

**OBSERVATION NOTES
SAN DIEGO REGISTRAR OF VOTERS OFFICE
JANUARY 8, 2008**

PURPOSE: To observe pre-election preparations and procedures including Logic and Accuracy Testing procedures for the TSx machines.

We were escorted on our visit by San Diego County Registrar of Voters, Deborah Seiler and Department of Technology Coordinator, Charlie Wallis. We appreciate the time they took with us to explain everything and answer our questions.

We were introduced to Daniel, who showed us the Phase I process and patiently answered our questions.

A. OVERVIEW: PRE-ELECTION PROCESSES: PHASES I AND II

The process as explained:

1. Phase one begins as TSx machines are taken out of storage
2. Batteries are charged
3. Phase one testing includes calibration of the screen keys, printer, and audio keypad functions.
4. Phase Two occurs when precinct specific memory cards are loaded into the TSx machines.
5. Seals are applied to the memory card doors.
6. Each machine is given an individual storage location number and then stored in a locked, fenced-in area. The fencing surrounding the TSx storage area reaches to the ceiling.

B. PHASE ONE AS OBSERVED:

1. Verifying the following installation versions through use of an administrator Card.:
 - Build Number: 4.6.
 - Boot loader: BLR 7-1.2
 - OS Revision: WCER 7-410.2.1
 - AVPM Firmware: AVPM Model 3 REV 0 (3.0.3)
2. Calibrating of touch screens and keypads is done to make sure all four corners of the areas of a keypad do not activate an adjacent key. If activated the AVTSX must be recalibrated. The touch screen displays cross-hairs which are calibrated to respond correctly when activated to touch. This is to verify that when pressed by the voter, the proper key will be struck. The machine notifies the tester that the machine is properly calibrated.
3. The printer and audio functions of the TSx are also tested during this phase.

DEBORAH SEILER AND CHARLIE WALLIS ESCORTED US ON A

TOUR DESCRIBING WHAT WILL HAPPEN ELECTION NIGHT

On Election night, the public can view this whole process and will be escorted by office personnel.

1. Sheriff reserve officers will escort the ballots from the pick-up points to the ROV's Office. The Collection Center and check-in staff will witness that the ballots are in sealed cartons being carried in the back door of the office.

2. The cartons are placed in a holding tunnel with Sheriff Deputies posted. The cartons are inspected to ensure they are sealed with numbered, tamper-evident seals.

3 After being inspected in the Ballot Tally area, the ballot cartons are brought to the "staging area"

4. At "scanner staging area", ballot cartons are "married" (joined) with precinct specific scanner memory cards.

5. The cartons are then carried to the "scanning area". The scanning area is surrounded by a chain link fence which reaches to the ceiling. There are a number of security cameras in this large area where ballots are being processed.

6. At the scanner area, the carton of ballots is opened, a precinct specific memory card is inserted into the scanner, a zero tape report is printed and the ballots are fed through the scanner. After the precinct ballots are run, an "ender" card is run. This card closes the memory card and prints out a tape of votes. The "ender card" is to ensure that no more votes can be recorded on this card.

Approximately 150 people will be in the scanner area on election night. There will be 16 Team Leaders for six scanners. The Team Leaders will observe the work of their ballot scanners...

8. The tape with votes on it and the zero tape are placed in the box with the ballots. The memory card is then taken out of the scanner and delivered to the Tabulator Area.

9. The precinct specific card is then run through another optical scanning device which will upload the precinct specific cards to the Central Tabulator.

10. Reports from the central tabulator will be released to the public about every 30 minutes. Precinct results will be available by Friday.

11. A TV monitor is on the Gems tabulator at all times.

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**QUESTIONS PRESENTED TO DEBORAH SEILER
AND CHARLIE WALLIS:**

Question:

Since the memory cards are being fed into the machine precinct by precinct, why are we unable to see results immediately precinct by precinct?

Answer:

It's too intrusive to run a program to capture precinct results at the same time as the other program is running. It tends to stop the systems and stops the uploads. Trying to run a report against GEMS data base at the same time would disrupt the system. The ability of the system to crunch the numbers takes a lot of horse power and it can not run two programs at one time.

As big as computers are, they can not do two things at once. When the server is receiving results, that should be its primary task. CPU intensive reports are run later. Each report in the last election took almost 15 minutes to run. At the end of each report the computer stopped the uploading of cards.

Multiple reports are run. Uploads are for the Secretary of State and web site.

Question: What happens with the votes on the TSx machine?

Answer: The remaking of the ballots is done after Election Day. The printed out tapes and memory cards are in sealed pouches which are stored in a locked area until remake begins. Many will not have any votes on them. All pouches will be inspected to see which have votes on them. Each tape with votes will be remade by hand with an observer on an optical scan ballot. Ballots are then fed into central count optical scanner and results reported to the server.

WHAT ARE YOU WORKING ON NOW?

1. Ballot inspections. Have to make sure that sequence numbers are what they say they are and quantities are correct and padded correctly. English ballots are inspected first. Precinct Inspectors are to double check for their own precincts.

2. Downloading memory cards for the TSx machines.

LOOKED AT CENTRAL TABULATOR ROOM

1. There are two cameras on opposite walls. One camera is on the GEMS Servers and server racks 24/7. Another camera on the opposite wall looks at all the people scanning in ballots. Another camera is in the hall.

2. The glass enclosed tabulating room is keyed to only 3 people. Ms. Seiler is not one of them. Only the three staff members have access. The room has alarms and motion sensors.

3. There will be 6 scanners and 6 people in the room on election night who will be putting memory cards in the scanners which will upload the information to the GEMS

tabulator.

4. They are using only one "server". One "back up server" is available in an emergency.
5. There is also a line printer in this room.

Discussion of an incident observed in a previous election:

An optical scanner was hooked to the Gems Server with a serial cable. A memory card had come in from a polling place that had failed to run an "ender" card through. An "ender" card must be run through in order to upload the memory card.

This will not be an issue this time since all cards will be run in the ROV's office.

OBSERVED DOWNLOADING OF MEMORY CARDS FOR TSx MACHINES OCCURRING IN ANOTHER ROOM.

1. Only Technical staff has access to the "trusted builds" that come from the Secretary of State's office. The Technical staff then creates the "precinct specific" memory cards that are down loaded to specific TSx machines.
2. Employee puts in a blank card and downloads precinct specific information to TSx. The TSx prints out a slip of paper that tells what precinct it is and what is on the card.
3. Creating 2 memory cards for two TSx machines. One machine with its memory card is called a "hot spare" in case something happens to the first one. The second TSx and its memory card are housed at the ROV's office.
4. A person is sorting memory cards into precinct order and then labeled and scanned with a bar code serial number.
5. Memory card pouches are stored in room.
6. Always groups of people working in the area.

Question:

Could someone during this process enter an altered programmed card into a TSx that would later alter results without your knowledge?

Answer:

I don't believe a rogue card could be read. All files on the TSx are encrypted. *(SAE addition: Optical Scanners are not encrypted)*. Nobody has cracked into them. It would fail the redundancy checks and check sums tests. Same thing is true with optical scanner cards. Optical scanner cards are never out of our control.

DISCUSSION AFTER TOUR:

1. All machines are tested in election mode.
2. All machines are "stand alone", they are not daisy chained or connected to each other. Nothing is networked. "It is 1969 technology we are using."
3. ROV testing about 50,000 ballots and could be as many as 300,000 votes tested. Don't know exactly how many. They just got in the test ballots.

RUNNING THREE TESTS:

1. First run test ballots through central count system and produce results off actual ballots.
2. Run same count through optical scanner and compare results.
3. Run manually on touch screens and get another set of results.

All tests should produce same results from same ballots.

The ROV is running the same automated scripts using TSx. Testing every position on the ballot to make sure it is recognizing every single ballot position. The machines are at first tested without voter cards and tested through the use of demonstration ballots

The ROV runs a quick simulation of every ballot style, making sure everything is calculated properly. They simulate increasing votes for a candidate across positions. Check to see if a candidate is in the right position. In 1,800 precincts a specific candidate in the first position should get 1,800 votes.

Test results are sent back to the Secretary of State. Results are sent back and forth. Large numbers are used because the Secretary of State wants to see larger numbers.

Two or three automated scripts are used before running the actual test ballots. Foreign language ballots also tested, although they are the same as English ballots as far as positioning on ballot.

Ballots are run in sequence for testing. Testing 1st position, 2nd position, 3rd position and rotations one vote, two votes, three votes to quickly see ballot styles. 32 ballots are remarked, put on touch screen, results printed, manually tallied and compared. What comes out of the TSx machine should match hand counted paper ballot.

Get votes to Secretary of State at Cal Voter Work Station which is tied to the State by a T1 line. This is a type of network connector and is not hooked up to the GEMS server.