Subsystem Mgrs F2F Meeting
Calorimeter Subsystem

11 February 2003
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Naval Research Lab
Outline

- Cost and Schedule Variances and story at the end of March
- Expected liens at the end of March
- Drawing release status and plans for completing by the end of March
- Interdependencies with other subsystems, instrument office, and/or project office.
- Open Flight Design Issues/Status Closure Plan
- Issue/concerns/suggestions/risks
Predicted (Hoped for) status at End of March

- CDE: on or ahead of schedule. Positive cost variation.
- Carbon Structures: about 1 month behind schedule (no SV$). No assy impact – schedule driven by CDEs.
- Pre electronics modules: 1st PEM complete. ~ 1 week behind baseline.
- AFEE Electronics (critical path)
  - ASICs: screening complete; qualification in 1000 hr life test. ~ 2 months behind schedule.
  - AFEE boards in assembly. 1st boards delivered. ~ 3 mo behind schedule.

LIENS: none expected. Overall positive cost variance.
PMCS Critical Path
Protoflight Module (FMA)

Dual PIN Photodiode
NRL 12/03/03

Crystal Detector Elements (CDE)
NRL/Swales 2/09/04 (59)

Pre Electronics Module
NRL 03/25/04 (54)

CAL Module
NRL 05/10/04 (42)

Calibration Environmental Test
NRL 07/09/04 (40)

Ready for Integration (RFI)
07/30/04 (40) [BL: 07/09/04 (55)]

Analog Front End Electronics (AFEE)
NRL 04/15/04 (41)

Other EEE parts Parts
Qual/Screen NRL 03/08/04 (41)

PCB NRL 03/02/04 (48)

ASICS SLAC, NRL 02/13/04 (43)

Critical Path in Red
Secondary in Blue

Carbon Composite Structure
Al base, closeouts, plastic parts
LLR/Ecole Polytechnique, NRL 02/20/04 (54)

Nrl
12/03/03

NRL
03/25/04 (54)

07/09/04 (40)

03/25/04 (54)

05/10/04 (42)

04/15/04 (41)

03/08/04 (41)

03/02/04 (48)

02/13/04 (43)

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Sweden

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03/02/04 (48)
Risks to FM A Delivery

- EEE Parts
  - ASIC delivery – should happen today.
  - Ability to execute functional testing and thermal sampling of GCFE in scheduled time.
    - Equipment and personnel to operate 7-8 test GSE are standing by.
    - Thermal forcing unit installed today.
    - Will it work, can we keep it organized and controlled.
  - Radiation Testing issues
    - More tests in February at BNL – key personnel are over scheduled.

- AFEE Assembly
  - Verify redesign of AFEE layout.
    - Errors/problems w/ prototype boards need to be corrected and flight production initiated.
    - Need to get board assembly vendor under contract and working to our schedule and requirements. Nick is meeting w/ selected vendor today to (hopefully) resolve all issues, agree to schedule, and obtain revised quote.
### Drawing Release Summary

**GLAST Calorimeter**

**LAT F2F Meeting**

**11 Feb 2004**

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#### Flight Hardware Drawings

<table>
<thead>
<tr>
<th>Element</th>
<th>Total Dwgs</th>
<th>Completed Dwgs</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDE</td>
<td>6</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>AFEE</td>
<td>10</td>
<td>4</td>
<td>Schematics, Assy Dwgs, Parts Lists, Released after completion of prototype testing</td>
</tr>
<tr>
<td>Structure</td>
<td>20</td>
<td>18</td>
<td>Revised module assembly drawing; design AFEE-TEM cable shield.</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>36</strong></td>
<td><strong>28</strong></td>
<td><strong>78% Complete</strong></td>
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All flight hardware drawings will be released by end of March.

**Total Drawings – Flight hardware + fab tooling and GSE**

- Identified: 141
- Completed: 112 (79%)
Interdependencies with other LAT components

- Resolve CAL EMI/EMC test requirements and configuration.
  - Need better definition of test configuration and specs for CAL subsystem EMI/EMC testing.
- TEM and PS (EM2) that support CAL assembly and test schedule.
  - Still need to resolve difference in quantity needed and quantity provided.
  - First deliveries have to be transitioned to flt module environmental test support
- CAL deliveries to LAT I&T
  - Agree on logistics and content of configured item acceptance data package.
- Mini-EM
  - Did you get it?
  - We need the shipping container back or EM CAL can’t leave NRL.
Open Design /EM /Manufacturing Issues

EMI/EMC performance

- Outstanding issues are closing holes thru base plate around AFEE-TEM cable and getting good shield on cable. Closed by end of March.
- Design of aluminum cable shield is not complete. Closed by end of March.
- EM testing failed EMI/EMC specs for CAL. Will not be able to test design changes until FMA. Still need testable spec and test configuration.