GLAST Large Area Telescope

WBS 4.1.B
Instrument Science Operations Center
Monthly Status Review
27 September 2005

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650-926-2989
ISOC Management

- ISOC Managers
  - Richard Dubois and Eduardo do Couto e Silva named as ISOC Deputy Managers

- ISOC Staffing
  - Offers for 2 CHS positions going through HR. Starts expected in October.
  - Working with ISOC team leaders on team details: tasks, roles, people

- ISOC Operations Facility
  - SLAC infrastructure proposal has been submitted for construction of operations facility
  - ED&I funds being made available to start design and planning
  - Construction expected to follow KIPAC staff move to new Kavli building. To be completed in 2006.
ISOC Organization

ISOC
Manager: R. Cameron
Deputy: E. do Couto e Silva
Deputy: R. Dubois

- Commanding, Health and Safety
  Lead: R. Cameron (TBR)
  Deputy: TBD

- Science Analysis Systems
  Lead: R. Dubois
  Deputy: TBD

- Flight Software
  Lead: J. Thayer
  Deputy: TBD

- Performance Verif. And Optimization
  Lead: E. do Couto e Silva
  Deputy: A. Borgland
GLAST Lat Project

GLAST Operations Facility

1. Operations Control Room
2. Dataflow Lab Expansion
3. Existing Dataflow Lab
Ground Operations TIM

- Successful Ops TIM held 14-15 Sept 05 with MOC, GSSC, GD/SASS, and GBM in attendance
- Ground System Security
  - MOC access for pre-launch rehearsals and L&EO
- Review of Space Asset protection recommendations
  - Limit public access to spacecraft ephemeris
  - Restrict network connectivity
  - Secure and protect documentation
- Procedure Development/Validation
  - Instrument Operations Engineer from project to assist with development and validation of LAT operations procedures
  - Utilize testbed for procedure validation
  - ISOC to provide an initial narrative procedure by 14 Oct to aid in finalizing PROC development process
Ground Operations TIM, cont’d

- **Data Management**
  - Preparing proposed changes to Operations Data Products ICD
    - ISOC will not receive any spacecraft database information or spacecraft housekeeping packets due to ITAR control
    - Require MOC to extract the LAT 96-analog and discrete information from the spacecraft packets before sending to the ISOC

- **Mission Planning**
  - Demo of Aura mission planning tool for L&EO and on-orbit
    - ISOC requests current data exchange per ICD to reduce impact of tool on current ISOC software
  - RTSs available for instrument use
    - ISOC to identify expected LAT use of RTSs

- **Data Management**
  - 98% data accountability – identify better estimator of lost science

- **L&EO Planning**
  - GD/SASS developing 60-day timeline
    - Need to provide GD/SASS with LAT activation detail
Other CHS Activity

- Delivered B0-5-0 database update to GD/SASS on 26 Sept
- Revisited diagnostic 1553 data with FSW
  - Reviewed updated list of diagnostic data and operational use
    - Volume and presence of most diagnostic data packets controllable through ground command
    - Diagnostic data sent automatically by FSW is limited to mode changes and EPU reboot
- GOWG meeting
  - Reviewed and worked action items from Operations TIM
  - Plan to review Mission Operations Agreement (MOA), which defines ground system element roles and responsibilities, on 29 Sept
ISOC Ground Test Preparations

- Continued Ground Readiness Test Team (GRTT) participation with GSFC and other ground elements
  - GRT4 test procedure being finalized – currently under review by ISOC and other ground elements
  - GRT3 objectives agreed – requirements and procedures being worked

- Next GRT – GRT4
  - Being moved to early Nov (was 25 Oct) – no definite date yet
  - Will use SW release 1.1
  - No new functionality needed, but will informally verify that previously tested features that are needed in GRT4 still work

- GRT3
  - Also being moved (was 6 Dec) – no later than 15 Dec
  - New SW release 1.2 to be completed 9 Nov 05
  - Continued acceptance test preparations
    - Enhanced requirements database to support new tests
      - added support of multiple versions of test procedures and multiple test runs per test procedure
    - Started writing 5 new acceptance tests to verify new functionality
ISOC Ground Testing (Cont.)

- **GRT2 follow-up**
  - ISOC reported 3 discrepancies with MOC data products in GRT2 (June 05)
    - All 3 data products were changed by MOC as needed, and resubmitted and verified by ISOC this month
    - All 3 were closed by the Ground System Discrepancy Review Board in 12 Sept GSDRB meeting

- **Test Automation**
  - Need to automate since manual testing (as was done in GRT2) will become too slow as # of tested reqts increases (especially with GRT5 ~Mar 2006)
  - Simplest approach appears to be to exercise ISOC software command line and web interfaces using python scripts
  - Ran proof-of-concept python script this month → worked well
  - Next step: automate a full GRT2 manual script
Software Development

- Next release scheduled for 29 September 2005
  - Interim release to bring production installation up to head of development tree (release # 1.1)
- Continued co-development with I&T Online software
  - Ported telemetry portions of ISOC Oracle T&C database to PostgreSQL for Online / mobile rack use.
  - Developed common class hierarchy for telemetry engineering-unit conversion software / database retrieval
  - Imported Online EU conversions to Oracle T&C database
- Updated ITOS $\leftarrow \rightarrow$ VSC adapter program to latest VSC API
  - Developed rudimentary STOL proc for starting up the LAT testbed
  -Began checkout of ITOS file loads to testbed (SIU ramdisk only)
Software Development (cont’d.)

- Continued development of JSP / JAIDA web-based trending system
  - Demonstrated to various user groups and began implementing feature requests from feedback
  - Updated underlying database table structure to provide more convenient handling of multiple T&C database versions / time evolution of telemetry database definitions
ISOC Database Activities

- **LAT Command and Telemetry database**
  - Updating LAT T&C DB for housekeeping trending, as updates occur in conjunction with FSW releases
  - Working with I&T on control of telemetry limits and cal curves to be shared between LICOS for (SLAC and NRL testing) and dbx files (for SASS testing and flight ops).

- **LAT Configuration database**
  - MOOT/MOOD interface to LICOS being defined
  - Expected capability in mid October
    - Delivery and tracking of config files to LICOS
    - Manual construction of new config files
Future Activities

- GRT4 – early November 2005
- GRT3 – no later than 15 December 2005
- MOR – 15-16 March 2006
Level 3 Milestone Count

4.1.B ISOC

- Plan
- Actual
- Forecast

Plan vs Actual vs Forecast chart.

Milestone Count

- DEC05
- JAN05
- FEB05
- MAR05
- APR05
- JUN05
- JUL05
- AUG05
- SEP05

Level 3 Milestones:

0
1
2
# Level 3 Milestone List

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Milestone Variance Explanation

- Schedule Impact
- Cost Impact
- Corrective Action
  - None Required
## Cost Report

### Monthly Contractor Financial Management Report

**31-Aug-05**

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