

SLR2000 Software Testing: February 16-19, 1999

Participants:

Jan McGarry (GSFC)
Jack Cheek (STX)
Tony Mallama (STX)
Brion Conklin (ATSC)
Tony Mann (ATSC)
Mattie Sadeghsieghassami (ATSC)
Randy Ricklefs (UTexas)

SLR2K Software Testing Session Number 1.

A pre-testing meeting was held on February 16, 1999. Jan McGarry, Jack Cheek, Brion Conklin, Tony Mallama, Tony Mann, and Randy Ricklefs attended.

Jan began the meeting by summarizing recent SLR2K project developments, as follows. Funding is below what was expected. The optical design has stabilized. The RFP for the mounting is almost ready to be sent out. The 10' dome is assembled. Quad detectors are arriving but are not meeting specifications. The laser is running in the lab. The new multiport event timer and range gate generator are to be delivered.

On ICC, Jan said that there is no hardware interface except the 2 KHz timing and the Bit-3. The current version of the ICC simulates the ranging and mount hardware and performs 2 KHz handshaking/data transfer with POP. She also mentioned that the machine bombs occasionally.

On POP, Jack reported that he has several threads running. POP responds to health and safety data from DAN, interfaces with the ICC, follows the DAN generated schedule and creates the circular buffer (currently only calibration mode is available). No work has been done on the frame grabber and work was stopped on the 6016 serial card.

On RAT, Randy said that he has made improvements in the areas of the data log and graphics.

On DAN, Brion reported that he has the Overseer running, worked on file copying, added to shared memory for RAT, completed conversion of normal point software to C (still to be tested), finished prediction and scheduling software, started working on the verification and test plan, has received the SQL database software, and has Apache running.

Tony Mann said that he is working on satellite processing and that he will be working on the data base.

I reported that I created a file of simulated weather data for this series of tests. The Paroscientific and Vaisala functions read this data as if they were input serially, and they process the inputs as if they were real data. The simulated wind data is read from the same file, but processing is more artificial since the Belfort/Young is an analog instrument.

The following goals were set for this week of testing:

- 1) Test through calibration.
- 2) Iron out differences between machines.
- 3) RAT should plot O-Cs and be able to control simulated range & mount via operator entered biases.

This testing centers on simulated data since very little of the non-computer hardware is available.

Testing began late in the morning on February 16, after the pre-testing meeting. We continued testing, modifying, and enhancing software through the afternoon of February 18.

A post-testing meeting was held on February 19, 1999 to summarize.

The following accomplishments were noted:

- 1) All four processors were running: POP, DAN, RAT, and ICC.
- 2) The machines did not bomb.
- 3) Shared memory has been agreed upon and updated.
- 4) Verified calibration between ICC and POP.
- 5) Verified that log of calibration was accessible to RAT.
- 6) Verified that RAT can control mount.
- 7) Verified that 'RAT attached' works.
- 8) All non-sky met variables were accessible to RAT and POP.
- 9) Verified emergency power off on DAN.
- 10) Verified that scheduler works.

The following two problems were noted:

- 1) Logging is too slow.
- 2) Sky clarity is not available to POP.

The goals we set for Testing Session 2 are:

- 1) Do satellites.
- 2) Do reboot, emergency stop, and abort.
- 3) Dome control software running.
- 4) DAN satellite and calibration processing running.
- 5) DAN makes normal points.
- 6) DAN makes residual file.
- 7) RAT reprocesses data.
- 8) ICC simulates noise component of range signal.
- 9) ICC simulates mount jitter.
- 10) ICC adds maximum velocity and acceleration for mount.
- 11) POP produces log file for RAT (correctly and speedily!).
- 12) POP produces debug file for RAT.
- 13) Sky clarity available to POP.
- 14) RAT shows histograms by quadrant (possibly).
- 15) Circular buffer becomes a single thread and uses the correct sized buffer.
- 16) Angular search and bias calculation on POP (possible).
- 17) Enable watch dog timer on DAN (disable via hardware switch).

Testing Session Number 2 will begin on May 3, 1999. There will be an interim meeting on April 8 at 9:30 am at the 48" with Randy on telecon.