GLAST Large Area Telescope:

Electronics, Data Acquisition & Flight Software W.B.S 4.1.7

Face-To-Face June 15 Meeting

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TEM/TPS Status & Schedule

- **Status**
  - **Qual Module**: at SLAC
  - **Flight Tower-Electronics Modules/Tower Power Supplies**
    - A & B on towers
    - Status of #1 thru #19 on
    - #1 thru #5 delivered to I&T
    - #6 has bad TEM connector, to be repaired
    - #7 thru #9 were vibrated, need TV testing (5 days for set of 2)
    - TEM and TPS modules for #10 thru #19 in various states, still to be integrated into TEM/TPS packages (#15 thru #19 are spares)
PDU Status and Schedule

• Status
  – 1st PDU box was pre-coat tested at SLAC and returned to assembler
  – Is in conformal coating, expected delivery to SLAC is June 27 (followed by vib/TV/EMI)
  – Expected delivery to I&T is Aug 9
  – 2nd box is in manual assembly, expected delivery to I&T is Oct 4

• Tester
  – Thermal vacuum test-setup in commissioning
GASU Status and Schedule

• Status
  – 4 GASU Power-supplies CCAs done, waiting for GASU box integration
  – 4 DAQ boards: finish flying probe testing
  – Expected delivery to SLAC (pre-coat): June 29
  – Expected delivery to SLAC (final assembly): Aug 4
  – Expected delivery to I&T: Sept 16
  – 2nd box: expected delivery to I&T: Nov 9

• Issue:
  – Microsemi Zener diode to protect ACD over-voltage is again delayed, now 7/7 (ordered 2.5 years ago).
  – Working with Microsemi to possible get a in-stock lower voltage 3.9V device and screen them to get minimum Zener voltage (devices are +/- 5%, but would need e.g. 3.9V – 0%, +10%)
    • 2 devices needed per GASU enclosure

• Tester
  – TV test setup in assembly
SIU/EPU Status and Schedule

- **cCPI board assembly test**
  - **Backplane**
    - Issues with under-fill on back-plane (some pins have down to 60-70% fill)
    - Refabricated board with less copper, but still have under-fill
      - Did couple of rounds (assembly, X-ray/cross-sectioning at GSFC, discussions)
      - Discussions on what fill is sufficient
    - Discussions whether to change from ERNI to Hypertronics connectors, but they are not compatible (so issue with RAD750 board to back-plane compatibility)
    - In assembly of first 3 flight backplanes, will be sent to GSFC for X-ray before CCA is completed
    - Agreed to do some qual testing using one of those backplanes (continuity test while thermal-cycling the board)
      - Need to come up with test-setup/procedure asap
  - **Plug-in boards (CPS/LCB/SIB)**
    - **SIB**
      - 3 rounds of SIB test- assemblies: issues with voids (not with under-fill)
      - Modifying wave-solder fixture to possible take care of voids
      - Require new lot of Austin EEPROM's (found chlorine contamination issue, parts in hand can't be used)
        - Partial delivery expected mid June
    - **LCB**
      - 1 flight board in assembly, one test-board with only connectors also in assembly (to be analyzed by GSFC)
    - **CPS**
      - Same state as LCB
  - **Schedule**
    - Oct 13: deliver first SIU crate to I&T
    - Oct 25, deliver 2nd crate first EPU) to I&T
    - Subsequent crate have 1 week lag (TV)
Harness & HCB

- Harness cables are coming in steadily
  - Some cables needed rework and retest
- Heater Control Box assembly
  - Contract about to be awarded
VSC (Virtual Spacecraft Simulator) &

- Several VSC‘s assembled, in use by FSW and I&T
- Thermal Control Lockheed test setup
  - Rack in assembly with
    - Power supplies
    - Custom regulated feed bus-protection unit
    - Custom unregulated feed bus-protection unit
    - SIU with SIB/LCB/CPS
    - GASU & PDU
    - Misc cables and test-boxes
    - Software
  - Expected completion by end of next week
Issues

- AUSTIN EEPROM delivery
- Qualification of cCPI press-fit connector assembly using solder process
- Delivery issue with GASU PS Zener protection diode for ACD voltage
- Need to work on closing open FPGA review items