GLAST Large Area Telescope:

Endgame VSC issues

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VSC – Fully loaded configuration

- A fully loaded VSC would contain the following hardware:
  - Discrete Board
  - 2 Science Boards
  - 1 850 board for SC housekeeping
  - 1 468 board for SC housekeeping
  - GPS board
  - GPS antenna
- In addition, this VSC requires software to run the discrete boards, science boards, and SC housekeeping
VSC configurations

- Testbed (SIU + 2 EPUs, all rad750s)
  - Discrete, 2 Science, 850
  - GPS
  - GASU
- Multi-crate test stand (3 VME crates emulating SC, SIU, EPU)
  - Discrete, 1 Science, 850
  - GPS
  - GASU
- VSC lat-elf5, lat-elf18 (SIU is rad750) – VSC development
  - Discrete, 2 Science, 850
  - GASU
  - GPS (w/ antenna)
  - 850 and 468 board available on neighboring lat-elf6
- VSC lat-elf9, lat-elf19 (SIU is rad750)
  - Discrete, 1 Science, 850
- VSC lat-elf15, lat-elf20 (SIU is rad750)
  - Discrete, 1 Science, 850
- GASU test station in clean room
  - Discrete, 1 Science, 850
  - GPS
How many of each board are we building?

- Discrete boards – DONE
  - 6 boards built
- Science boards – DONE
  - 9 boards built
- GPS boards – DONE
  - 4 boards acquired
  - 2 antennas installed
- VSC850IO boards – in progress
  - 6 boards done
  - 2 boards being built
- VSC468IO boards – in progress
  - 1 board built
  - 6 boards have been fabricated, need to be loaded/tested
- Cables for all of these boards have been defined
  - Need to be built/tested in quantity
VSC Status

• VSC Phase I - COMPLETE
  – 1553 Interface
    • In use by FSW, FSW test, and I&T in dataflow lab
  – VSC Discrete board

• VSC Phase II – voltage and temperature monitoring by SC
  – Software
    • VSC housekeeping near completion (Gregg Thayer)
  – Hardware – VSC850IO board, VSC468IO board
    • VSC850IO
      – Testing complete
      – New front panel to be built (Ryan Herbst and Gregg)
      – Cables are being manufactured and tested (Ryan and Gregg)
    • VSC468IO
      – One board is complete, needs to be tested (Gregg)
      – Needs front panel (Ryan and Gregg)
      – Remaining boards to be loaded (Ryan and Lupe)
      – Cables are being manufactured and tested. (Ryan and Gregg)
In progress

• VSC Science data decoder
  – Hardware
    • VSC Science data board is complete
  – Software – 3 groups proceeding in parallel
    • FSW supplied compression/decompression tools (JJ & Co.)
    • VSC layer (Amedeo Perazzo)
      – Uses FSW tools to decode science data
      – Passes science data on to LICOS
      – LICOS implementation (Ric Claus & Co.)
  – Estimated completion
    • Stumbling blocks: multiple vacations overlap
    • Solution: work in parallel