GLAST Large Area Telescope: I & T Input to Face to Face Managers Meeting, June 9th, 2004

Elliott Bloom
SU-SLAC
Subsystem Manager

elliott@slac.stanford.edu
650-926-2469
Agenda

• Cash Flow
• Schedule
• Technical Discussion
GLAST Large Area Telescope:
I & T Input to Face to Face Managers Meeting,
June 9th, 2004

Cash Flow

Elliott Bloom
SU-SLAC
Subsystem Manager

elliott@slac.stanford.edu
650-926-2469
## I&T Cost Forecast from Controls

### 4.1.9 INTEGRATION & TEST

<table>
<thead>
<tr>
<th>CAPW[3]</th>
<th>THRU APR04</th>
<th>MAY04</th>
<th>JUN04</th>
<th>JUL04</th>
<th>AUG04</th>
<th>SEP04</th>
<th>Cumulative</th>
</tr>
</thead>
<tbody>
<tr>
<td>forecast totals</td>
<td>$3,671</td>
<td>$344</td>
<td>$300</td>
<td>$299</td>
<td>$259</td>
<td>$470</td>
<td>$5,342</td>
</tr>
</tbody>
</table>
4.1.9 Change Requests and Lien List

- LAT-XR-03452, to correct the MGSE plan.
  - 243k$ in FY04
  - March through June
- LAT-XR-03793, to add funding for the I&T Engineering Manager.
  - 89k$ in FY04 and 209k$ in FY05
  - Manager expected to start soon
- LAT-XR-03794, to extend designer for IFCT department
  - 43k$ in FY04
  - June through the end of the fiscal year
- LAT-XR-03795, for additional mechanical tools and special technician training.
  - 23k$ in FY04
  - Expect to purchase tools June-August
  - Offsite training in June and in August
- Integration personnel during gap caused by late start of flight I&T.
  - 117k$ to fill gap in FY04, additional funds for FY05
- Cover cost to design and manufacture I&T break out boxes and test cables.
  - 45k$ in FY04
  - Break out boxes and cables are being built now
- Cover design and fabrication of special connector mate tool for TEM.
  - 40k$ in FY04
  - Design work has already occurred
- Online Software and SVAC manpower adjustments
  - -80k$ in FY04 and -83k$ in FY05
- Continued I&T Manpower cost delta borne by NASA in FY 04
  - 408k$ in FY05
GLAST Large Area Telescope: I & T Input to Face to Face Managers Meeting, June 9th, 2004

Schedule

Elliott Bloom
SU-SLAC
Subsystem Manager

elliott@slac.stanford.edu
650-926-2469
I&T Overview to Start of Integration (1 and 2 tower) / Key-Milestones for Next 3 Months

- Requirements
  - LAT-MD-02730
    - 6/10/04 *
  - I&T Plan for Review
    - LAT-MD-01376
      - 5/3/04

- Survey Plan
  - 5/1/04 draft (done)
  - 5/31/04 final

- LATTE v.3.0
  - 4/1/04

- EGSE Hwr Deliveries
  - 6/1/04 → 7/7/04

- I&T Functional Test Scripts
  - 6/1 - 7/1/04

- Subsystem Scripts
  - 5/1/04 → 5/15 to 6/21/04

- Electronics Test-Bed
  - 5/04 → 8/3/04

- EM 2
  - 6/9/04 – 7/7/04

- I&T Mockup
  - 4/1/04

- Training & Procedure Verification
  - 6/11/04 – 7/7/04

- Electronics Test Bed
  - 5/04 → 8/3/04

- I&T Plan for Review
  - LAT-MD-01376
    - 5/3/04

- I&T Mockup
  - 4/1/04

- IFCT/Management/Particle Test
  - IRR
    - 7/9/04

- MGSE/Online/SVAC
  - IRR
    - 8/7/04

- Receive Flight Hardware Start Integration

- Drawings
  - 6/1/04 → 6/7/04

- Fabrication
  - 6/14 → 7/29/04

- Procurement Delays
  - 8/15/04

- Proof Testing
  - 8/15/04

- * Final though two tower CPT, releases to support integration procedure development

4.1.9 - Integration and Test
EM-2

Mini Tracker Refrb. 4xy active layers 6/8/04

Test Mini Tracker (on bench) 6/11/04

Install Mini Tracker (on EM TKR plate and CAL Frame) 6/14/04

EM TKR LPT bay (on EM TKR plate and CAL Frame) 6/15/04

EM CAL 6/21?/04

EM CAL CPT (on shipping container) 6/21/04

Install EM CAL (on EM TKR plate and CAL Frame) 6/23/04

CAL LPT (on EM TKR plate and CAL Frame) 6/23/04

EM TEM TKR EICIT/IVT (on EM TKR plate and CAL Frame) 6/24/04

EM ACD 6/?/04

GASU/ACD EICIT/IVT (on Bench) ?/?/04

EM ACD Post Ship Test (on Bench) ?/?/04

Single Bay CPT (on EM TKR plate and CAL Frame) 6/25/04

Timing In w/ CAL & TKR (on EM TKR plate and CAL Frame) 7/2/04

EM GASU 7/15?/04

EM ACD CPT (on Bench) ?/?/04

Install EM ACD (on EM TKR plate and CAL Frame) ?/?/04

EM ACD LPT (on EM TKR plate and CAL Frame) ?/?/04

EM GASU-TEM EICIT/IVT (on EM TKR plate and CAL Frame) ?/?/04

FSW Support for filtering ?/?/04

EM LAT CPT (on EM TKR plate and CAL Frame) ?/?/04

Timing In w/ EM ACD (on EM TKR plate and CAL Frame) ?/?/04

Cosmics (on EM TKR plate and CAL Frame) ?/?/04

Van de Graaff (on EM TKR plate and CAL Frame) ?/?/04

4.1.9 - Integration and Test
Science Verification, Analysis, and Calibration (SVAC) - Roadmap

- SAS Calibration Algorithms (May)
- SAS Database (May)
- SAS Pipeline Infrastructure (March - April)
- SAS Geometry Review (April)
- SVAC Acceptance and Test of SAS Algorithms (June - July)
- SVAC Database and Calibration trending (March - July)
- SVAC Data Pipeline (June)
- 1 & 2 Tower Geometry (April – May)
- MC Datasets 1 & 2 tower (May)
- Instrument Test Analysis (March – July)
- Online / SVAC IRR (8/??/04)
- EM 1 data analysis (March - May)
- SVAC Workshops (June and September)
- EM 2 data analysis (July)
Priority Ordering for Online

1. Hardware Monitoring, Trending, and Power up.
   • Requires Ric to design – July 1 design done, and fair amount of implementation.
   • Requires FSW to provide interface – June 15
   • Full implementation (I&T online + ISOC) – July 15
2. Subsystem – I&T scripts ready to use by I&T on Flight Hardware and under configuration control.
   • Receive subsystem scripts
     • CAL – June 15
     • ELX – July 1
     • TKR – June 15
     • ACD – June 15
     • Trigger group, implement scripts in end-to-end test committee report – Ric (volunteer lead), Jim P., Gary G., Hiro, Johann, JJ and Mike H. – June 21
   • Modify subsystem scripts to I&T specification. (Delivery + 2 weeks)
   • Place scripts under configuration control (1 hour)
3. LATTE security against unauthorized software changes (August 1)
4. Method for full configuration tracking of all components
   • Provided method as part of the configuration files
5. V&V online system and Scripts (June 1- August 1)
6. Event “prescaling” in Event Server (July 1)
7. Transfer of LDF.fits, Run Configuration files, Run and Test Report files to persistent storage.
   • Transfer manually (done)
   • Transfer via OPUS (July 1)
8. Electronic Logbook (July 1)
GLAST Large Area Telescope: I & T Input to Face to Face Managers Meeting, June 9th, 2004

Technical Discussion

Elliott Bloom
SU-SLAC
Subsystem Manager

elliott@slac.stanford.edu
650-926-2469
Priority Ordering for Online

1. Hardware Monitoring, Trending, and Power up.
   • Requires Ric to design – July 1 design done, and fair amount of implementation.
   • Requires FSW to provide interface – June 15
   • Full implementation (I&T online + ISOC) – July 15

2. Subsystem – I&T scripts ready to use by I&T on Flight Hardware and under configuration control.
   • Receive subsystem scripts
     • CAL – June 15
     • ELX – July 1
     • TKR – June 15
     • ACD – June 15
     • Trigger group, implement scripts in end-to-end test committee report – Ric (volunteer lead), Jim P., Gary G., Hiro, Johann, JJ and Mike H. – June 21
   • Modify subsystem scripts to I&T specification. (Delivery + 2 weeks)
   • Place scripts under configuration control (1 hour)

3. LATTE security against unauthorized software changes (August 1)

4. Method for full configuration tracking of all components
   • Provided method as part of the configuration files

5. V&V online system and Scripts (June 1- August 1)

6. Event “prescaling” in Event Server (July 1)

7. Transfer of LDF.fits, Run Configuration files, Run and Test Report files to persistent storage.
   • Transfer manually (done)
   • Transfer via OPUS (July 1)

8. Electronic Logbook (July 1)
Needs

- EM GASU ASAP
- Need another EM GASU from Gunther by the time of 2\textsuperscript{nd} tower integration into grid. (Elliott has discussed this with Gunther and he agrees). Capture this agreement in PMCS with a change request.
- ACD EM just after delivery of GASU (need GASU to test ACD).
- CAL EM for about a month, two weeks before the delivery of the GASU.
- FSW enabling simple filtering for high rate test of EM soon after delivery of GASU – not currently in plan.