GLAST Large Area Telescope

Instrument Science Operations Center
+
WBS 4.1.D
Science Analysis Software

Monthly Status Review
3 November 2005

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ISOC Management

- GLAST Project WBS 4.1.B, ISOC, has been closed as of start of FY2006
- ISOC Staffing
  - 2 new ISOC developers started in October
    - Mila Mitra: Trending, GS testing, s/w acceptance testing
    - Stephen Tether: Level0-Level1 pipeline processing
- ISOC Operations Facility
  - Further meetings with SLAC facilities staff on schedule of facility construction work
    - Operations control room scheduled for completion in 2006
    - Dataflow lab expansion deferred to 2007, which is compatible with release/return of flight spare detectors after beam test/calibration
  - Planning continues for consolidation of ISOC operations staff in Central Lab Annex.
- I&T coordination
  - Coordinating off-project support needs at NRL/SASS with I&T
- Beam Test
  - Coordinating staffing and M&S needs for ISOC & beam test

ISOC Workshop

- First ISOC workshop held at SLAC, 1-2 November 2005
- 40 attendees, including Project Science, GSSC, MOC (E. Ferrara)
- Intent of ISOC Workshop
  - Preparation for LAT operations during GLAST mission
  - Planning for LAT ISOC development activity after instrument shipment and delivery
  - Broaden involvement of LAT collaboration in LAT operations
  - Increase visibility of ISOC functions to collaboration
  - Focused on elements not on the critical path in the LAT I&T
    - SAS, PVO, CHS
  - Objectives
    - Planning for development of offline software tools and data products
    - Coordination of various current ISOC development efforts
  - Agenda sections: Dataflows and Databases; Using LAT data; Processing and Serving LAT data
  - Presentations at http://confluence.slac.stanford.edu/display/ISOC/ISOC+Workshop+Nov+2005+Agenda

CHS Activity

- Housekeeping data issues
  - Submitted requirements to the MOC for receiving the 96-analog LAT data separate from the spacecraft APID packets, which are ITAR controlled
  - Coordinated standardization of 96-analog mnemonics with GD/SASS
- Drafted a sample operations narrative procedure, which commands a memory dump from the SIU
- GOWG and GIMGOM meetings
  - Discussed documentation and website security
  - Identified need for Operations Agreements on ToO Process and Mission Planning Process
- Document review
  - FSW-ISOC ICD (LAT-SS-05141-01) – provided comments to FSW
  - Mission Operations Agreement – signature copy is out for final review

ISOC Ground Test Preparations

- GRT4 preparations
  - IOCs no longer participating in GRT4 (17 Nov) – it was too close to GRT3
  - Next IOC testing moved to GRT3
  - SW release 1.1 was released on schedule (*before* IOCs were dropped)
- GRT3 preparations
  - 14 Dec formal test date
  - Mission planning data product exchanges to be tested prior to GRT3 date
    - spread over several weeks to roughly match real mission planning cycle
  - New SW release 1.2
    - on schedule for dev completion on 9 Nov with acceptance test completion and SW release on 16 Nov
    - includes
      - ingest five orbital products
      - exchange mission planning timelines
      - ingest overlapping L0 data files
    - but no longer includes processing L0 into L1 data products or submission of L1 to GSSC
      - test of this functionality moved to engineering test in early 2006 (better matches when needed SW available from FSWI)
  - Continued acceptance test preparations
    - completed enhancements to requirements database to support GRT3 tests
    - continued development of five new acceptance tests
    - no automation of test scripts planned for GRT3 – but likely for GRT5 (~Mar 06)

Software Development Activity

- **ISOC / FSW Integration**
  - Performed file uploads to testbed via ITOS.
  - Developed ITOS displays to examine HSK telemetry coverage.
  - Physics data acquisition from FES in work.
- **Operations Data Products handling**
  - Created database structures & parsing routines for TDRSS scheduling and orbit-event products.
- **Trending**
  - Improved handling of multiple versions of T&C information in the database schema.
- **Data Handling**
  - Began integrating new science-interface packet format into CCSDS archive/retrieval code.
  - Developed decommutation code for FSW command-response and MSG packets.

ISOC Database Activities

- **LAT Configuration database**
  - Database design is essentially done
  - "Create config" code is written and checked out for initial simple case (all that is needed for calibration runs), *except for calls to FSW*
  - Remaining services are not yet implemented, but will be needed soon ("prepare for upload", "record active config", queries). These are straightforward compared to "Create config".
  - Integration with FSW & Online/LICOS are next
    - FSW: make FMX functions callable ("add", "upload")
    - FSW: make callable function to construct LATC master file
    - FMX alternative for uploading config files to LAT RAM
    - Online: integrate with B. Leas XML translator, J. Panetta LATC file partitioner

Future Activities

- GRT4 – early November 2005
- GRT3 – 14 December 2005
- MOR – 15-16 March 2006
- SLAC/KIPAC review of ISOC – early 2006
  - Review of tasks & resource needs

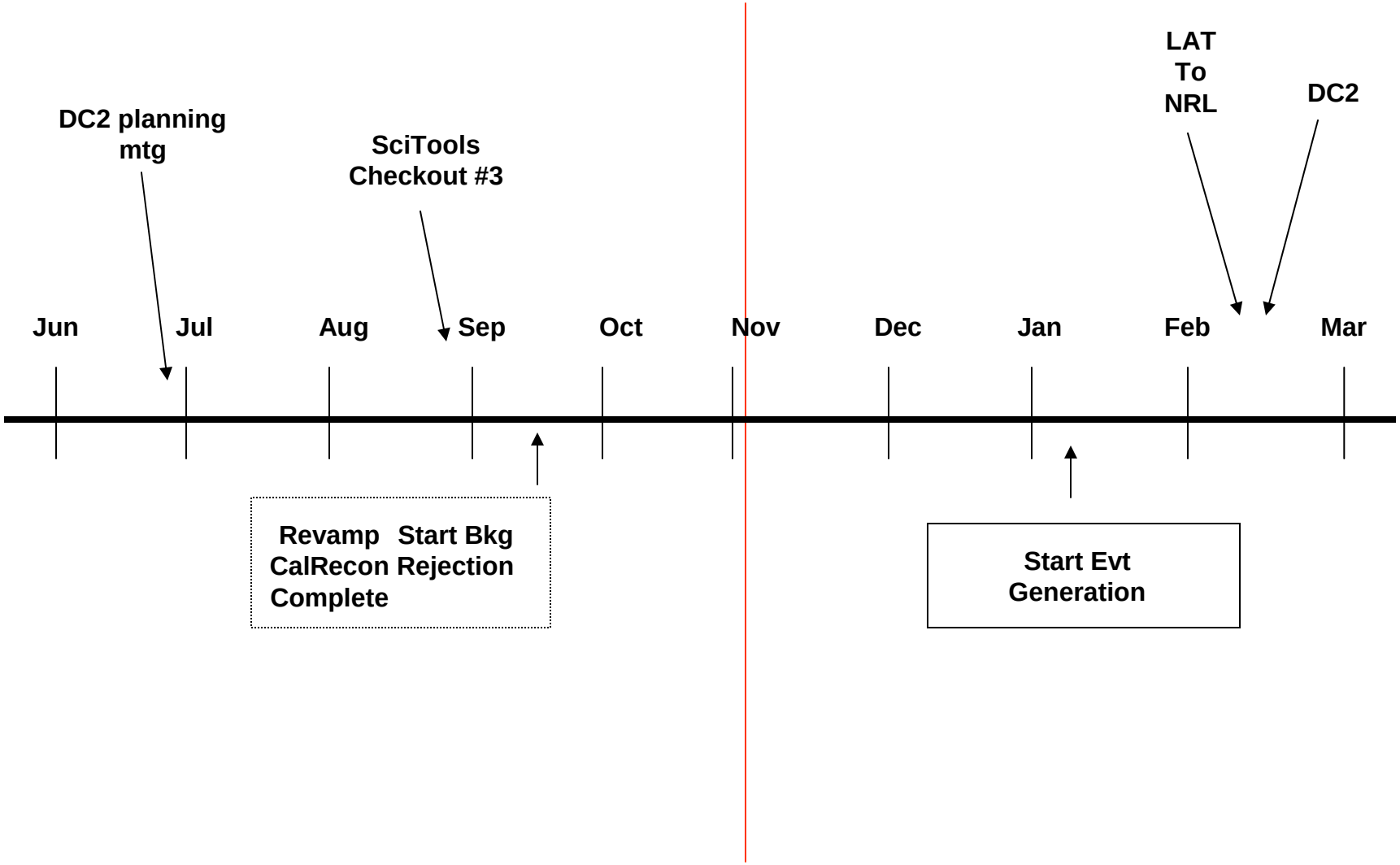
SAS: October

- Focused on DC2 prep with I&T stable
  - Produced 500M background events
    - 10000 batch jobs run in pipeline
    - Lots of reliability improvements (mostly trying to avoid batch/nfs disk etc problems)
  - Getting down to the wire now:
    - A few upgrades in progress to improve the background rejection
      - TKR hits near the shower access
      - Improved correlating tracks to ACD tiles
      - Feeding back classification tree analysis to Gleam
    - Will run off 100M events as test with new code, then extend to 1B (at SLAC and Lyon)
    - Start first round of Instrument Response Functions determination
    - Setting up machinery for background interleave with DC2 signal

SAS: Upcoming

- Run 1B DC2 backgrounds and 50M allGamma (for IRFs)
- DataCatalogue integrated with DataServer
- Astro Server ready for DC2
- Pipeline II requirements/design agreed to
- Upgrades to pipeline web interface
- Background analysis finalized; first round IRFs ready.

Timeline


DC2 planning mtg
SciTools Checkout #3
LAT To NRL
DC2
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Jan
Feb
Mar
Revamp CalRecon Complete
Start Bkg Rejection
Start Evt Generation