Date of Hearing: January 15, 2014

ASSEMBLY COMMITTEE ON ELECTIONS AND REDISTRICTING
Paul Fong, Chair
AB 877 (Bocanegra) – As Amended: January 6, 2014

SUBJECT: Direct recording electronic voting systems.

SUMMARY: Revises the definition of a "voter verified paper audit trail (VVPAT)." Specifically, this bill defines a VVPAT to mean a component of a direct recording electronic (DRE) voting system that prints a "synchronous" paper record "facsimile" of each electronic ballot, instead of a "contemporaneous" paper record "copy" of each electronic ballot, that allows each voter to confirm his or her selections before the voter casts his or her ballot.

EXISTING LAW:

1) Prohibits the Secretary of State (SOS) from certifying or conditionally approving a DRE, as defined, unless the system includes a VVPAT, as defined.

2) Prohibits a city or county, on or after January 1, 2006, from contracting for or purchasing a DRE unless the system has been certified or conditionally approved for use by the SOS.

3) Requires a DRE used after January 1, 2006, to have an accessible VVPAT.

4) Requires a DRE to include a method by which a voter may electronically verify, through a nonvisual method, the information that is contained on the paper record copy of the voter's ballot. Requires a paper record copy that is printed by the VVPAT to be printed in the same language that the voter used when casting his or her ballot on the DRE.

5) Defines a VVPAT to mean a component of a DRE voting system that prints a contemporaneous paper record copy of each electronic ballot and allows each voter to confirm his or her selections before the voter casts his or her ballot.

6) Defines a "paper record copy" to mean an auditable document printed by a VVPAT component that corresponds to the voter's electronic vote and lists the contests on the ballot and the voter's selections for those contest. Provides that a paper record copy is not a ballot.

FISCAL EFFECT: Keyed nonfiscal by the Legislative Counsel.

COMMENTS:

1) Purpose of the Bill: According to the author:

   A Direct Recording Electronic (DRE) voting system is a type of system that permits voters to enter their vote into a digital system by means of an electronic interface such as a touch screen, mouse or scrolling cursor. Generally speaking, an interface device in each voting station is linked to a Computer system. The results compiled by each set of voting stations are then transmitted to a central computer system using a variety of computer architectures and transmission modes.

One variation of the DRE system provides a synchronous link between the entry of a vote into a digital system and the creation of a paper receipt facsimile that provides a voter verified paper receipt and can be used in a paper-based audit procedure. In this model, the vote is stored in the database in a transactional and synchronous way. This guarantees that the database transaction is not considered as finished until each database node finishes its transaction and then the receipt is sent to the voter when the vote is successfully stored.

One of the challenges in permitting efficient verification of voting results, and also demonstration of the integrity of the vote, are the subjective elements generally involved in determining voter intent. Voter intention in a DRE system is a binary input from a digital device so ambiguity cannot exist. There is a need for a voting system and ballot collection apparatus that enables objective measurement of voter intention and a method to verify accurate data collection to demonstrate the integrity of the vote.

This bill updates existing statutory language to reflect accepted terminology for DRE systems and the synchronous replication of a voter's ballot through a paper facsimile that acts as a "receipt" for effective auditing and resolution of discrepancies regarding a voter's intent.

2) <u>Direct Recording Devices</u>: In general, DREs are paperless, electronic voting systems that electronically process and store all election data. A DRE allows a voter to view a ballot on a screen and make ballot choices using an input device, such as a pushbutton, touchscreen, or dial, which records the voter's ballot choices. Some DRE systems also employ a card swipe or cartridge system that must be activated before the ballot can be cast. Through the input interface the voter indicates his or her ballot selections. The voter's choices are then stored via a memory cartridge, diskette, or smart card. In most cases the memory device is transported to a central location for tabulation.

3) <u>Voter Verified Paper Audit Trail</u>: In 2002, DRE devices were certified for use in California. However, due to the way in which DREs functioned, a voter would have no way of verifying whether or not the voting system was correctly recording his or her votes. For example, the machine could be displaying one candidate's name on the screen while mistakenly or maliciously storing another candidate's name on the official electronic record as the voter's choice. According to a Caltech/MIT Voting Project 2012 report, because of these concerns, various studies were done and a number of teams examined the voting systems' software and found that although no overtly malicious code was found, the systems were so poorly engineered that they exhibited a high risk of compromise. Furthermore, the report states that other studies that followed showed how the systems could be controlled by malicious parties and infected by viruses.

In an effort to enhance voter confidence and ensure every vote cast is counted, in 2004 Secretary of State Kevin Shelley decertified DREs, requiring the vendors to retest and recertify their equipment. Shortly after, Governor Schwarzenegger signed legislation requiring all DREs to produce VVPATs of electronic ballots to verify that the voter's preferences were accurately recorded.

Consequently, current law requires all DRE voting systems used after January 1, 2006, to

have an accessible VVPAT. In general, the VVPAT mechanism prints the voter's ballot choices on a paper record for the voter to review and verify, prior to finalizing and casting their ballot. Current law also requires voting systems to be accessible to blind, visually impaired, and disabled voters. As a result, DREs are able to provide or convey a voter's ballot choices via a nonvisual method, such as through an audio component. Once the ballot is cast, the paper record of the ballot is retained inside the voting machine as part of the election audit trail to verify the accuracy of the votes recorded. The paper record is made available in the event of an audit or a recount. Current law prohibits a voter from receiving a printed paper record of their vote choices.

4) Unintended Consequences? As mentioned above, current law defines a "paper record copy" to mean an auditable document printed by a VVPAT component that corresponds to the voter's electronic vote and lists the contests on the ballot and the voter's selections for those contests. In addition, existing law explicitly states that a paper record copy is not a ballot. Legislative intent indicates that a paper record copy was created for verification purposes only and not intended to be perceived as a replica or receipt of the ballot, but merely a copy of the voter's selections which cannot be physically handled by the voter. In addition, existing law defines "VVPAT" to mean a component of a DRE voting system that prints a contemporaneous paper record copy of each electronic ballot and allows each voter to confirm his or her selections before the voter casts his or her ballot.

According to the author's statement, the bill intends to update existing statutory language to reflect accepted terminology for DRE systems and the synchronous replication of a voter's ballot through a paper facsimile that acts as a "receipt" for effective auditing and resolution of discrepancies regarding a voter's intent. Consequently this bill changes the term "paper record copy" to "paper record facsimile" and revises the definition of a "VVPAT" to mean a component of a DRE voting system that prints a *synchronous* paper record facsimile of each electronic ballot.

According to the author's office, replacing the term "copy" with "facsimile" was to ensure consistency throughout the Elections Code. However, while other parts of the Elections Code use the term "facsimile," its meaning is interpreted differently. For example, current law prohibits the SOS from approving any voting system that permits a voter to exit a polling place with a facsimile of the ballot cast by that voter at that polling place. The legislative intent behind the use of the term "facsimile" was to encompass all items that could plausibly serve as a "receipt" of a voter's selections. Using the term "facsimile" with respect to DREs may cause confusion as the legislative intent behind the term "copy" was to ensure a paper record copy of a voter's ballot choices was created for verification purposes, not to create an exact replica or reproduction of the ballot itself. The committee may wish to consider whether the use of the term facsimile is appropriate. In addition, the bill does not provide a definition for the new term "paper record facsimile," nor does it make corresponding changes to other sections of law that use the term "paper record copy."

Furthermore, the committee may wish to consider whether revising the definition of "VVPAT" and changing the term "paper record copy" is prudent as it is unclear whether the new terms and their respective definitions will impact currently approved DREs. In other words, the committee staff is unsure if changing the DRE terms will result in creating new standards that will impact currently approved DREs. Will currently approved DREs meet the new standards? Will currently approved DREs need to be recertified in order to meet the

new standards? At this point, it is unclear how the changes in this bill will impact DREs currently approved for use in California elections.

REGISTERED SUPPORT / OPPOSITION:

Support

None on file.

Opposition

None on file.

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