tabulated. Tabulation requires using the eCM token with password access to confirm the security signing key. File and secure the Zero Cumulative Report with official election records.

4.3.4 Ballot Now Diagnostic Test

A new Ballot Now database is created for each election by using an election-specific MBB and the eCM token with password access to confirm the security signing key. The Ballot Now system is operated in a secure environment with access limited to authorized personnel. At no time shall only one person have sole custody of the paper ballots or Ballot Now computer(s). Before ballot processing begins, an Election Report is printed, reviewed and verified to serve as a zero report. The report is stored in a sealed envelope and secured.

4.4 System Proofing

Proofing of ballots is performed by comparing information generated from BOSS reports with original source documents.

- Generate BOSS reports and compare the data to the information gathered and organized prior to data entry.

  - Active Contests Options List Report

  - Ballot Content Proof Report

  - Ballot Style List by Precinct Report

  - Ballot Style List by District Report

  - Contest List With Details Report

  - Assigned Precinct Report

  - Polling Place List - Early Voting - Detail Report

  - Polling Place List - Early Voting - Summary Report

  - Polling Place List - Election Day Voting - Detail Report

  - Polling Place List - Election Day Voting - Summary Report

  - Precinct List Report

- Ensure that all Contests are on the ballot.

- Ensure that all Options and Proposition Titles/Texts are spelled correctly.

- Verify the correct number of valid choices for each contest has been defined.

- Verify the correct number of write-in options has been specified for each applicable contest.

If election definition and programming is done by Hart InterCivic or a third-party vendor, the vendor will provide sample PDF files of the ballot to the jurisdiction in a zipped and password protected file format via read-only CD or secure FTP so elections officials can proofread the text and layout.

If ballot printing is done by Hart InterCivic or a third-party vendor, elections officials proof a copy of each ballot format/style. A test of scanning paper ballots can be done using Ballot Now and/or an eScan. Test mode MBBs from the election will be required for the Ballot Now test and the eScan test.

4.5 Logic and Accuracy Testing of System and Components

All testing is to be conducted in a secure location with access limited to authorized personnel.

4.5.1 Pre-Conditions for Performance of Tests

The operation of the eSlate System devices (JBCs and eSlate voting units) and eScan devices must be verified prior to deploying the equipment to the polling location. Each piece of equipment must have power applied to verify that it reaches the ready state in the power up cycle. This indicates that the equipment is functioning properly and has passed the resident power-up diagnostics.

- The JBC prints out a report indicating that it, and all connected eSlates, have passed diagnostics and identifies each device by serial number.

- The eScan prints out a report indicating that it has passed diagnostics and the report identifies the device by serial number.

- These reports are retained as part of the election record.

4.5.2 Accuracy Test Procedures

The election-specific accuracy test is an essential method of testing electronic ballots to be used in a particular election to ensure the eSlate System and eScan System devices perform properly. The purpose of this test is to ensure the ballot used with a particular election will function properly when run with the ballot tabulation software for that election.

All ballot logic and accuracy functions of the Hart VS are static. This means that the functions are compiled, tested and verified as part of extensive system testing and certification processes and do not change between elections. The only element of the system that changes from one election to the next is the content and format of the ballots.

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

Instructions for performing the system accuracy test and the embedded eScan accuracy test are described in the chapter entitled *Logic and Accuracy Testing Procedures*, in the *Hart InterCivic Tally Training Manual 6300-005 62A*. Additional information concerning the Ballot Now accuracy test is described in the section entitled *Elections Office Preparation - Sample Ballots and Logic and Accuracy Test* in the *Ballot Now Training Manual 6300-003 62A*.

Per California Election Code §15000, no later than seven days before Election Day, the local election official shall have the entire system tested to verify that it will properly count the votes cast for all offices and all questions or measures. 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.

The responsible elections official shall require the accuracy test deck to be prepared and tested. Predetermined results of the accuracy test must be available for inspection and sign-off by the Logic and Accuracy Board.

The pre-election Ballot Inspection and Verification (BIV) for the eSlate System and eScan System ensures that the Electronic Ballot Data provides properly formatted ballots.

4.5.2.1 Ballot Inspection and Verification (BIV) for the eSlate System

This process verifies that the ballot(s) will be correctly presented to the voter for a given revision of the Electronic Ballot Data and that the VBO printout matches the ballot summary screen. Formatting errors or changes require that the information be updated in BOSS. After updating information in BOSS, new ballots must be generated and the verification process is repeated.

The JBC Tally Report can be used to verify the number of votes for each option matches the master tally spreadsheet containing the expected number of votes for each option per ballot style.

4.5.2.1.1 BIV requirements for the eSlate System

- ◆　1 Test mode MBB containing the Electronic Ballot Data file
- ◆　1 Audio card containing the recordings for the ballot texts
- ◆　1 JBC that has been programmed with the security signing key for the new election after verifying previous election data was backed up and properly archived
- ◆　1 DAU eSlate that has been reset in a separate action using SERVO after previous election data was backed up and properly archived
- ◆　1 pair of headphones
- ◆　1 set of tactile input switches
- ◆　1 VBO
- ◆　The Ballot Content Proof Report printed from BOSS
- ◆　A spreadsheet that tallies the expected total number of votes for each contest option when the option is voted on one ballot from each ballot style

Use the following steps to perform the BIV for ballots presented on the eSlate System.

1. Connect the VBO, the headphones, and the tactile input switches to the DAU eSlate.

2. Connect the JBC to the DAU eSlate.

3. Power-up the VBO.

4. Insert the test MBB in the JBC.

5. Power-up the JBC, print a zero report and open the polls.

6. Using the Ballot Content Proof Report from BOSS, select a representative precinct for the first ballot style and print an Access Code.

7. Put on the headphones.

8. Enter the Access Code into the eSlate and display the ballot. If multiple languages are required, select the language to be verified.

9. Review the text on the ballot and verify the following on each page of the ballot:

- ◆　The text on the ballot is displayed properly
- ◆　The correct audio plays for each text area.
- ◆　The position of contests relative to pages and columns is accurate.
- ◆　The required contests are present.
- ◆　The tactile input switches work for navigation and selection.

10. Go to the ballot summary screen and verify the following:

- ◆　Move to the first contest on the ballot summary screen and verify the formatting of the contest name.
- ◆　Press ENTER on that contest and verify that the highlight bar returns to the contest on the ballot page.
- ◆　Select an option in the contest and verify that the highlight bar returns to the summary screen, then verify the formatting of the option on the summary screen.
- ◆　Repeat for each option in the contest. For contests with write-in options, enter three alpha characters, sequencing through the alphabet for subsequent contests.

11. Repeat Step 10 for each contest.

12. Cast the ballot.

- ◆　Press the CAST BALLOT button.
- ◆　Verify that each VBO printout matches the ballot summary screen.
- ◆　Cast the ballot.

13. Repeat steps 6 through 12 for each ballot style.

14. Close the polls.

15. Remove the MBB from the JBC and read into a Tally test database for tabulation.

16. Print the Tally Precinct Report and verify the number of votes for each option matches the spreadsheet that tallies the expected total number of votes for each contest option when the option is voted on one ballot from each ballot style. File the reports in a secure envelope provided for test materials.

17. Remove the MBB from Tally, label it and retain as part of the Election record. File the reports in a secure envelope provided for test materials.

4.5.2.2 Ballot Inspection and Verification (BIV) for the eScan System

This process verifies that paper ballots are printed correctly and scan correctly in the eScan for a given revision of the Electronic Ballot Data. Formatting errors or changes require that the information be updated in BOSS. After updating information in BOSS, new ballots must be generated and the verification process is repeated

4.5.2.2.1 BIV requirements for **the eScan System**

- ◆ 2 Test mode MBBs containing the Electronic Ballot Data file (one for the eScan and one for Ballot Now)
- ◆ 1 eScan that has been programmed with the security signing key for the new election after verifying previous election data was backed up and archived
- ◆ The Ballot Content Proof Report printed from BOSS
- ◆ A spreadsheet that tallies the expected total number of votes for each contest option when the option is voted on one ballot from each ballot style

Use the following steps to perform the BIV for ballots scanned into eScan System:

1. Print representative ballot styles from Ballot Now.

2. Review the text on the ballot and verify the following for each ballot style:
- ◆ The text on the ballot is laid out properly
- ◆ The position of contests relative to pages and columns is accurate.
- ◆ The required contests are present.

3. After verifying each of the ballot pages for each ballot style, mark the ballots to vote them according to the spreadsheet.

4. Insert the MBB in the eScan.

5. Power-up the eScan, print a zero report and open the polls.

6. Scan the ballots in the eScan.

7. Repeat the process for each language as required.

8. Close the polls.

9. Remove the MBB from the eScan and read into a Tally test database for tabulation.

10. Print the Tally Cumulative Report and verify that the number of votes for each option matches the spreadsheet that tallies the expected total number of votes for each contest option when the option is voted on one ballot from each ballot style. File the reports in a secure envelope provided for test materials.

11. Remove the MBB from Tally, label it and retain as part of the Election record. File the reports in a secure envelope provided for test materials.

4.5.3 Logic Test Procedures

Ballot logic is verified by the jurisdiction using its Ballot Inspection and Verification process.

Instructions for performing the logic and accuracy testing for the eSlates and eScans are described in the chapter entitled *Logic and Accuracy Testing Procedures* of the *Hart InterCivic Tally Training Manual 6300-005 62A*.

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 and an errorless count shall be made before the system is approved for use of counting votes. See Section 8.1 Parallel Monitoring Test for additional information.

4.5.4 Retention of Test Materials

The report of accumulated results from all devices used in the logic and accuracy tests and paper ballots scanned by Ballot Now are contained in the Tally application Cumulative report. The JBC and eScan device Tally reports are printed from the devices used in the logic and accuracy tests.

Copies of the Cast Vote Records and the accumulated results from the logic and accuracy tests shall be secured in locations with restricted access as designated by the jurisdiction:

• For the retention period as required by law

• By order of a court or directive of the Secretary of State

4.5.5 Logic and Accuracy Board and Certification of Testing

Equipment accuracy tests shall be performed prior to the official Logic and Accuracy Certification to the Secretary of State and prior to Election Day. In the event that hardware fails and is subsequently repaired, replaced or adjusted, the accuracy test should be performed again.

The election observer panel should witness the testing as described in Section 4.7.

4.6 Ballot Tally Programs

California Election Code §15001 requires each jurisdiction to submit a copy of its vote tally program to the Secretary of State at least 7 days prior to each election. If there is a subsequent change in the program, an updated copy must be submitted to the Secretary of State by 12 PM on the day of the election.

The Hart Voting System "vote count program" (as used in California Election Code §15001) consists of the Hart software applications and equipment firmware for the jurisdiction's current Hart Voting System at the time of the election. By agreement with the State of California, this software and firmware code is placed in escrow upon system certification, and is therefore accessible by the Secretary of State if required. No jurisdiction procedure is therefore required for a given election.

4.7 Election Observer Panel Plan

California Election Code §15004 sets forth minimal requirements for observation of the programming and testing of the voting system for each election. Each jurisdiction may allow additional procedures in accordance with its official election observer panel plan. All logic and accuracy testing must be performed in accordance with these requirements for observation. Any jurisdiction using this voting system shall, prior to such use in each election, file with the California Secretary of State a copy of its Election Observer Panel plan.

Note: Elections officials must develop appropriate security procedures for use when representatives of qualified political parties and bona fide associations of citizens and media associations, pursuant to their rights under Elections Code §15004, check and review the preparation and operation of vote tabulating devices and attend any or all phases of the election. The security procedures must permit representatives to observe at a legible distance the contents of the display on the vote tabulating computer or device. This requirement may be satisfied by positioning an additional display monitor or monitors in a manner that allows the representatives to read the contents displayed on the vote tabulating computer or device while also observing the vote tabulating computer or device and any person or persons operating the vote tabulating computer or device.

8.10.2 Overvotes

Overvoting is not possible on the eSlate, as the DRE will not permit a voter to mark more than the number of valid choices for a given contest.

The eScans must be set in BOSS to initially reject ballots containing overvotes. In such instances, eScan will present a message to the voter advising him/her of the overvote(s). The voter may choose to either (a) cast the ballot as voted, or (b) remove the ballot and receive a new blank ballot from the poll worker to vote. In the latter case, the poll workers must spoil the original incorrect ballot and supply the voter with a new blank ballot, in accordance with California Election Code §14288 and §14290.

If the eScan is programmed in BOSS so that poll worker assistance is required to cast an overvoted ballot, the poll worker must inform the voter of the overvote, explain the consequences of casting an overvoted ballot and explain the voter's options to cast the ballot as voted or to spoil the overvoted ballot, vote a new ballot and rescan the new ballot. The poll worker shall then take appropriate action to cast or spoil the ballot based on the voter's preference.

In Ballot Now, during review of scanned ballots, all overvoted contests shall be accepted and resolved as overvotes, unless a valid voter choice can be determined based on voter intent in accordance with the prevailing Uniform Vote Counting Standards established by the Secretary of State.

8.10.3 Torn and Damaged Ballots

Ballots that are torn or otherwise damaged so that they cannot be read by either Ballot Now or the eScan shall be replaced with ballots that have been marked by authorized election officials to duplicate the voter's choices, in accordance with California Election Code §15210.

8.10.4 Audit Discrepancies

Apply the procedures in Sections 8.7 and 8.8 above that address discrepancies encountered during the 1% Manual Recount and any recount involving the VBO audit trail.

8.11 Post Election Logic and Accuracy Testing

Instructions for performing the logic and accuracy testing for the eSlates and eScans are described in the *Hart InterCivic Tally Training Manual 6300-005 62A*.

Due to the ballot imaging technology employed in the eScan and Ballot Now, a traditional post election logic and accuracy test is not required. Nor is one required for the eSlate/JBCs, since all ballots cast are printed and voter-verified on the VBO paper audit trail.

8.12 Final Reporting of Official Canvass

The data for final reporting of the Official Canvass is derived from Tally. Before the data for the election is considered final in Tally:

- All MBBs for the election must have been read into Tally.

- All MBB data must have been tabulated by Tally.

- All provisional ballots must be included or excluded.

- All write-in votes must be assigned or rejected.

- The Canvass Report can then be generated to serve as the Official Canvass for the election from the Canvass Report item in the Reporting tab.

- The Canvass Report must be printed from Tally. Use the "Total" canvass type to include all Absentee, Early, and Election Day results.

11 Biennial Hardware Certification and Notification

California Election Code §19220 requires jurisdictions to examine voting systems every two years and certify the results to the Secretary of State.

By order of the Secretary of State, voting systems certified for use in California shall comply with all applicable state and federal requirements, including, but not limited to, those voting system requirements as set forth in the California Elections Code and the Help America Vote Act of 2002 and those requirements incorporated by reference in the Help America Vote Act of 2002. Further, voting systems shall also comply with all state and federal voting system guidelines, standards, regulations and requirements that derive authority from or are promulgated pursuant to and in furtherance of the California Elections Code and the Help America Vote Act of 2002 or other applicable state or federal law when appropriate.

Where circumstances require it, the Secretary of State may adjust or amend any of the conditions of recertification for a vendor or a jurisdiction, as the Secretary of State deems prudent and necessary to facilitate successful election administration. Such adjustments or suspensions shall be deemed to be incorporated herein as if set forth in full.

11.1 eSlate System Test Procedure

The eSlate System test procedure for voting system examination is a combination of portions of the eSlate System acceptance and functionality test procedures and the eSlate System logic and accuracy test procedure described in *Hart Voting System Support Procedures Training Manual 6300-006 62C*.

11.1.1 eSlate System Equipment Test

In brief, the steps for examination of JBCs, eSlates, and VBOs are as follows: Caution: Do not perform this test until after the CVRs and audit logs from the previous election have been backed up to Events in the SERVO database.

- Use SERVO and an eCM token to write an Election security signing key to the JBCs and to clear the CVRs and audit logs from the JBCs and eSlates.

- Set up an election in BOSS and write Test MBBs and Audio cards.

- Install batteries in the JBCs, eSlates, and VBOs.

- Install paper in the JBCs and VBOs.

- Install a Test MBB in each JBC.

- Set up each JBC and connect to up to 12 eSlates with VBO units installed. One eSlate should be a DAU eSlate equipped with an Audio card, headphones, and tactile input switches.

- Connect the VBO to power.

- Connect the JBC to power.

- Log the success/failure of each of the following conditions:
    - Verify that the JBC and the connected eSlates/VBOs power up and that the JBC printer and the VBO printer print the initialization/power-on reports.
    - Verify that the AC and Battery power messages on the JBC screen indicate, "OKAY".
    - Verify that the power supply messages on the eSlate screens indicate "OKAY".

- Enter the start-up password and open the polls.

11.1.2 eSlate System Logic and Accuracy Test

In brief, the steps for examination of the logic and accuracy of the eSlate System are as follows:

- Print a test deck of ballots from Ballot Now.

- Vote test deck paper ballots.
- Cast matching votes on the eSlates and monitor the accuracy of the ballot summary page printout on the VBO.
- Scan test deck paper ballots in Ballot Now and/or eScan.
- Tabulate MBBs from eScans and JBCs in Tally and verify results.
- Document the logic and accuracy tests.

11.2 eScan System Test Procedure

The Scan System test procedure for voting system examination is a combination of portions of the eScan System acceptance and functionality test procedure and the eScan System logic and accuracy test procedure described in *Hart Voting System Support Procedures Training Manual 6300-006 62C.*

11.2.1 eScan System Equipment Test

In brief, the steps for examination of eScans are as follows: Caution: Do not perform this test until after the CVRs and audit logs from the previous election have been backed up to Events in the SERVO database.

- Use SERVO and an eCM to write an Election security signing key to the eScans and to clear the CVRs and audit logs from the eScans.
- Set up an election in BOSS and write Test MBBs and Audio cards.
- Install printer paper in the eScans.
- Install a Test MBB in each eScan.
- Connect the eScan to power and turn it on.
- Log the success/failure of each of the following conditions:
    - Verify that the eScan powers up and the screen displays the power-up messages.
    - Verify that the eScan printer prints the initialization report.
- Enter the start-up password and open the polls.
- Inspect the eScan ballot box and test locking it with the key.
- Inspect the eScan emergency ballot tray inside the ballot box.

11.2.2 eScan System Logic and Accuracy Test

In brief, the steps for examination of the logic and accuracy of the eScan System are as follows:
- Print a test deck of ballots from Ballot Now.
- Vote test deck paper ballots.
- Scan test deck paper ballots.
- Log the success/failure of each of the following conditions:
    - Verify that a blank ballot from the election scans.
    - Verify that a marked ballot from the election scans.
    - Verify that an undervoted ballot from the election scans.
    - Verify that an overvoted ballot from the election scans.
- Tabulate MBBs in Tally and verify the vote results.
- Document the logic and accuracy tests.

11.3 Ballot Now Central Count System Test Procedure

The Ballot Now Central Count System test procedure for voting system examination is a combination of portions of the Ballot Now acceptance and functionality test procedure and the Ballot Now logic and accuracy test procedure described in *Elections Office Preparation - Sample Ballots and Logic and Accuracy Test* in the *Ballot Now Training Manual 6300-003 62A.*

11.3.1 Ballot Now Central Count System Equipment Test

In brief, the steps for examination of the BN Central Count System are as follows:

- Set up an election in BOSS and write Test MBBs.

- Ensure the ballot/report printer is powered up and properly attached to the BN PC.

- Install a Test MBB in Ballot Now.

- Open the election in Ballot Now in Test Mode.

- Print a test deck of ballots.

- Print an Election Report.

- Ensure the Ballot Now Central Count scanner is connected, powered up correctly, recognized by the Ballot Now PC, displays no warning or error messages and has a clear paper path.

- Scan an unmarked ballot and log the success/failure of each of the following conditions:
    - Verify that the scanner properly scans the blank test ballot.
    - Verify that the BN ballot/report printer can print a batch report.
    - Verify that the test ballot requires resolution and that all contests are presented for resolution as being undervoted.

- Delete the test batch.

11.3.2 Ballot Now Central Count System Logic and Accuracy Test

In brief, the steps for examination of the logic and accuracy of the Ballot Now Central Count System are as follows:

- Print an Election Report.

- Vote test deck paper ballots printed earlier for system equipment test.

- Scan test deck paper ballots.

- Resolve scanned ballots and log the success/failure of each of the following conditions:
    - Verify that a blank ballot from the election scans properly, all contests are presented for resolution as being undervoted and resolution of all contests is completed correctly.
    - Verify that a correctly marked ballot from the election scans and is not presented for resolution.
    - Verify that an undervoted ballot from the election scans properly, all contests are presented for resolution as being undervoted and resolution of all contests is completed correctly.
    - Verify that an overvoted ballot from the election scans properly, all contests are presented for resolution as being overvoted and resolution of all contests is completed correctly.

- Write cast vote records to the MBB.

- Tabulate MBB in Tally and verify the vote results.

- Print an Election Report and verify all data.

- Document the logic and accuracy tests.