

SPOILED = SPOILED

After results are posted, the images of the spoiled ballots are posted online. A voter may match the retained spoiled ballot to the image online to prove that the system correctly recorded the electronic version of the ballot. Ballots not retained by voters are validated by the ballot board.

Risk Limiting Audit
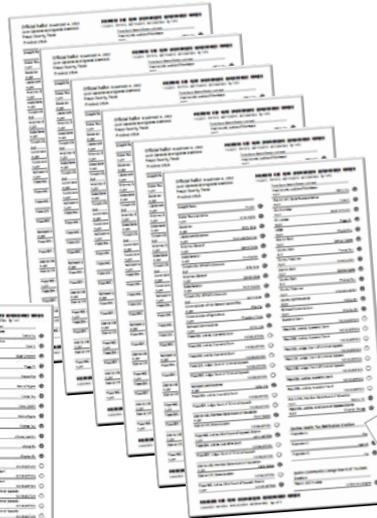
After the election but before the canvass, the trustees reconvene at the final ballot board for late mail, accepting provisional ballots, and performing a risk limiting audit. Using a statistical model based on the number of votes cast and the margins in each race, a specified number of ballots are randomly pulled and the content of the ballots are matched up to their electronic counterparts. The correct number of trustees must be present to use their laptop "keys" to decrypt the specified electronic ballots. If all audited ballots match, there is a high statistical confidence that all ballots were cast and counted as intended.