

County of San Diego

Logic & Accuracy Testing

Testing procedures for with Gems 18.19.24 using AccuVote TSx and Central Count Hardware connected to the Gems Server via a DigiPort switch. The following procedures are ordered as by the availability of testing materials.

PREPARATION FOR SELECTING LA5 DECKS. (The precincts selected in the next step will be used for LA5 testing in subsequent testing)

After the Gems System proofing has been completed (this is performed by the Campaign services section) the following tasks need to be performed in order to obtain the proper pre-marked test decks from the vendor.

1. Using DimsNet election structure you need to find all the unique ballot types that cover all races and measure in the election.
2. After you have identified these you need to select the first precinct starting with the polling place precincts that are assigned that ballot type. It should be noted that in some elections the first precinct for a ballot type might be a declared AV precinct (Starts with 999XXX)
3. After identifying the precincts, order LA5 decks for each of the polling place precincts and all Declared AV precincts.
4. Order a First Oval Deck for all polling place and declared AV precincts.
5. Order a QC (over-voted and blank ballot) for all polling place and declared AV precincts.
6. Order 50 blank ballots for all precincts identified in Step #2.

QUICK CHECK PROOFING TEST:

This test allows you to get a quick check of the ballots cast by using a TSx unit with an early voting memory card. This test is run two different ways, without rotation and with rotation.

1. Create two early voting cards using a backup copy of the Gems database for the election.
2. Insert the of the cards into TSx units that have successfully complete Phase 1 testing and are loaded with the correct encryption key for the election.
 - a. On both of the TSx units, select “Logic and Accuracy” button.
 - b. Select “Automated” from Test Mode
 - c. Select “Full Test by Precinct” from Automated Test Settings
 - d. On one machine check the “Use Ballot Rotation” check box. On the other insure the check box remains unchecked.
 - e. Click OK on both touch screens devices to start the test. In small elections this test will take minutes to run in large election this test will take several hours to complete.
3. After the automated tests are complete, remove and label each memory card appropriately.
4. Start the GEMS database, run a summary report to insure there are no votes cast in the election before proceeding with the test. If there are test votes reset the

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election to clear any votes from the system and rerun the summary report to ensure the reset cleared all results.

5. Start the AccuServer process.
 - a. Upload the TSx memory card run with the “Use Ballot Rotation” check box unchecked.
 - i. Print a summary report with all reporting option turned on.
 - ii. Check the summary report the expected vote patterns using the candidate base rotation positions and the number of precincts reporting.
 - iii. After completing the proofing to the vote totals and verifying the expected vote patterns are correct complete test result form SIMTEST-EV and attach it to the summary report.
 - b. Backup the test database reset the election clearing the results from the previous test.
 - c. Upload the TSx memory card run with the “Use Ballot Rotation” check box checked.
 - i. Print a summary report with all reporting option turned on.
 - ii. You need to check this using precinct reports and AV ballot images one precinct in each assembly district. Print a summary report and attach to the selected precincts.
 - iii. After completing the proofing of the vote totals and verifying the expected vote patterns are correct complete test result form SIMTEST-EV and attach it to the summary report.

CENTRAL COUNT TESTING:

The next phase of testing involves the GEMS Central Count and pre-marked test ballots requested from the AV ballot printer.

Hardware Check Central Count:

1. Using the Diebold Diagnostic card perform the following test on each OS reader used for testing.
 - a. With the reader powered off hold down the YES and NO buttons and power the OS reader on.
 - b. Using the buttons on the reader press the NO button until “TEST READER” appears.
 - c. Run the diagnostic card 5 times face up and 5 times face down.
 - d. Check to see at all led's are reading at the proper levels.
 - e. If a unit fails to read properly on all heads remove the unit mark it a defective for return to the manufacture for repair. Then replace the unit and repeat steps above.

FIRST OVAL TEST:

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These test cards have the first candidate or yes if it a measure pre marked in on each card. There is no rotation accounted for on these cards.

1. Start the GEMS database, run a summary report to insure there are no votes cast in the election before proceeding with the test. If there are test votes reset the election to clear any votes from the system and rerun the summary report to ensure the reset cleared all results.
 - a. Start the central count server option in GEM's.
 - b. Select the AV Central Count precincts.
 - c. Start the Central Count ports.
 - d. Run the first oval cards for all AV precincts. There should be one card for every ballot type.
 - e. Stop the Central Count ports.
 - f. Select the Polls Central count precincts.
 - g. Start the Central Count ports.
 - h. Run the first oval cards for all polling places. There should be one card for every poll in the election.
 - i. Balance the votes cast against the number of precincts counted.
 - j. After completing the proofing of the vote totals and verifying the expected vote patterns are correct complete test result form FIRSTOVAL-CC form and attach it to the summary report.

LA5 TEST DECK (CENTRAL COUNT):

This test used marked ballots order from the vendor based on the GEM's database used to print all language ballots. These decks are identified in the Use procedures for the Diebold AccuVote system.

These ballots are order for all Declared AV precinct and selected polls precinct to cover all races and measures in the election. The decks come with a roadmap of expected results these are used to verify the results of the test along with routine balance check for statewide races the don't rotate such as countywide/statewide propositions where the YES votes always equal the number of precincts counted and the NO votes are double the YES votes.

After the central count system hardware tests are run on all readers used in this test and the GEMS database is cleared of results each precinct is run the central count system as a separate deck verifying at the time of running that the correct number of cards are counted for that precinct.

After all cards are run a summary report is produced in GEM displaying the cumulative results. These are balanced against the roadmap. If there are any discrepancies in the vote total these need to be isolated and the decks rerun until the proper results are obtained.

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When the expected results are achieved:

1. Print precinct reports for the precinct identified in the section titled **PREPARATION FOR SELECTING LA5 DECKS**. These reports are generated using all options to display times counted, under votes, blank votes, write-in's etc.
2. Label these report "LA5 central count test" and store for later use. (these reports will be used to verify the manual voting test on the electronic voting units in the next step)

LA5 TEST DECK CC and (ELECTRONIC VOTING UNIT):

This test utilizes one or more electronic voting unit (Diebold TSx) to verify that the setup of the GEMS system is correct by checking the ballot structure on the electronic voting unit against the optical scan ballots.

This is a two part test that tests the voting accuracy of the electronic voting unit and the voter verified paper trail attached to the electronic voting unit.

1. Using a copy of the GEM'S tabulation system that is complete and ready for the election reset the election clearing all results from the system
2. Print a summary report is insuring there are no votes in the system.
3. Download memory cards for the selected polling place precinct noted in the section **PREPARATION FOR SELECTING LA5 DECKS**. For absentee precinct download one or more Early Voting cards.
4. Using properly prepared electronic voting units that conform to the Use procedures.
 - a. Locate the Optical scan ballots used in the **LA5 TEST DECK (CENTRAL COUNT)** section.
 - b. Located the memory card that matches the precinct for the deck in **STEP a**
 - c. Install the memory card into an electronic voting unit.
 - d. Set the memory card for Election.
 - e. Verify the paper trail device is working properly.
 - f. Count the number of ballots in the deck in **STEP a**.
 - g. Place the electronic voting device in voter access card create mode.
 - h. Create one voter access card for each ballot you counted in **STEP f**.
 - i. After creating the proper number of Voter Access cards place the electronic voting unit back in to voting mode.
 - j. Using the paper ballots from **STEP a**, and a Voter Access cards from **STEP h**. vote each paper ballot on the electronic voting unit exactly as it is marked. Insuring that the paper trail is printing when voting.

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- k. After all ballots are voted, upload the memory card to the GEM's database for the election and print a summary report with the same options used in printing the Central count summary reports.
- l. The paper audit trail, memory card, OS paper ballots, Central count summary report and the electronic voting unit summary are given to a balancing team.
 - i. Using a two person team one person reads the votes cast from the summary report from the electronic voting for each race and candidate and the other person verifies the same vote count on the OS central count summary report. Any differences are noted on the report for later reconciliation.
 - ii. After the summary reports are complete set them aside.
 - iii. Using a facsimile ballot for the precinct being balanced one person reads the votes voted on each paper ballot from the electronic voting unit and the other person records the votes next the race and candidate name as tick marks.
 - iv. After all ballots paper ballots from the electronic voting unit are counted one person tallies the voted marked on the facsimile ballot for all races.
 - v. Using the tallied facsimile ballot and the summary from the electronic voting unit upload compared and any discrepancy are noted.
 - vi. Discrepancies are to be reconciled by either accounting for the miss-voting on the electronic device and accounting for the discrepancy using the paper ballots generated from electronic voting device or locating the incorrect ballot from the Central count processing are rerunning the OS ballots are generating the report. This will continue until all discrepancies are accounted for and resolved.
 - vii. Note all discrepancies and record the resolution.
 - viii. File each precincts reports and paper ballots in an envelope.
 - ix. Repeat this process for each precinct.
- 5 After all precincts are balances have all personnel complete and sign the **LA5 – CC and EVS Certification FORM.**

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QC DECK – OS BALLOT POSITION CHECK.

When ordering test ballots, order one complete set of QC cards for the all absentee precincts. This special deck contains one unmarked card and one fully marked card for each precinct ordered. This deck is used to check that the system will see every voting position for the ballot type being read.

- 1 Separate the fully marked ballots from the blanks
- 2 Start GEM's Central Count using a backup Election Database for the current election.
- 3 On one OS central count reader run the special start card for this test.
- 4 Run all ballots reviewing the tape paper tape for errors.
- 5 Complete and sign the **QC DECK – OS BALLOT POSITION CHECK**. Cert form.

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QC DECK – OS BALLOT POSITION CHECK.

This test may be performed at the discretion of the Registrar of voters others official observers to allow a quick look at the setup of the election for touch screen ballot setup, voting and upload of memory cards from all devices.

- 1 Select several ballot types at random.
- 2 Acquire sample ballots for each of the selected ballot types.
- 3 Had mark (vote) each sample ballots.
- 4 Download one or more early voting memory cards.
- 5 Load the early voting memory card into an election ready voting unit.
- 6 Set the memory card into election mode.
- 7 Using a supervisor card create a voter access for each of the ballot types (AV precincts).
- 8 Using the marked sample ballots from step 3, vote each with appropriate voter access card created in step 7.
- 9 After all sample ballots are voted, upload the memory card into a test version of tabulation database.
- 10 Print precinct report for each of the voted precincts.
- 11 Compare the precinct report from step 10 to the marked sample ballots. If there is a discrepancy use the VVPAT printout to reconcile the report.
- 12 Signoff Optional – **Quick End to End Test of system FORM** after testing has been completed successfully.

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SIMTEST-EV FORM:

Election Date _____	Title _____
Test start date _____	Test end date _____

Simulation test using early voting card:

- Test using Rotation.

The test was completed successfully producing the expected predetermined results.

Conducted by:

Name	Date
_____	_____
_____	_____
_____	_____
_____	_____

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FIRSTOVAL-CC FORM:

Election Date _____	Title _____
Test start date _____	Test end date _____

Test using pre-marked ballots from Vendor:

The test was completed successfully producing the expected predetermined results.

Conducted by:

Name	Date
_____	_____
_____	_____
_____	_____
_____	_____

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LA5 – CC and EVS Certification FORM:

Election Date _____ Title _____
Test start date _____ Test end date _____

Test using pre-marked ballots from Vendor:

The test was completed successfully producing the expected predetermined results.

Conducted by:

Name	Date

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FORM: Public Logic and Accuracy Test – End to End Test

Election Date 6/3/2008 Title <u> Presidential General Election </u>
Test start date __ _____ Test end date <u> 10/24/2008 </u>

Test using randomly selected precincts by Registrar of Voters and other Observers:

The test was completed successfully producing the expected predetermined results.

Conducted by:

Name	Date
_____	_____
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