



AntiCoincidence Detector

**GLAST Large Area Telescope:
Cost/Schedule Review
September 30, 2004
AntiCoincidence Detector (ACD)
Subsystem
WBS: 4.1.6**

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Significant Accomplishments

- **Completed assembly and functional testing of 2 single row Electronic Chassis (minus the PMTs).**
- **Completed corrective action to resolve fiber ribbon anomalies (length discrepancies, vents, and fiber bushing orientation).**
- **Installed fiber ribbons on the flight structure.**
- **Began installation of TDAs on flight structure.**
- **Completed thermal cycling, vibration, and 2 TVAC cycles on 10 spring mounted PMTs. Assembly of remaining 20 PMTs required to complete qual testing will be completed tomorrow.**
- **Completed Spare/Qual Electronics Chassis functional testing.**
- **Made significant progress on writing the test scripts required for EMI testing, but ran into an issue with the EGSE crashing.**
- **Preparing to go to vibration testing with the Electronics Chassis next week instead of EMI testing.**

Near Term Milestones

| Milestone Description | Date | New Date | Status/Notes |
|--|----------------|-----------------|---|
| Complete Flight HVBS | <u>6/30/04</u> | <u>7/30/04</u> | <u>Completed rework required to correct noise problem.</u> |
| Complete Flight FREE Boards | <u>6/30/04</u> | <u>8/15/04</u> | COMPLETE |
| Complete PMT Assembly | January, 2004 | <u>11/05/04</u> | First group completed mid-October. See back up material for more information on PMT issue |
| Complete Qualification Unit Electronics Chassis Assembly | <u>5/20/04</u> | <u>8/6/04</u> | <u>Functional Testing was successfully completed.</u> <u>Currently being prepared for vibration testing.</u> |
| Mechanical Subsystem delivered to I&T | <u>5/17/04</u> | <u>6/1/04</u> | Complete! |
| Complete Flight Mechanical Drawings | September | <u>8/10/04</u> | One assembly drawings remains. Designers have been focused on revisions and Eos. |
| Complete Fab of Clear Fiber Cables | August | <u>8/3/04</u> | <u>Complete!</u> |
| Complete Fab of Flight TDAs | November | <u>8/15/04</u> | <u>Complete</u> |
| Complete installation of 25 top TDAs | 10/15/04 | | |
| Complete vibration testing of Spare/Qual Electronics Chassis | 10/8/04 | | |
| Complete qualification testing of new PMT mounting design | 10/25/04 | | |

Interdependencies

1. **EGSE/G3 – Ongoing development with I&T and Electronics groups.**
 - **Software update issues were resolved this month, but a new issue with data rates was discovered. This is a significant issue and will delay testing of the Electronics Chassis until it is resolved.**
2. **ICD, IDD, etc.**
 - **Mass CR was released and approved in June, but the wrong numbers were shown at the MCDR last week.**
 - **Another IDD (LAT-DS-00309) update has been sent to us for review. This version incorporated the connector location and rotation issues.**
 - **Updated ACD/LAT ICD has been reviewed and approved by ACD Team.**

Issues, Concerns, & Documentation

- **Issues**
 - **PMTs**
 - **EGSE/Electronics Chassis testing**
- **Concerns**
 - **PMTs**
 - **EGSE**
- **Documentation**
 - **CM system works great**
 - **PR/PFR Status**
 - **82 PR's Closed**
 - **2 PFR's Closed**
 - **9 PR's Open**
 - **8 PFR's Open**

ACD Schedule Variances

- **4.1.6 – ACD Subsystem (-\$398K cum, +\$148 current)**
- **4.1.6.4 BEA Schedule Variances (-\$209K cum, +\$151K current)**
 - **All variance is due to the PMTs.**
- **4.1.6.7 ACD I&T (-\$129K cum, -\$28K current)**
 - **Technical issues with instrumentation, TDA's, and fiber ribbons have delayed progress.**
- **4.1.6.B GSE (-\$23K cum, +\$7K current)**
 - **Shipping container and MMS GSE work being pushed out to reduce current manpower.**

ACD Cost Variances

- 4.1.6 ACD (-\$135K cum, +\$330K current period)
- 4.1.6.1 ACD Project Management/Sys Eng/Science (+\$189K cum, +\$20K current period)
 - (+\$151K) - Labor support lower than planned
 - (+\$38K) MPS lower than planned
- 4.1.6.2 Safety and Mission Assurance (-\$12K cum, -\$34K current period)
 - Increase in materials support on PMTs
- 4.1.6.3 Tile Shell Assembly (-\$52K cum, +\$69K current period)
 - Fabrication chargebacks

ACD Cost Variances

- **4.1.6.4 Base Electronics Assembly (-\$289K cum, +\$331K current month)**
- **4.1.6.5 MS/TB (+\$31K cum, +\$17K current month)**
- **4.1.6.6 ACD Mech Qual and Cal Unit (-\$31K cum, -\$1K current month)**
- **4.1.6.7 I&T (-\$50K cum, -\$46K current month)**
- **4.1.6.B Ground Support Equipment (+\$79K cum, -\$26K current month)**

Threats to Schedule and Cost

- 1. PMT Assembly**
- 2. GASU/G3 EGSE**
- 3. Electronics assembly and test**
- 4. Minor Technical Issues that require manpower and time to resolve.**

Actions required to achieve Zero SV

- 1. Resolve PMT mounting issue**
- 2. Resolve GASU/G3 EGSE issues**
- 3. Rebaseline**