



**State of California**

# **PROCEDURES**

## **Required for Use of the Diebold Election Systems**

**AccuVote-TS Electronic Ballot Station**

These procedures are proposed for adoption by the Secretary of State pursuant to Elections Code sections 19200 and 19205 and shall regulate and govern the use of Diebold Election Systems AccuVote-TS (Touch Screen) Model R6 at all elections governed by the California Elections Code.

These procedures shall be effective upon approval by the Secretary of State and shall be used in conjunction with all other statutory and regulatory requirements. Insofar as feasible, all procedures prescribed herein shall be carried out in full view of the public.

These procedures constitute a minimum standard of performance. They are not intended to preclude additional steps being taken by individual election officials to enhance security and reliability of the electoral process.

Submitted  
July 30, 2004

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## **DIEBOLD AccuVote-TS Electronic Ballot Station**

### **1. AccuVote-TS Overview**

#### **1.1 System Overview**

The AccuVote-TS (touch screen) is part of a comprehensive voting system provided by Diebold Election Systems. The AccuVote-TS is a Direct Recording Electronic (DRE) device that works in conjunction with Diebold's software application GEMS (Global Election Management System). Each AccuVote-TS is a stand-alone device that does not require networking or any connections with an external device in order to operate.

The AccuVote-TS provides electronic ballot display, storage, and ballot station reporting functions. The GEMS application software provides the election set-up, automatic ballot layout, results accumulation, and election reporting functions.

Diebold's AccuVote-OS (optical scan) and the AccuVote-TS may be operated independently or as part of a single integrated system when used in conjunction with the GEMS software application. These products are each certified by an Independent Testing Authority pursuant to FEC voting system standards.

The AccuVote-TS is designed to meet the administrative and logistical needs of election administrators, poll workers, and voters. The AccuVote-TS has the flexibility and capacity to operate in a polling place where it contains one or more ballot styles and/or in an early voting environment where it stores all ballot styles for the entire jurisdiction. The voter operates the AccuVote-TS ballot station by inserting a voter access card and, when the voter's ballot appears, by touching the unit's LCD/Touch Panel display. The touch screen interface allows the voter to choose a language preference (if applicable), to select measure and candidate choices, to view these choices on a summary screen (making changes if desired), and to cast a ballot. Voters may also choose to view their ballot on screen in the normal font or in a magnified, large print font.

Every AccuVote-TS is capable of providing an audio ballot. To access the audio ballot, the poll worker attaches a headset and keypad and issues the voter an access card that has been programmed for audio voting. Used in this manner, the AccuVote-TS is referred to as a Visually Impaired Ballot Station (VIBS). The audio ballot can be presented with the screen blank or with the screen showing a large print font. Blind voters generally use the audio with the blank screen, while low vision or mobility impaired voters use it with the screen showing.

## 1.2 GEMS and AccuVote-TS

GEMS software functionality includes election definition, ballot layout, programming of voting device memory cards and election media, audio ballot recording, election results reporting, election results archiving, and auditing. AccuVote-TS-related customization is performed in GEMS, and includes:

- header, footer and vote box sizing
- defining the number of ballot columns
- defining scaling percentage
- defining the control button height, position and type
- defining voting flags
- defining coloring options

All audio text pertaining to the election is recorded in the GEMS database. All VIBS operational instructions are stored in the GEMS TS text folders. For more information on defining AccuVote-TS options in GEMS, refer to section *3.11 AccuVote-TS Options* in the *GEMS User's Guide 1.18 rev 11*.

The AccuVote-TS ballot station includes the following components:

- 15" LCD touch screen display
- Smart card reader
- RS232 serial connector
- 2 PCMCIA ports: 1 for flash memory, 1 for modem/general use
- Real time clock
- Internal Printer
- Battery backup
- PS/2 keyboard connector
- Headphone connector
- Self-contained voting booth

(See Figure 1-1 on next page)

Election media are programmed with election and ballot information and are stored in one of the unit's two PCMCIA slots.

The power switch, two PCMCIA slots, PS2 keyboard connector and internal printer are secured in locked compartments. The keyboard connection is used for manufacturing and technician purposes only. A keyboard is not required for the operation of the AccuVote-TS unit.

The AccuVote-TS LCD touch screen display may be raised, lowered or turned sideways for ease of voting and/or to reduce glare.

Each AccuVote-TS is equipped with an internal printer that is used to print zero reports, election results, and audit reports.

Voter access cards are inserted into the card reader to access the voter's ballot. This card contains no personal information about the voter, but is programmed only with precinct and ballot style information. In a primary election, the voter card is programmed to access the appropriate political party ballot. A separate access card is designated as Supervisor Card for Administrator/Inspector use and is utilized at designated points in AccuVote-TS operation as necessary for control purposes.

The serial connector is used to connect the AccuVote-TS either directly to the GEMS host computer or to a modem that can remotely connect to the host computer, in order to either program PCMCIA election media or transfer election results. A modem card may be installed into the second PCMCIA slot in place of an external modem for transmission of semifinal election night results.

The serial connector is used to connect the unit to a numeric keypad, which provides input when voting with the audio ballot. Headphones are plugged into the headphone connector for Visually Impaired Ballot Station AccuVote-TS units. Speakers may also be plugged into this connector for convenient testing of audio ballots.

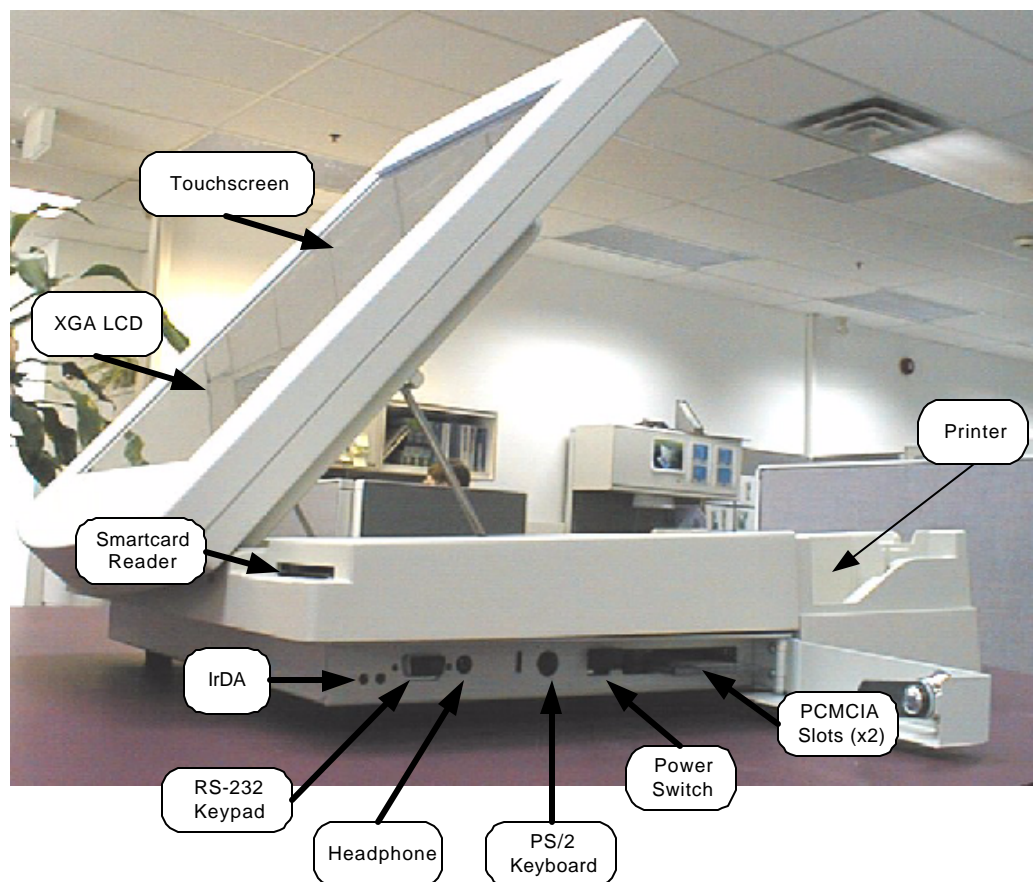


Figure 1-1

### 1.3 Election Process

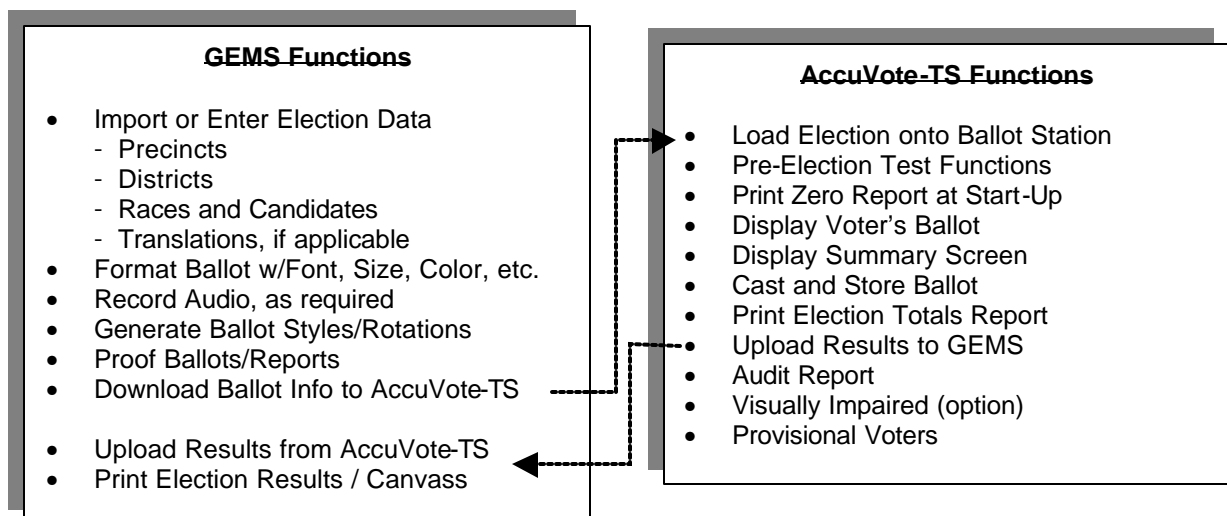
Local election officials gather election information which is entered into the GEMS application software. The election information may be entered directly into the GEMS system via an MS-Windows graphical user interface or may be accomplished via an import of data from the jurisdiction's voter registration and election management system.

Once all the election specific information is entered or imported into GEMS, the data is formatted using the GEMS desktop publishing capabilities. This allows the electronic ballot presentation to be enhanced with desktop publishing features such as adjustment to font size, font type, bold, italics, color, bordering, shading, and spacing. The visual presentation of the ballot is under the control of the election administrator.

Once the ballot information has been finalized and formatted, electronic ballots are generated and proofed for accuracy by the jurisdiction. Upon verification that the ballot information is correct, the files may be transferred to the AccuVote-TS removable storage media (PCMCIA card) via:

- (1) direct RS-232 connection;
- (2) modem; or
- (3) by local area network

The PCMCIA storage media hold both the ballot information (visual and audio) and the voted ballot election result as voting progresses. Voted ballots are stored redundantly on the AccuVote-TS removable storage media (PCMCIA card) and the "flash" system memory. Results may then be directly uploaded to the GEMS host from each unit, or accumulated in the precinct or regional return center, and then uploaded to GEMS via phone line.



Prior to each election, every AccuVote-TS unit and PCMCIA card to be used in the election is tested in conjunction with the GEMS system according to the prescribed procedures as described in this procedure manual. These tests incorporate physical hardware and software diagnostics tests, as well as election-specific system testing to ensure that all phases of the election have been tested.

Testing includes the following components:

- AccuVote-TS hardware
- AccuVote-TS software
- Election-specific automated testing
- Audio testing for visually Impaired voters
- System testing with GEMS
- Printing of test reports

Voting is initiated when the voter inserts a voter access card into the ballot station card reader. The card reader identifies the voter's precinct and party (if the election is a primary), and presents the appropriate ballot to the voter, preceded by voter instructions, and language options as appropriate to the jurisdiction. The access card may also determine whether a voter receives a visually impaired (audio) ballot with the ballot screen showing or hidden.

When the AccuVote-TS displays the electronic ballot to the voter, candidates and race responses are selected by touching the corresponding voting marks on the LCD. Once all selections are complete, the voter is presented with a summary screen of voted races allowing a review of the ballot. Races that are blank are highlighted for the voter, and allow the voter to go back and add to or modify their prior selections. When the voter has reviewed their ballot, they may then "cast" their ballot by pressing the CAST button on the summary screen.

The AccuVote-TS also provides a Visually Impaired Ballot Station (VIBS) option, whereby the voter may vote by pressing buttons on a numeric, telephone-style keypad in order to select pre-recorded race options.

The results of ballots cast are stored both on an Internal Flash File System, as well as external PCMCIA memory. At the close of voting, election results reports are printed. Several options exist for the consolidation of election results to the GEMS host computer. Results may be transferred directly to the GEMS host computer, or accumulated to another AccuVote-TS unit's PCMCIA card, and then uploaded to the GEMS host computer. Results may be transferred either by means of a direct connection, by modem, or by local area network.

The AccuVote-TS ballot station software program provides controlled access to its functions, as well as additional security features, including provisions for utilizing the audit process. The software interfaces with the GEMS election database that defines issues, races, and candidates



for a given election. The AccuVote-TS software provides the voter with a stand-alone, user-friendly interface for casting ballots. It identifies the voter and the appropriate ballot. The software provides for complete integrity and anonymity of the voter data.

## 1.4 Definitions

This section contains a comprehensive glossary of terms used with the AccuVote-TS, the AccuVote-TS firmware, and related functions in GEMS, in alphabetical order.

### *“Absentee Voter”*

A voter who does not vote in their polling place, but does vote using either mail ballot or electronic ballot at a satellite location.

### *“AccuVote Server”*

The console window used in GEMS for programming AccuVote-TS election media and uploading election results.

### *“AccuVote-TS”*

This system consists of hardware and software for the electronic ballot station functions, such as proper ballot selection, detecting and recording voter choices, printing of reports, etc.

### *“Admin Card”*

The smart card programmed to allow access to supervisor functions on the AccuVote-TS ballot station. It is also needed to close the polls and initiate printing of results.

### *“Administration Screen”*

The various functions of the administrative window on the AccuVote-TS designed only to be accessed at specified points in the election process. Functions on this screen include: Start Election, End Election, Transfer Polling Data, Exit Administrative State, and Shutdown System.

### *“Archive”*

Election and election results files preserved for back-up or election recovery purposes.

### *“Archiving of Election Data”*

Once the transport media results have been entered on the host, the removable disk is archived. Verification of tabulations can be re-created by comparing records from the fixed storage on the AccuVote-TS with the results from the transport storage on the disks.

### *“Audio ballot”*

The ballot composed in audio format, containing identical race and candidate content and ordering as the corresponding visual ballot, and including operational instructions for the selection of candidates and ballot measures, traversing the race list, definition of write-in candidates, and casting of ballots.

*“Audit Log”*

An audit record of all audit transactions on the AccuVote-TS. The audit log provides the supporting documentation for verifying the correctness of the reported results. The audit function is automatic and encrypted and presents a record of all system activity.

*“Backup”*

The internal “flash” memory storage location in which elections and election results are stored.

*“Ballot”:*

A ballot refers to a rotated ballot style.

*“Ballot Id”*

A unique identifier number assigned to the ballot.

*“Ballot Serial Number”*

A unique serial number identifying a voted AccuVote-TS ballot.

*“Base Precinct”*

Any largest area of a jurisdiction not intersected by district boundaries.

*“Ballots Cast”*

The total number of ballots cast on either an individual AccuVote-TS or at a polling location, or on the GEMS host accumulation/reporting system.

*“Ballot Station Software”*

A single integrated software program resident on the AccuVote-TS motherboard that displays, processes, reports, and transfers electronic ballot information.

*“Blank Voted”*

A ballot with no voter selections in any race.

*“Button”:*

An object on the GEMS user interface which is touched in order to activate a function.

*“Candidate”*

An individual running for office, which voters have the opportunity to vote for on a ballot.

*“Cast Ballot Button”*

This button is pressed when the voter wishes to cast his ballot after all specifications have been made.

*“Challenge Board”*

The function used to review challenged ballots.

*“Challenged or Provisional Ballot:”*

A ballot corresponding to a voter whose right to vote at a polling location has been challenged or a voter who insists that they be allowed to vote at the polling place in question. Challenged or provisional ballots are reviewed by administration prior to being released for counting or rejection.

*“Copy”*

The number of times a memory card or election media has been programmed without ballot layout having changed.

*“Count”*

A field display on the AccuVote-TS to indicate either the number of ballots counted in the current election, or the total number of ballots counted since manufacture. The first is an Election Count and the second is a System Count.

*“Current candidate”*

The candidate currently selected on either the visual or audio ballot.

*“Current race”*

The race containing the current candidate or ballot measure.

*“Central Tabulating System” also referred to as GEMS*

The computer system that reads the votes from the AccuVote-TS removable media, and tabulates the votes from all AccuVote-TS ballot stations and all polling places (either satellite, central or precinct locations).

*“Closed Primary”*

An optional ballot criterion for conducting primary elections in which voters affiliated with a particular party may vote only for that party's candidates.

*“Contest”*

The aggregate of candidates who run against each other or among themselves for a particular office or number of offices, or ballot measures.

*“DHCP”*

Dynamic Host Configuration Protocol is a network protocol that enables a DHCP server to automatically assign an IP address to an individual computer's TCP/IP software. DHCP assigns a number dynamically from a defined range of numbers (ie., a scope) configured for DNS servers or WINS servers.

*“Download:”*

The programming of election and ballot information onto the removable storage media for the AccuVote-TS. The media will be PCMCIA storage devices.

*“Election Name”*

The name of the election programmed to election media.

*“Electronic Ballot”*

The electronic ballot is displayed with the appropriate candidates and issues presented on a touch screen for the voter to make choices and record his/her votes.

*“Header”*

Text information that appears on the ballot identifying the race title and the number of selections available to the voter for the race.

*“Hide Ballot”*

The visually impaired ballot station option to hide the visual portion of the ballot as the audio ballot is played; programmed to the voter smart card.

*Host Computer:*

The GEMS computer, interfacing with GEMS clients and voting devices.

*Host Name:*

The name or IP address of the GEMS host computer.

*“Key Card”*

The ‘Key Card’, created using the Key Card Tool, which may then be used to encode the security key values on the election’s smart card reading equipment.

*“Key Card Tool”*

The Key Card Tool, a stand-alone application, allows the user to create a smart card encoded with user-defined security codes or *keys*, and is also used to encode supervisor-type smart cards with the election’s security keys; also used to update the card’s supervisor password.

*“Keypad”*

A telephone-style keypad used to enter commands in the audio ballot.

*“Language”*

A ballot display selection available on the AccuVote-TS, which allows the voter to select a ballot in the language of their choice, e.g. English, Spanish, Chinese, Japanese, Vietnamese, Tagalog, Korean, and French are languages that have been used on the AccuVote-TS. Languages are defined in the GEMS ballot layout software application.

*“Machine ID”*

An AccuVote-TS unit is given a software tracking number or “machine ID” during the initial start-up of the AccuVote-TS in order to track election results by machine ID at a polling location. This is not the same as the unit serial number.

*“Magnify”*

The ability to increase the size of ballot text for the benefit of visually impaired voters.

*“Number to Vote For”*

The number of candidates, responses or parties that a voter may select in a race without incurring an overvote.

*“One Click Vote”*

The ability to make an alternative selection on the ballot without having to click twice in order to disable an existing selection.

*“Official Election Mode”*

Official Election Mode is the operating mode in which the official election occurs. This application mode differs from “test mode”, where all administrative functions take place such as machine settings, testing, and diagnostics.

*“Over vote”*

The condition of voting for more candidates or selections than a race allows. The AccuVote-TS does not allow a voter to vote for more than the “Vote For” limit of selections.

*“Party”*

The political party affiliation of candidates for federal, state and central committee offices.

*“Password”*

An authentication of the user’s access to the network.

*“PCMCIA card”*

A solid state memory device utilizing industry standards for data storage of election and ballot information. The AccuVote-TS PCMCIA cards come in various capacity sizes and are programmed for a precinct, vote center, or entire jurisdiction. The PCMCIA card also is used to accumulate and tally election results.

*“Phone”*

The telephone number used for modem transmission.

*“Power”*

Power status indicator; defined as either charging (yellow bar on screen) or AC off line which means the AccuVote-TS is operating off the battery. The AC off-line indicator is a red bar that

shows the remaining percentage of battery charge available.

*“Precinct”*

The smallest division of the electorate within a county, city, or district identified by geographic boundaries defined by the local election official; expressed either as a base precinct, a geographical unit in which voters vote, or a report precinct, to which election results are reported.

*“Programming election media”*

The act of transferring election and ballot information to election media.

*“Protocol”*

A set of parameters governing the communication and transfer of information between the host computer and the AccuVote-TS unit.

*“Protection of Results Data”*

All data is protected through both DES encryption and system design functions. The encryption process makes information indecipherable to protect it from unauthorized viewing, tampering or use.

*“Protective Counter”*

The protective counter provides a total life span count of all ballots cast on the AccuVote-TS since manufacture. This is called the System Counter.

*“Provisional Voter Ballot”*

Pursuant to Elections Code section 14310, a ballot given to a voter claiming to be properly registered, but whose qualification or entitlement to vote cannot be immediately established upon examination of the index of registration for the precinct or upon examination of the records on file with the county elections official, including the list of absent voters.

*“Public Counter”*

The Public Counter is set to zero prior to opening of the election and that records the number of ballots cast during that particular election. This counter is known as the Election Counter.

*“Removable Storage Media”*

The external media which stores election and ballot information programmed for the AccuVote-TS, and to which election results are tallied once ballots are counted. Also referred to as PCMCIA card or PC card.

*“Recount”*

The configuration of an election for recounting one or more races, involving programming selected memory cards and uploading and reporting results for a recount reporting set.

*“Report precinct”*

The results of ballots counted in base precincts are tallied to report precincts.

*“Rotation”*

The candidate rotation rule determines the order candidates are to appear on ballots in a particular geographic area.

*“Running State”*

In the running, or “Set for Election” state, no modifications are allowed to the election definition. In this state, the removable media is prepared for distribution to the AccuVote-TS.

*“Semi-Official Canvass”*

The process of collecting, processing, and tallying ballots and, for statewide elections, reporting results to the Secretary of State on election night. The semi-official canvass may include some or all of the absent voter vote totals. The semi-official canvass is contrasted with the official canvass which begins not later than the first Thursday following the election, and for statewide elections must result in final certification 35 days following the election (Elections Code section 15310)

*“Serial Number”*

The AccuVote-TS serial number, identified as a label on the external surface of the AccuVote-TS. This is different from the Machine ID, which is used by the software application.

*“Scale %”*

The scaling value applied to the AccuVote-TS image; programmed in GEMS.

*“Scale”*

The increasing or decreasing of an image from nominal size.

*“Straight Party”*

A party selected in a straight party or endorsement race which automatically counts candidates endorsed by the party in all straight party-votable races, subject to the straight party tally rule defined for the election. Straight party voting is not allowed in California.

*“System Total”*

The number of ballots cast on the AccuVote-TS unit since the date of manufacture. Also referred to as the “Protective Counter”.

*“Set-up Diagnostics”*

A system test of the software and hardware of the AccuVote-TS prior to entering ballot logic.

*“SmartCard Authentication”*

The process by which a SmartCard is inserted into the AccuVote-TS and parameters verified for the functions being requested. These range from access security to election security to administrative security functions.

*“Source Code”*

The version of a computer program in which the programmer's original programming statements are expressed in a source language, which must be compiled, assembled and linked into equivalent machine executable object code, thereby resulting in an executable software program.

*“TS Text”*

Sets of files residing in GEMS, containing multi-language operational instructions which are programmed to the AccuVote-TS.

*“Type or Network Type”*

Type refers to the type of network connection used for transmission; for example, 'Local Area Network' if the computer is networked to a hub.

*“Undervoted Race”*

A race with fewer candidates selected than the number to vote for; cannot occur in a vote-for-one race.

*“Unit”*

The designated machine number in the Vote Center.

*“Upload”*

The process of transferring election results from AccuVote-TS units to the GEMS host computer.

*“User Name”*

The network user Id.

*“Version”*

The vote center/machine ID download version.

*“VIBS”*

Visually Impaired Ballot Station, an AccuVote-TS plug-in feature that allows ballots to be voted and cast in audio format.

*“Visual ballot”*

The ballot displayed on the touch screen, either when voting a non-VIBS ballot, or when voting a VIBS ballot without the ballot display hidden.

*“Vote Center”*

A physical polling location, containing one or more voting devices.

*“Voted Ballot”*

A ballot which has been marked by the voter.

*“Votes Cast”*



The number of votes cast in a tally, distinct from the number of ballots cast.

*“Voting Device”*

A Diebold Election Systems ballot counting device; either an AccuVote-OS or AccuVote-TS.

*“Voting Mark”*

The mark on a ballot created by the voter’s selection of preferred candidate or measures.

*“Voter Access Card”*

Also referred to as a voter “SmartCard”. This card indicates the appropriate ballot to present to the voter and permits an eligible voter to cast a ballot on the AccuVote-TS. The card will not allow multiple voting or any access to the election management system.

*“Voter Exit Screen”*

The Voter Exit Screen prompts the voter to remove the card from the card reader. When the card is removed, the system returns to the Open Polling Place State.

*“Voter Instruction Screen”*

The Voter Instruction screen presents the voter with a simple set of instructions for making voter selections and recording the ballot. It appears after the voter inserts the access card.

*“Write-In”*

Upon choosing the write-in option, which allows a voter to select a person whose name does not appear on the ballot, the voter is presented a screen that allows him/her to spell out the name of their candidate by touching the appropriate letters. When the voter touches the Record Write-In button, the name written in appears on the screen showing the applicable contest. The name written in will also appear on the Summary Screen.

## 1.5 Description of AccuVote-TS Operation

Each AccuVote-TS is a self-contained unit with no assembly required. Each unit is a direct entry stand-alone voter station, weighing approximately 48 pounds when enclosed in its self-contained voting booth.

Once the voter's eligibility to vote in the precinct has been established, the voter is eligible to vote in the precinct, that voter is issued a voter access card. The voter proceeds to any available ballot station and inserts his/her voter access card into the slot on the lower front side of the voting machine. Upon reading this card, the ballot station will then present a language selection screen, if applicable, and then an instruction page. After reviewing the instruction page, the voter touches the “Start” button to begin voting. The system reads the voter access card, which has precinct and ballot style information and only presents the candidates and issues upon which the voter is entitled to vote. The voter will proceed through the contests by touching the screen containing the candidates or measures of his/her choice. He/she may change his/her mind by merely touching the choice again and re-selecting. He/she may page through the issues by

pressing the “previous” or “next” options on the bottom of the electronic ballot page. The voter may go back to the instruction page by pressing the “Instruction” button.

On the last page, the voter will be offered the opportunity to “Cast” or “Review” the ballot. The voter may review the ballot as many times as desired until choosing to “Cast” the ballot. If the voter wishes to discontinue the voting process, the poll worker can access a button to cancel the ballot. Voters may cast a blank ballot. Once the voter “Casts” his/her ballot, the AccuVote-TS disables their card and records their votes.

## **2. General System Specifications**

### **2.1 The AccuVote-TS shall:**

- (1) Provide Facilities for voting for such candidates as may be nominated and upon such questions as may be submitted;
- (2) Permit each voter in a presidential general election to vote by touching one box for electors for a pair of candidates for President and Vice President of the United States;
- (3) Provide a method for write-in voting and shall report the number of votes cast in each contest in the write-in voting position;
- (4) Permit each voter to vote at any election, for any person, for any office, for as many persons for an office, and for or against any question for which the voter is entitled;
- (5) Preclude each voter from voting for more persons for any office than he/she is entitled to vote for and from voting for any candidate for the same office or upon any question more than once;
- (6) Be capable of adjustment by election officers, so as to permit voters in primary elections to vote only for the candidates seeking nomination of the political party with which they are affiliated, or non-partisan candidates only if they are not affiliated with a political party;
- (7) Permit non-partisan voters to vote either a non-partisan ballot or a party ballot for any political party that has chosen to allow non-partisan voters to participate in its primary election;
- (8) Permit each voter to change his or her vote for any candidate or upon any question appearing upon the ballot face, up to the time of the final operation to register his or her vote by touching the “cast ballot” button;
- (9) Permit and require voting in absolute secrecy, and shall be so constructed that no person can see or know for whom or what any other voter has voted or is voting, except voters receiving assistance as prescribed by law;
- (10) Have a “public counter” which is visible from the outside of the machine, and which shall show during any period of voting the total number of voters who have operated the machine during the applicable period of voting;
- (11) Have a “protective counter” which is visible from the outside of the machine, which cannot be reset and which shall record the cumulative total number of activities of the operating mechanism;
- (12) Preclude the voting machine from being re-opened for voting upon closing the polls;
- (13) Be provided with a voting booth which shall conceal the actions of the voter while voting;
- (14) Be constructed of material of good quality, in a neat and workmanlike manner;

- (15) Be constructed so it is easy for a voter to learn and understand the method of operation;
- (16) Be so constructed that during the progress of voting, it shall preclude every person from seeing or knowing the number of votes registered for any candidate or ballot measure and from tampering with any of the recorded votes;
- (17) Be safely transportable;
- (18) Register and record votes correctly and accurately. This shall be done by recording the votes in the audit trail memory on the ballot station, and also in the results sets in redundant storage places--one recount results set recorded as summary totals for each candidate, and the other recorded as individual ballot images of each voter's selections, randomized in order to protect the voter's secrecy. After the voter has cast his/her ballot, the AccuVote-TS will store the ballot images in a redundant manner. In the event the image is not captured redundantly, the ballot station will so notify the voter by a message on the screen; a poll worker will be notified and a technician will be contacted;
- (19) Be capable of automatically producing a printed form of machine totals after the polls are closed. The machine shall be capable of printing the same number of results reports as the number of return sheets required by law; and
- (20) Be capable of consolidating all machine totals from all machines within a precinct and printing the precinct totals, in printed form, after the polls are closed.

## 2.2 The Central System shall:

- (1) Be capable of accumulating and reporting by precinct the total votes cast for each candidate and for or against each question;
- (2) Be capable of tabulating and reporting the vote cast for each candidate and for or against each question, by groups of precincts, such as legislative districts, and complete jurisdictions.

## 3. **AccuVote-TS Hardware and Software**

- 3.1 The AccuVote-TS's provided as part of the system are stand-alone direct recording electronic voting devices. Using Touch Screen Technology, the voter is required to touch the screen for the candidates/issues of their choice.

Except when otherwise authorized by the Secretary of State, the distribution of the voting machines shall be no less than one per 300 registered voters, and an additional machine for every fractional part of such unit; in the case of special elections, however, the local election official may exercise discretion in determining the number of machines to be furnished to each precinct polling place.

- 3.2 Master copies of the ballot results sets shall be retained in secure locations designated by the local election official and separate from the location of working copies from the time of completion of pre-election logic and accuracy testing as detailed in Section 4 of these procedures;

- (1) For as long after the election as required by law; or
- (2) By order of a court or directive of the Secretary of State

After certification of the ballot results sets, any changes to the central tabulating software or the ballot results sets shall be completely documented in the central system internal audit log. Ballot control logic source code shall be placed in escrow pursuant to state law.

#### **4. Pre-Election Set-Up and Testing Requirements**

Complete testing of the AccuVote-TS shall be conducted before the use of this equipment in an election. This testing is required for equipment to be used in satellite locations, polling places and in the counting center. These tests include Acceptance Testing of new equipment and Logic and Accuracy testing prior to each election.

##### **4.1 Set-up Diagnostics**

Each AccuVote-TS must pass a standard diagnostic test within 30 days before placing a removable PC card in the voting machine for verification and testing. This allows the technician to work on the AccuVote-TS in advance of the arrival of the test media. By conducting diagnostic tests in advance, any error condition found can be promptly corrected. Should an error condition emerge, the troubleshooter allows the technician to test all major sub-systems and correct any error conditions.

##### **4.2 Insertion of Election Data via Removable PC Card**

The AccuVote-TS is set up for testing by the simple installation of the removable media, which contains election-specific data. The removable media is easily installed by unlocking the door on the side of the ballot station and inserting the removable PC card into the disk drive.

##### **4.3 Demonstrator Devices**

In addition to official AccuVote-TS, a mock demonstrator device complete with mock electronic ballots and a supply of mock Voter Access Cards may be provided to each voting location. No official electronic ballot may be used for demonstration.

##### **4.4 Procedure for Preliminary Set-Up and Content Proofing**

###### **4.4.1 System Proofing**

System Proofing is the mandatory, preliminary, in-house testing of all phases of election preparations except the Logic and Accuracy tests of the computer hardware and software used to tally votes. System proofing shall include, but is not limited to, verification of the correctness of the following:

- Assignment of jurisdictions participating in the election;
- Linkage of precincts to offices in which the election will be held;
- Ballot content of each ballot type, including offices, district designations, candidate assignment and rotation, and ballot measures, all in the proper sequence;
- Preparation of instructions, candidates' names, political designations, number to be elected, candidate rotation;

- Formatting of headers and footers for each issue and electronic ballot page;
- Print ballots to verify correctness of content;
- Testing of all removable PC cards to be used in the election.

#### 4.5 Logic and Accuracy Pre-Test

Not more than 10 days before Election Day, the local election official shall have the entire system tested to ascertain that it will count properly the votes cast for all offices and all questions.

Successful testing will demonstrate that each candidate and ballot measure receives the proper number of votes, the system accepts only the proper ballot types, and all tabulations are reported accurately. In the case of offices for which the voter is allowed to vote for more than one candidate, at least one ballot shall be voted with the maximum allowed number of choices.

##### 4.5.1 Election-Specific Test

The election-specific test is an essential method of testing electronic ballots to be used in that particular election to ensure that the AccuVote-TS's perform adequately. The purpose of this test is to ensure that the ballot used with a particular election will function properly when run with the ballot tabulation software for that election.

##### 4.5.2 Accuracy Testing

Accuracy testing consists of those procedures necessary to ensure hardware and software to be used in the election is working properly, both as individual units and as a combined system.

###### 4.5.2.1 Performance of Accuracy Tests

Accuracy tests shall be performed prior to Logic and Accuracy Certification to the Secretary of State and again within 72 hours prior to tabulation on Election Day. In the event of a hardware failure necessitating that the component be repaired, replaced or adjusted, the accuracy test shall be re-run on the AccuVote-TS.

The test shall be conducted by using a pre-determined test script of at least one vote for each possible selection within an office or question. The test script for each voting machine must test all possible candidates or questions for each precinct. If a voting machine or the central tabulating system does not accurately count the test script or test vote, the cause for the error shall be ascertained and corrected. An errorless count shall be successfully produced before the system is approved for use in counting votes.

###### 4.5.2.2 Preparation of Accuracy Test

The responsible elections official shall prepare the following accuracy test deck and make it available for testing. Predetermined results of accuracy tests must be available for inspection and sign off by the Logic and Accuracy Board.

###### 4.5.2.3 Accuracy Test

- Using GEMS, save the election specific database as "pre-test"
- Download the election-specific database onto a removable PC card

- Create one removable PC card for every AccuVote-TS
- Using a TS unit in test mode, create one voter access card for every ballot style
- Install removable PC card(s) into every AccuVote-TS and START “pre-test” election
- Switch on unit and make sure all AccuVote-TS public counters say “zero”
- Using GEMS, print out two (2) sets of paper ballots
- Print out to a paper ballot all precincts, splits, if applicable, and all ballot combinations.

#### 4.5.2.3.1 Voting the Paper Ballot for Testing Accuracy on the AccuVote-TS

- Using Set #1 of paper ballots – vote for the top candidate in every race, in every precinct
- Using Set #2 of paper ballots – vote for all other candidates randomly, making sure each candidate gets at least one vote
- Leave at least one race undervoted
- Keep tally from each set of paper ballots

#### 4.5.2.3.2 Procedure for Testing Accuracy on AccuVote-TSs and Tabulation Software

The Accuracy Test will be in THREE steps:

##### STEP ONE – Will test the Accuracy of the Program and Tabulation Software

- On one AccuVote-TS, use Set #1 of the paper ballots – vote for the top candidate in every race, in every precinct
- After completing the vote, END the election, print the results tape and remove disk
- Print a Zero Report from the Tabulation Software (GEMS)
- Insert the PC card into the designated TS unit to upload to GEMS and print the Election Summary report from GEMS
- Match the summary report with Set # 1 tally sheets for completion of the first part of the Accuracy Test.

##### STEP TWO – Will test the Accuracy of the Program and Tabulation Software

- Using a separate AccuVote-TS, install PC card
- Switch unit on
- On the same AccuVote-TS, use Set #2 of the paper ballots – do not vote for the top candidate in every race. (you have already tested that voting position in Set #1.)
- Proceed by voting for all the other candidates randomly in all races, all precincts.
- Upon completion of testing Set #2, END the election, print the results tape, and remove PC card
- Print a Zero Report from the Tabulation Software (GEMS)
- Insert the PC card into the designated TS unit to upload to GEMS, and print the Election Summary report from GEMS
- Match the summary report with Set #2 tally sheets for completion of the second part of the Accuracy Test

##### STEP THREE – Will test the Hardware function of the AccuVote-TS when installed with the election-specific database software.

- Assemble all the other AccuVote-TS units in use for the specific election
- Divide Set #1 and Set #2 of the paper ballots equally among all the Ballot Stations

(i.e. if you have 50 ballot stations and 400 paper ballots you would vote 8 ballots on each Ballot Station)

- At this point it does not matter which ballots you vote on each machine – you’re testing hardware functionality with the software application.
- Proceed with voting from the paper ballot on each AccuVote-TS
- Upon completion of voting each Ballot Station, END the election print the results tape, and remove the PC card from each AccuVote-TS.
- Print a Zero Report from the Tabulation Software (GEMS)
- Install each PC card into the TS unit designated as the accumulator and load each card
- When finished with each vote center, print an accumulation report for each vote center from ALL Ballot Stations.

4.5.3 The resulting logic vote tallies shall be compared in detail with the predetermined logic vote tallies. Any differences between the two logic vote tallies shall be resolved, and logic testing shall be performed as many times as may be necessary to achieve a logic vote tally identical to the predetermined logic vote tally.

4.5.4 If the report results show any variance in the tabulation of votes, the cause for the error shall be ascertained and corrected and an errorless count shall be made before the system is approved for use in counting votes.

4.5.5 The election administrator enters simulated voter selections, and casts votes in a predetermined voting pattern. The voting pattern must insure each candidate and each ballot measure receives at least one vote, tests under vote (it is not possible to over vote on the AccuVote-TS) and accepts only the proper ballot types.

#### 4.6 Retention of Test Scripts

The successful Logic and Accuracy tests, conducted at the time of certification (or re-certification) if necessary to the Secretary of State, storage logs or records, if any, and balancing reports, if any, shall be retained as long as the electronic ballots, stored on a PC card, are required to be kept for the election.

#### 4.7 Securing the AccuVote-TS

After the Logic and Accuracy testing has been successful, the AccuVote-TS units are ready for delivery to the polling locations. This process includes recording the protective counter number, locking the ballot station in the closed polling location position, placing a copy of the Pre-Logic and Accuracy Test report with each machine and storing the machine in a satisfactory manner in accordance with vendor specification and state law ensuring its security.

#### 4.8 Certification of Logic Test

Logic test requirements apply to all elections; however, submission of the seven-day certification of logic testing to the Secretary of State is required only prior to statewide elections and elections to fill

vacancies in the Legislature or Congress.

#### 4.9 Logic and Accuracy Board

Not later than seven days before each statewide election, or each election to fill a legislative or Congressional vacancy, the Secretary of State must receive a copy of the Logic and Accuracy Board's certification. For local and district elections, the Logic and Accuracy Board members shall submit their copy of the Logic and Accuracy Board's certification to the local elections official who is conducting the election as described in 10.6.

#### 4.10 Ballot Tabulation Programs

Send copies of ballot tally programs to the Secretary of State. These must be received by the Secretary of State no later than seven days before each statewide election as described in 10.5.

#### 4.11 Establish an Election Observer Panel as described in 10.7.

### **5. Election Procedures**

#### 5.1 To set up the AccuVote-TS, complete the following steps:

- 5.1.1 Plug the ballot station into the AC outlet
- 5.1.2 Use key to open the side door on the machine and turn power switch on
- 5.1.3 Report any problems to the appropriate election official
- 5.1.4 Deliver supplies as necessary to conduct elections
- 5.1.5 Make a demonstrator device available, if applicable
- 5.1.6 Assemble voting booths with AccuVote-TS

#### 5.2 Open the Polls:

- 5.2.1 Unlock printer cover and side door and turn power switch ON.
- 5.2.2 Allow zero report to print; designated election officials should verify zero counts in all races and sign in appropriate space
- 5.2.3 Roll up report and store it in the printer compartment
- 5.2.4 Lock printer compartment and side door.
- 5.2.5 Place key in envelope for storing while the polls are open.
- 5.2.6 Before the precinct board allows votes to be cast on any machine, it shall proclaim aloud at the place of election that the polls are open.

#### 5.3 While the Polls are Open

- 5.3.1 During the day, at least every hour, inspect each ballot station to ensure that the cord is connected and screen is displayed properly.
- 5.3.2 Offer to instruct each voter in the proper method of inserting a Voter Access Card into the ballot station. Offer each voter further instruction and practice time, if necessary.



- 5.3.3 Surrender of Absent Voter Ballot: No person to whom an absent voter ballot was issued is permitted to vote at the polling place unless he or she surrenders the ballot. The ballot is to be marked "SURRENDERED" and placed in the container marked for spoiled and unused ballots. The voter is then permitted to vote in the normal method for the precinct.
- 5.3.4 Voted Ballot Sealed: If a voter returns a voted absent voter ballot, verify that the ballot is sealed and that the signature of the voter is on the identification envelope. Require any person who returns an absent voter ballot in person, either to a polling place or to the elections office, to sign a log or record before depositing his or her voted and sealed ballot in the specially marked container.
- 5.3.5 Activating the AccuVote-TS
- 5.3.5.1 After the voter's name is checked off the roster, they will be given a Voter Access Card. As the voter approaches any available ballot station the inspector will allow the voter to enter the voting booth.
- 5.3.5.2 The system reads the Voter Access Card for the appropriate ballot display.
- 5.3.5.3 Upon casting the vote the results are stored on both the removable media and the flash memory.
- 5.3.5.4 Redundancy provides a check and balance where the numerical count of both files must match.
- 5.3.5.5 The results are stored in a random order
- 5.3.5.6 After touching the "Cast Ballot" button the public counter and protective counter is incremented.
- 5.3.5.7 After recording the ballot, the Voter Access Card is disabled
- 5.3.5.8 Whenever the system is in use the audit log is activated
- 5.3.5.9 Upon completion of all audit checks the next voter is allowed to proceed with making selections and casting his/her ballot

5.3.5.10 Provisional (challenge) voter ballots are identical in form as official electronic ballots

5.3.5.11 Provisional voter ballots are to be used at all elections by voters who claim to be registered but whose right to vote cannot be immediately established. In this case, the election official uses the Voter Card Encoder to designate the provisional (challenge) voter and load the applicable ballot, and the results will then be automatically isolated by the system for resolution after the election.

### 5.3 Closing of the Polls

#### **The Following Procedures must be completed in Public View**

5.4.1 Promptly at 8 p.m. declare, "The polls are closed"

5.4.2 Any voter in line at the time of closing must be allowed to vote

5.4.3 No voter who arrives after 8 p.m. may vote

5.4.4 At the "Open Poll" screen, insert the Supervisor card.

5.4.5 At the administration screen, enter the assigned Personal Identification Number to enter the admin screen, then press "OK." End the election when prompted.

5.4.6 At the prompt, press "Print Results" report

5.4.7 When the report finishes printing, press "Done Reporting."

5.4.8 At the prompt, use the key to open the side cover (remove transport media if election is ending) and turn the power off.

5.4.9 Seal PC card in envelope for transport.

5.4.10 Count to make sure there is a PC card for each Ballot Station.

5.4.11 Collect absent voter ballots, if any.

5.4.12 Complete the "Certificate of Roster" showing:

- (1) The names of persons who, after signing the Roster, were assigned provisional voter status or who failed to vote after signing in because of some other reason
- (2) The number of persons who voted; and
- (3) Signatures of all Board Members.

### 5.5 Packaging for Return

5.5.1 Seal Roster-Index, precinct index, purged voter index, and write-in tally sheets (from paper absentee ballots), if any, as directed.

5.5.1 Package or seal all other supplies, as directed.

5.5.2 Unplug the AccuVote-TS and close the booth.

- 5.5.3 Complete a Certificate of Packaging and Sealing which verifies that the numbers of voters on the AccuVote-TS(s), absent voter ballots, and provisional voter ballots have been correctly entered on the Certificate of Packaging and Sealing.
- 5.5.4 Verify that the required materials have been placed into the appropriate container or containers, listing the materials inserted in each container and indicating that the container or containers were appropriately sealed.
- 5.5.5 After all entries have been completed, each member of the board shall sign the Certificate.
- 5.5.6 After the polls close, the original Certificate shall be mailed to the elections official by a member of the precinct board other than the members who return the ballot container. A self-addressed stamped envelope has been provided for this specific purpose. The copy shall accompany the ballot container to the central counting location.
- 5.5.7 Return all transport media, paper ballots and supplies as directed by the elections official. At least two precinct board members must accompany all media results and paper ballots until they are in the custody of the elections official and a properly-executed receipt has been provided.

**Do not release transport media and supplies to any other person without first obtaining a receipt**

## **6. Tabulating totals in counting center**

- 6.1 To set ballot scanning options:
  - 6.1.1 Select "Options" from the drop-down menu. The "Ballot Scanning Options" dialog box appears.
  - 6.1.2 The "Scan Mode" tab appears automatically when the dialog box opens. It provides you with two options: "Normal ballot Scanning" and "Check for Unscanned Ballots."
  - 6.1.3 The "Normal Ballot Scanning" option automatically scans all ballots, and the system counts all votes
- 6.2 Transferring Election Data from AccuVote-TS
  - 6.2.1 Select AV server from the drop-down menu in GEMS. Start ports
  - 6.2.2 Print an Election Summary Zero Report prior to transferring any results
  - 6.2.3 Load TS PCMCIA cards in a TS unit networked to the GEMS server and transfer results
  - 6.2.4 GEMS is the processing and reporting point for all vote totals, whether they come from the ballot station itself or from the scanning system.
- 6.3 Tabulation of write in votes, when appropriate, as follows:

- 6.3.1 GEMS will indicate the number of votes cast for each write in position, for each contest. GEMS has TS write-in reports that will also contain the actual write-in candidate's name cast by the voter as recorded on the TS units.
- 6.3.2 The local officials will tally and record the write-in votes cast for write-in candidates from this report. In tallying write-in votes in a contest designated as a "Vote for Two" or more, the election official may encounter a name written in that is the name of a ballot qualified candidate. In this instance, the election official shall check the ballot image report to determine whether the ballot qualified name written in is also marked on the list of candidates. If the voter has marked the name on the regular ballot and written it in, the election official shall ensure that the vote is tabulated one time only. If the name is written in only and is not marked on the candidate list, the election official may determine the voter's intent to select the candidate.
- 6.3.3 The reporting of write-in votes as part of the official returns shall be required by law or by directive of the Secretary of State, or both.
- 6.3.4 Combine the totals from the paper ballots, polling places and walk-in absentee ballots.
- 6.3.5 Security of the premises includes the definition by the local election official as to who shall be admitted to the premises while tabulation is taking place. The election official shall ensure the protection of the election tabulation process from intentional and/or fraudulent manipulation, malicious mischief, accidents and errors by securing the premises where the vote tabulation is being conducted.
- 6.3.6 Certification of unescorted personnel. All unescorted persons present within the security area, including visitors, media representatives and stand-by personnel, shall be clearly identified by a badge or other means and a log of their arrival and departure times. All unescorted personnel shall be subject to restrictions established by the responsible elections official to ensure the efficiency and integrity of the vote tallying process.
- 6.4 Security of Materials following Tabulation

Following tabulation, all printed results and a back-up version of the ballot tabulation shall be organized and stored. The local election official shall provide for retention and storage of these items and of any other data processing materials related to the vote counting in accordance with statutory retention requirements. After tabulation, printed results tapes and a back-up copy of the tabulation shall be placed in locked storage in a secure location, and shall remain there until the expiration of the period for challenging elections and for as long as required by law, unless a court orders their release.
- 6.5 System Security

The local election official has management control over all resources employed during the voting and tallying process until the control is voluntarily relinquished when no longer needed. If it becomes necessary to transport the ballot stations back to the vendors or technicians for repair, operational election activity may not be carried out on the equipment while it is under the vendor's control.

## **7. Official Canvass and Post-Election Procedures**

### **7.1 Purpose of the official canvass**

The official canvass consists of a post-election audit of the polling place returns and the absent voters returns and serves to;

- Validate the outcome of the election by verifying that there were not more ballots cast than the sum of the numbers of voters who signed the precinct Roster/Index and who applied for and were issued absent voter ballots;
- Ensure that all required certificates and oaths were properly executed by the precinct board; and,
- Verify the accuracy of the computer count by manually recounting the voter ballots from at least one percent of the voting precincts and comparing the manually-tallied results to the computer-generated results,
- Each official canvass function must be performed by a minimum of three persons.

### **7.2 Process provisional ballots**

#### **7.2.1 Verify eligibility of provisional ballots**

#### **7.2.2 Process in the manner prescribed for Ballot Inspection Boards**

#### **7.2.3 Identify original or duplicate provisional ballots by precinct and deliver to the designated official for updating computer tallies**

### **7.3 Reconcile Tallies**

#### **7.3.1 Compare the number of voters on precinct report to the number in the Roster-Index issued by the elections official. Resolve or explain any discrepancy.**

#### **7.3.2 Verify that the number of ballots voted (including provisional), plus absentee mail-in ballots equal the number of ballots received by the precinct. Resolve or explain any discrepancy.**

#### **7.3.3 Reconcile Absent Voter Ballots**

#### **7.3.4 The elections official is accountable for absent voter ballots to the same extent, as nearly as practicable, as for precinct ballots.**

#### **7.3.5 Process any outstanding absentee ballots not counted in the semi-official canvass.**

#### **7.3.6 Canvassing Write-ins**

#### **7.3.7 Examine the write-in candidates on the mail absentee ballot and the write-in candidates from the write-in report generated from the AccuVote-TS to verify that the names written in are for valid candidates.**

#### **7.3.8 Prepare "Statement of Write-In Votes" for inclusion in the official "Certified Statement of Election Results."**

#### 7.4 Automatic Manual Recount in One Percent of the Precincts

- 7.4.1 For the purpose of validating the accuracy of the computer count, within fifteen days after every election at which the AccuVote-TS system is used, a public manual tally of the ballots cast in at least one percent of the precincts, chosen at random, shall be conducted as to all candidates and ballot measures voted on in each of the precincts. If the random selection of precincts results in an office or ballot measure not being manually recounted, as many additional precincts as necessary shall be selected and manually recounted to cover any office or ballot measure not recounted in the original sample.
- 7.4.2 Precincts selected at random pursuant to Elections Code section 15645 shall not be chosen by an individual who is designated by the responsible elections official and who is not the same person responsible for programming the electronic ballot. Selected precinct numbers shall not be revealed to the persons responsible for programming the electronic ballot until the semi-official canvass is complete. For the one percent manual tally, ballots shall be printed out and tabulated by hand.
- 7.4.3 If a discrepancy is discovered between the automated tally and the automatic manual recount tally, the votes will be tabulated again.

#### 7.5 Retention of Election Materials

- 7.5.1 Upon certification of the election results, Elections Code sections 17300 through 17306 and 15307 apply to the handling security and disposition of unused materials. The retention of electronic ballots and related election materials is six months for local elections and twenty-two months for federal elections. Retention periods may be extended in the event of a court challenge.

#### 7.6 Adherence to Established Procedures

All operations associated with the official canvass and post-election procedures shall be performed in accordance with applicable control and security provisions.

No operation or activity which results in a revision to voting data produced by the semi-official canvass shall be performed without the presence of a properly constituted Election Observer Panel, Logic and Accuracy Board, or an equivalent administrative and technical control body authorized to verify the correctness of the operations and to be responsible for maintaining accurate and complete audit records.

#### 7.7 Manual Recount Procedures

##### 7.7.1 Request for Recount

A request for a recount and the conduct of the recount shall be made in accordance with the provisions of the Elections Code at section 15600 and following.

#### 7.8 Observer Panel

Each candidate and each side in the case of a ballot measure shall be allowed not more than two observers for each recount board, and may not touch or handle the transport media. All questions relating to the recount must be directed to the elections official in charge of the recount.

## 7.9 Hours of Operation

Prior to the beginning of the recount, all parties will be notified of the hours of operation.

## 7.10 Ballot Supervision

At least two people will attend ballots at all times during the recount, including breaks and lunch periods.

Recount boards will be permitted break periods in the morning and afternoon, in addition to a lunch break. They will not stop for a break or for lunch while in the process of recounting a precinct.

# 8. Election Security Provisions

## 8.1 Ballot Counting System Security

The election official shall ensure the protection of the election tally process from intentional and/or fraudulent manipulation, malicious mischief, accidents and errors.

Within one year following the adoption of these procedures, each jurisdiction shall:

- 8.2 Establish procedures to identify changes to the ballot logic system, including dates and times that files are created, modified, or accessed, and by whom. These procedures must also include a checklist and sign-off requirement for the system proofing tasks.
- 8.3 Establish procedures for the physical protection of facilities, and data and communications access control; including intrusion and fire alarms, temperature and humidity sensors, etc. The procedures shall also include provisions for locked facilities for computers that house the Voter Card Encoders, AccuVote-TS and GEMS software.
- 8.4 Establish contingency plans for tabulation, including either backup tabulation facilities under the elections official's supervision.
- 8.5 In addition to the ballot counting program sent to the Secretary of State pursuant to Elections Code section 17500, each elections official shall store another copy of the ballot tabulation software in an off-site secure, but readily accessible location.
- 8.6 Establish procedures for internal security, including the protection of the AccuVote-TS and tabulation software from fraudulent manipulation by persons within the elections office.

These procedures must provide for:

- Restricted access to AccuVote-TS and tabulation software
- Individual passwords which must be complex and frequently changed
- A complete copy of each elections official's security procedures shall be submitted to the Secretary of State for review and approval by February 1 of each even-numbered year. In lieu of the annual submission of this plan, the elections official may affirm that no change has been made to previously approved procedures, or may submit updates to the procedures on a continuing basis.

# 9. Audit Trails

All ballot tabulation operations, including mandated pre-and post-election testing, must be documented in sequential order. An automated and/or manual record or log must be maintained to record the time and date of “system events” related to ballot counting.

9.1 System events in the ballot tabulation process include:

- Initiation of the ballot count program
- Clearing totals
- Running logic and accuracy tests
- Hardware Failures
- Repairing hardware (including running accuracy tests after repairs are completed)
- System crashes and restarts
- Communications between multiple systems
- Lost communication to remote sites
- Time communication is restarted

9.2 This log or record shall be continued until final certification of results, shall be retained for this same time period as ballots for that election, and shall be subject to the same physical security and integrity measures.

9.3 Specific audit trails shall include:

9.3.1 Exception Handling/Error Messages During Ballot Tabulation, including:

- Messages generated by the computer’s error routines;
- Identification code and number of hardware and software failures (their source and disposition);
- Recording of the operating system’s data read/write/verify, parity or check sum errors in retries.

9.3.2 System status messages, such as:

- Diagnostic and status messages upon start-up of ballot tabulation
- Starting Audit File
- Zero Totals Check
- Polling Place Open and Close
- Administrator interaction with system
- Operator (voter) interaction with system
- Counter totals at closing of poll
- Election end and archival
- Exceptions i.e., cancelled ballot, aborted ballot, etc.



- The number of ballots read within each precinct by type, including totals for each party in primary election
- The total number of ballots processed
- Separate accumulations and reporting of the quantity of overvotes (not applicable to the AccuVote-TS), under-votes and write-ins within each precinct for each race or measure.
- Availability of the above information in summary and by precinct.

## **10. Certification and Reporting Requirements**

### **10.1 Biennial Certification of Hardware**

Elections Code section 19220 requires elections officials to inspect and certify the accuracy of their voting equipment at least once every two years. The elections official shall certify the results of this inspection to the Secretary of State

### **10.2 Hardware Certification and Notification**

### **10.3 Certification**

All vote tabulating equipment must be certified for use in elections by the Secretary of State prior to use in any election

Certification Procedures are available upon request from the Secretary of State's Elections Division

### **10.4 Notification**

For each statewide election, the responsible county official shall cause to be prepared a list, including quantities, of all equipment to be used to tabulate votes during the semi-official and official canvass.

10.4.1 Seven days before each statewide election, the elections official shall certify to the Secretary of State the results of the logic tests as well as the accurate functioning of all ballot counting equipment. This certification shall also affirm the use of the same equipment for pre-election testing and for semi-official and official vote canvass. In the event of a change to the ballot tabulation program occurring after this certification, an amended certificate shall be submitted no later than the day before the election.

10.4.2 In the event any equipment is repaired, altered or replaced following the certification specified, and prior to completion of the official canvass of the vote, an amended certification of logic and accuracy testing and a revised list of equipment used must be submitted to the Secretary of State not later than submission of the official canvass results.

### **10.5 Election Observer Panel**

All procedures prescribed in this Manual shall be carried out in full view of the public insofar as feasible. In addition, the responsible elections official shall devise a plan, subject to the approval of the Secretary of State, whereby all critical procedures of the vote tabulation process described in this Manual are open to observation by an Election Observer Panel. Representatives of the qualified

political parties and representatives of the news media shall be among those invited to serve on this Panel and shall be given the opportunity to observe that the correct procedures have been followed in the receiving, processing and tabulation of the voted electronic ballots.

#### 10.6 Logic and Accuracy Certification

- 10.6.1 A Logic and Accuracy Board shall be appointed by the responsible elections official and, insofar as is practicable, shall be comprised of the same persons prior to, during, and after the election. The board shall have the following duties:
- 10.6.2 Receive from the elections official all required test materials and take steps to ensure the security of said materials prior to, during, and after the election, except when the materials are properly in the possession of one of the other boards of elections officials as required by these procedures.
- 10.6.3 Verify the correctness of the logic and accuracy test program. This verification shall also be required for any of said material that must be replaced.
- 10.6.4 Observe the performance and verify results of all required tests.
- 10.6.5 Note any discrepancies and problems and affirm their resolution or correction.
- 10.6.6 Deliver into the custody of the elections official all required test materials and printed output.
- 10.6.7 Certify to the performance of each of the above prescribed duties as well as those otherwise established by the procedures, provided that all members of the Board shall sign the appropriate certificate or certificates.

Final pre-election certification shall be made to the Secretary of State no less than seven days before each statewide election. The responsible election official shall make this certification based on the Logic and Accuracy Board's certification of successful testing. In the event an amendment to the ballot counting program is required following this certification, the elections official must immediately re-certify to the Secretary of State.

#### 10.7 Submit Ballot Tabulation Programs to the Secretary of State

Ballot tabulation programs for statewide elections are to be deposited with the Secretary of State no later than seven days prior to each statewide election. The elections official's certification of testing as well as the list of vote counting equipment used must accompany ballot tabulation programs. Should changes be required following certification and submission to the Secretary of State, re-submission and re-certification is required.

#### 10.8 Election Night and Post Election Reporting

Any delays in the election night's semi-official canvass reporting due to hardware, software, or environmental or human causes which result in failure to report results to the Secretary of State at least every two hours shall be reported to her or him by the 28<sup>th</sup> day following the election. The responsible elections official may also report other delays in the processing of ballots, as he or she deems appropriate.

#### 10.9 Preparation of Specific Written Procedures

Each election official shall prepare specific written procedures for each phase, step and procedure in the preparation, operation of polling places, vote counting and official canvasses of elections. Written procedures must also include instructions to precinct officials regarding proper handling of absent voter and provisional voter ballots, as well as a description of procedures used to manually recount ballots.

These procedures must be prepared and submitted to the Elections Division of the Secretary of State's Office within two years following the adoption of these procedures by the Secretary of State. Upon submission, the elections jurisdiction's procedures shall be reviewed for compliance with state procedures, and the elections official shall be advised of any necessary revisions.

#### 10.10 Posting of Results at Polling Place on Election Night

As soon as possible after the close of polls, election workers shall post in a conspicuous place at each polling location an unofficial summary report of the results for the polling place.

### 11. Election Security Plan

#### 11.1 Security of GEMS server

- 11.1.1 Election Officials shall maintain the GEMS Server is in a controlled, preferably locked area with access limited to authorized staff.
- 11.1.2 Election Officials shall verify and submit a statement to the Secretary of State that no DAO capable program has been installed or resides on GEMS server. DAO programs include but are not limited to MS EXCEL, MS ACCESS, and other Visual Basic programs designed to work with Direct Access Objects.
- 11.1.3 The GEMS server shall be set to require user login. Administrative user logins should be limited to only those times user accounts need to be set or changed or software needs to be installed or updated. For routine use, a lesser user account should be used. (An administrative user should also be issued an additional, separate user account for routine use if their duties require routine election use).
- 11.1.4 A minimum of two people in the county election office shall have administrative access to the server supporting GEMS (the ability to set or change passwords). Additional user accounts may be assigned at less than administrative access but all users shall have and use separate user account with unique usernames and passwords. The administrative users' passwords shall meet or exceed Microsoft Windows password guidelines for a strong password. Lesser user accounts should be at least as strong as the GEMS passwords. The second administrative user may be setup and the username/password stored in a sealed envelope placed in a safe as part of a disaster recovery plan but should not be used for routine use
- 11.1.5 The GEMS server should not be connected to any network that has an external Internet connection. All network connections shall be local.

- 11.1.6 The GEMS server computer and communications systems must be used for election purposes only.
- 11.1.7 Workers must not install third-party software in the GEMS server system that is not previously approved for use by authorized personnel. This prohibition is necessary because such software may contain viruses, worms, Trojan horses, and other software that may damage GEMS information and systems.
- 11.1.8 Whenever software and/or files are received from any external entity, this material must be tested for unauthorized software on a stand-alone, non-production machine before it is used on the GEMS server system. If a virus, worm, or Trojan horse is present, the damage will be restricted to the involved machine.
- 11.1.9 Approved virus checking programs must be continuously enabled on computers supporting the GEMS server system.
- 11.1.10 Externally supplied floppy disks, CDs or DVD's may not be used on any GEMS server unless these disks have first been checked for viruses and deemed to be free of such viruses.
- 11.1.11 If modem transmission is to be used to upload unofficial vote center results, the modems attached to the GEMS server should only be enabled when the transmission of unofficial results are expected. Before the transmission of results by modem, a back up of the GEMS election database shall be made and the back up stored in a protected location. Before loading official results, the back up shall be restored and used for the official results.
- 11.1.12 If unofficial summary results from the GEMS server are to be distributed or published, the information should be exported from GEMS to a file on the server and then copied to a virus-free floppy disk. That floppy disk can then be taken to a separate computer system that has external connections to the Internet. A separate blank floppy disk should be used each time the information is copied to the floppy disk.
- 11.1.13 Back-ups of GEMS databases should be performed using CD-ROMs. Users must ensure that the back-up is labeled with the time and date of the back-up and signed by the person who authorized the back-up.
- 11.1.14 No voting terminal will have wireless technology installed or have any ability to allow the transmission of vote results through wireless technology without state certification and customer request.
- 11.1.15 An anti-virus program shall be installed. The virus program shall be updated and a virus scan run immediately prior to each election.
- 11.1.16 The boot option shall be set to hard drive only with the BIOS secured by a password. The password shall follow the manufactures recommendations for a secure password.
- 11.2 GEMS Passwords
  - 11.2.1 A minimum of two people in the county election office shall have usernames and passwords with administrative access to the GEMS election database. (These may be different than the server administrators and are specific to the election.) The GEMS passwords must be at least 6 to 8 digits and include a combination of alpha and numeric characters.

- 11.2.2 Passwords shall be changed before each election. Each user should immediately change the password if the password is suspected of being disclosed, or is known to have been disclosed, to an unauthorized party.
- 11.2.3 Users are responsible for all activities performed with their personal login-IDs. Login-IDs may not be utilized by anyone but the individuals to whom they have been issued. Users must not allow others to perform any activity with their login-IDs.
- 11.2.4 The GEMS server, workstation, or terminal must not be left unattended without first logging-out or invoking a password-protected screen saver.
- 11.3 Security of AccuVote-TS units
  - 11.3.1 All AccuVote-TS units shall be upgraded to use software that requires SSL/TLS standards and be documented as such. The SSL/TLS option shall always be activated.
  - 11.3.2 New encryption keys using the Key card tool shall be created and used for Smart Cards and AccuVote-TS units for each election; these will be stored in a secure location with limited access by county election staff.
  - 11.3.3 No PIN shall use only the digits "0" and "1".
  - 11.3.4 Supervisor card PINS shall be changed for each election and stored in a secure location.
  - 11.3.5 AccuVote-TS pins shall be changed for each election and stored in a secure location.
  - 11.3.6 Tamper-proof seals should be installed on key locks of access panels of the AccuVote-TS units and initialed so any incidence of disturbance shall be immediately obvious and rectified. Logs shall be kept to record the date, time and identification number of all seals and all incidences.
    - 11.3.6.1 Tamper-proof seals shall be placed over the memory card door after the memory card installation is complete in the same manner as the key locks above.
    - 11.3.6.2 Tamper-proof seals shall be placed over the communication media door in the same manner as the key locks above.
  - 11.3.7 The PS/2 Keyboard is not approved for use at any time. Tamper-proof seals shall be placed over the PS/2 keyboard port in the same manner as the key locks above.

#### 11.4 Storage at Election Warehouse

If the memory media is to be installed in the voting terminals prior to distribution to the vote centers, the voting terminals should be kept in a secure location after the memory media installation. The location should restrict access to only authorized personnel. Logs shall be kept to track the memory installation and access after the memory is installed.

#### 11.5 Storage at Vote Center

After distribution of the voting terminals to the vote centers, the voting terminals should be kept in a

secure location at the vote centers. The location should restrict access to only authorized personnel. If possible, tamper-evident seals should be placed on entries into the secure location.



### Election Test Schedule and Requirements

<u>Test</u>	<u>Days Before or After the Election</u>	<u>Time Period</u>	<u>Ballot Types Used</u>	<u>Cards or Magnetic Tapes</u>	<u>Vote Count Program</u>
System Proofing	E -40 - E -10	Prior to E -7 Certification	All	Ballot cards or Magnetic tape	Yes
Exception	E -40 - E -10	Prior to E -7 Certification	All	Ballot cards	Yes
Election-Specific	E -40 - E -10	Prior to E -7 Certification	All	Ballot cards	Yes
Logic	E -40 - E -10	Prior to E -7 Certification	All	Ballot cards or Magnetic tape	Yes
Accuracy	E -40 - E -10	Prior to E -7 Certification	N/A	Reusable cards	No
Logic	E -10	For E -7 Certification	All	Ballot cards	Yes
Accuracy	E -10	For E -7 Certification	N/A	Reusable cards	No
Logic	E	Immediately before and after counting any ballots	Recommend all; permit sampling to include all candidates and measures	Ballot cards or Magnetic tape	Yes
Accuracy	Prior to E +28	For official canvass	N/A	Reusable cards	No
Logic	Prior to E +28	For official canvass	N/A	Ballot cards or Magnetic tape	Yes

