

SPIRE-ALC-MHO-002098

Progress/Status

Eric Sawyer

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progress/status report SPIRE 1



AVM

• No update from last telecon

CQM

Cold Qualification model

- Following cold vibration Test campaign at CSL
- Full post test visual inspection shows no damage
- Cooler has been returned to CEA for checkout, no loss of performance. A test report is available.
- Modifications to internal thermal interfaces on the detector boxes has been initiated, design complete, parts manufactured, currently being annealed, then gold plating, then assembly.
- This delays start of next cold test until end of July
- November delivery to Spacecraft is ok.



2K inter-box strap

- High Delta T recorded during cold test
- Strap redesigned to improve performance
- Large area bonded copper to aluminium joints
- This doubles up as electrical isolation joints as well
- Bolted copper to copper joints
- Design complete, parts manufactured, currently being annealed, then gold plating, then assembly.



L0 straps

- Prototypes made and qualified mechanically during CSL cold vibration test
- Tests on copper samples show poor performance of thin sections
- Annealing improved results but not enough
- Other sources being explored, (Advent, Schlenk) and samples obtained.
- Annealing today, then conductance testing.



L0 straps







RAL

CFRP feet

- Detector box and FPU test units manufactured and tested
- All cold strength tested
- All passed except FPU cone
- Broke below estimated load at bolt cone interface
- Some redesign required.
- All other released for manufacture.





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Warm electronics

- Release for FM manufacture
- No outstanding technical issues.
- CEA delay in QM2 delivery (4-6 weeks)



PFM

- Structure manufactured, except CFRP legs and L0 straps
- Cooler In manufacture, delivery September which will delay PFM
- DRCU FM manufacture initiated some delays
- SMEC CQM in assembly and test, delivery in July
- Mirrors –delivered
- BDA SSW delivered, SLW ready to send
- Photometer BDAs late may cause delay in PFM2 build
- DPU Status uncertain
- Calibrators, filters SCAL and filters ready, PCAL in test,.
- BSM Built, some problems with range, FM will be delivered as is, FS will be fitted with new magnets and swapped out later.
- PFM FPU Mirror mounts integrated, metrology done.
- Alignment started 7th June, finished this week.



AIV

- CQM tests phase 1 complete
- Test facility being readied for next phase
- New He level sensor and 'manostat' fitted
- Phase 2 to start end July

schedule

Milestones.

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- CQM build complete 5/12/03 Complete
- CQM cold verification 1 start 31/01/04 Complete
- Cold vibration end 28/4/04 completed 8/5/04
- CQM Ready for delivery November with DRCU QM1 (temp)
- DRCU (QM1) required for FM programme.
- FM delivery October 05 with QM2 electronics, delay of 6 weeks
- FM DRCU delivery to spacecraft Nov 05

BDA deliveries

- Technical problems at JPL
- Vibration failures on JFETs, traced to workmanship issues.
- New procedures implemented
- Spectrometer JFETs (PFM1) Sept 04
- Photometer JFETs (PFM2) Nov 04
- Photometer BDAs (PFM2) Dec 04

Interface meeting

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| | | 03 | | | | 2 | 2004 | | | | 2 | 2005 | 20 |
|-----|---|----|-----------------|----------|--------|--------|---------|----------|----------|-------------------|--------|-------------------------|----|
| D | Task Name | F | MAMJ | JA | SON | D | J F M A | MJ | JA | SONI | D, | J F M A M J J A S O N I | DJ |
| 1 | SM AIV programme | | \wedge | | | | | | | | | | |
| 53 | AM programme | | \wedge | \sim | | | | | | | | | |
| 89 | AVM programme | | $\wedge \wedge$ | | | | | | | | | | |
| 91 | Warm electronics programme | | | | | | | | | | | | |
| 95 | CQM programme | | / | | | | | | | \sim | | | |
| 96 | STM/CQM FTB Subsystem Deliveries | | / | | \sim | | | | | | | | |
| 102 | Preparation of CQM | | | \frown | | | | | | | | | |
| 139 | CQM Cold Verification 1 | | | | | \sim | \sim | | | | | | |
| 155 | CQM Cold Vibration | | | | | | \sim | \land | | | | | |
| 165 | CQM Cold Verification 2 | | | | | | | \wedge | | \sim | | | |
| 176 | Update QM1 DRCU | | | | | | | | | | | | |
| 179 | CQM activities before delivery | | | | | | | | | \wedge | | | |
| 183 | Delivery to ESA FPU and DRCU | | | | | | | | | \sim | | | |
| 187 | PFM AIV programme | | | | | | | | | | | \sim | |
| 188 | CQM/PFM FPU Subsystem Deliveries | | | | | \sim | | | $ \land$ | | | | |
| 211 | PFM JFET Deliveries | | | | | | | | | \wedge \wedge | | | |
| 216 | PFM JFET Integration | | | | | | | | | \sim | | | |
| 218 | FPU integration phase 1 | | | | | | | | | | | | |
| 235 | Warm electronics Deliveries | | | | | | | 11 | \sim | | | | |
| 238 | QM1 Warm Electronics re Integration | | | | | | | | | $\sim\sim$ | | | |
| 241 | Instrument integration and test phase 1 | | | | | | | | | | | | |
| 257 | QM1 DRCU available for CQM delivery | | | | | | | | | K | | | |
| 259 | FPUintegration phase 2 | | | | | | | | | | | | |
| 266 | Delivery of DRCU QM2 | | | | | | | | | | | \bigcirc | |
| 268 | Delivery of FM DPU | | | | | | | | | 2 | \sim | | |
| 270 | Instrument integration and test phase 2 | | | | | | | | | | | \sim | |
| 273 | PFM Verification | | | | | | | | | | | | |
| 308 | Delivery of PFM to ESA | | | | | | | | | | | \diamond | |
| 309 | Delivery of warm electronics to ESA | | | | | | | | | | | \sim | |

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