GLAST Large Area Telescope

WBS 4.1.B ISOC
GSFC Monthly Review
June 30th, 2004

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May/June Accomplishments: Overview

• We have developed an organization and staffing plan in concert with the SLAC management.
  – ISOC buildup started, rapid ramp up over next year
• We have completed initial work on an operations architecture.
• We have made good progress in addressing peer review RFAs
• Substantial work remains before CDR but we believe we will be ready by late July.
May/June Accomplishments

- We have developed an organization and staffing plan in concert with SLAC management.

Excludes SAS and SAC.
Staffing

- Rob Cameron signs on as ISOC lead, to start on August 16th.
- Software developer Steve Culp joins in June
- Database developer posting out now
- Technical writer posting out now
May/June Accomplishments

• We have completed initial work on an operations architecture.
• Drivers
  – Minimize V&V burden and total cost
  – Maintain all science capabilities
  – Simplify interfaces and allow early testing
• Recognized that neither of the previously considered options were particularly attractive
  – ITOS/Commercial packages don’t accommodate complexities of science data
  – Homegrown system doesn’t have heritage, not ready in time to make project timelines.
    • Most of additional code needed duplicates that in existing packages
  – → Studied hybrid solutions
Proposed ISOC S/W Architecture

MOC/GSSC

All State of Health requirements satisfied within ITOS*

No req’ts on MOC that require LATOPS layer

ITOS

Cmd

SOH trending and display

DB

LATTE Ops

Data

Cmd

Science data/performance trending

Register load generation

Relational database interaction

Pipeline/SAS interactions

*or equivalent
ISOC Dataflow During I&T Single Tower Testing

- Obtain data during I&T EM2 testing
- Goal is to read houskeeping data off flat file produced by Online
- Database development and maintenance is shared between I&T and ISOC
ISOC Dataflow During I&T Multi-Tower Testing

- Obtain data during I&T testing
- Increase in ISOC functionality
- Direct interface with SIU for CCSDS command and telemetry packets
- Obtain testbed simulated data via SIU
- Demonstration of ISOC capability increases as functionality is developed
• Interface with SIIS/AstroRT for telemetry packets and commanding
• Obtain testbed simulated data via SIU and SIIS
• Demonstration of ISOC capability increases as functionality is developed
ISOC Dataflow During GRTs, L&EO and On-orbit

• Shows full ISOC capability for L&EO and On-orbit
• GRTs will test capabilities as they are available
Architecture status

• Ops plan in review by GSFC
  – Many good comments received
• Level II and III requirements in review by GSFC
  – Comments expected this week
• Management & Ops plan, and Level II/III requirements to be in near final form at CDR.
• ITOS evaluation underway, ITAR issues being worked.
May/June Accomplishments: RFAs

• We have made good progress in addressing peer review RFAs
  – 7 of 20 now submitted for closure
  – 7 of remaining to be submitted in next week
• All RFAs will be submitted for closure by end of July.
May/June Accomplishments: Other

- Database working group convened (with I&T)
  - 6 meetings of broad group
  - Examined needs, possible solutions, basic requirements
  - Concluded that a SQL relational database, nominally Oracle, would suffice for both I&T and Ops.
  - Database developer position now posted.
May/June Accomplishments: Other

- Scenarios working group convened (with FSW, I&T)
  - Define ops scenarios by phase
    - I&T (both pre and post FSW)
    - Launch & on-orbit checkout
    - Survey
    - Pointed
  - Will begin meeting with subsystems next week
    - Examine assumptions for each by phase
    - FSW, I&T to attend all meetings
    - Mnemonic naming convention discussion initiated
    - Attended S/C CDR
Near Term Milestones

• ISOC CDR, August 3rd
  – Primary effort of ISOC staff for next month
  – Weekly tagup with GSFC MOC/GDS to review docs, progress…substantial assistance from the project.
• Ground System Detailed Review August 18-19, 2004
• LOF SW Release 1 March 15, 2005
  – Support GRT #2
• LOF SW Release 2 October 14, 2005
  – Support GRT #5
• Mission Operations Review October 18, 2005
CDR Prep Schedule

• July 8th  Revisit roadmap with project management
• July 21st  Draft slide review
• July 26th  Slides to GSFC
• July 29th  Dry Run
• Aug 3rd   ISOC Peer Level CDR
• Aug 18th  GDS CDR
Issues and Concerns

• Staffing profile is steep over next few months and coincident with management change.
  – Transition plan in work, new manager Cameron to receive weekly briefings on progress, plans.
  – Some near term help may be contract to reduce hire cycle time.

• Development of ISOC software will require close collaboration with I&T and FSW.
  – Working relationship has been good, regular forums for interchange on areas of common concern now in place.

• Work required for CDR prep is formidable for 3 person team
Budget & Schedule

- ISOC effort is off project
- Detailed development schedule in work for CDR, no issues foreseen in meeting ’05 milestones for readiness