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| SPIRE (ATC) | Monthly Report – Jul & Aug 2002 | Date: 26.Aug.02 |
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Work Package: BSM

SPIRE-ATC-REP-001414

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|---|---------------|---|--------|-----------|
| 1. Subsystem Progress Since Project Inception | | | | |
| Baseline design accepted at Delta-PDR, including digital electronics control by MCU. CPP parts requested. Single axis prototyping complete. DDR held. 2 axis prototype tests complete. IBDR complete. Development Model testing | | | | |
| 2. Subsystem Progress This Month | | | | |
| Completed re-work DM-1 as the STM/OGSE. Preparing ADP this week. DM-2 components all complete and assembly pending some small wiring changes being reviewed. Quotations received from Zeiss/PACS on motor coil order. Received WE EM from LAM, making mating connectors for tests. | | | | |
| 3. Problem Areas | | Remedial Action | | |
| <ul style="list-style-type: none"> • Full checks on repeatability/linearity in dewar to be achieved • Launch Latch relocated on design and problem noted with DM-2 motor wiring. • Zeiss motor quotation above budget price. • Wiring layout and specification TBC. | | <ul style="list-style-type: none"> • high efficiency anti-reflection coating window received and tested warm. Will test further in conjunction with DM-2. • Change to proposed ATC mounting in hand - will need to tie up with LAM. Option may be to delete launch latch if not required. • Looking at budget and options to use fewer motor coils. • Scheme for wiring mocked up on rapid prototype - need to fold in actual wire types being selected by RAL. | | |
| 4. Engineering Activities | | | | |
| Sensors tested, thermally cycled and selected for DM-2. Zeiss motors fitted to DM-2 coils and flying lead wiring details confirmed. STM assembly completed, including fitting of thermometry and simulation resistors. Measurement of mass and design/manufacture of corrective ballast to bring unit up to full flight mass/CoG completed. Rapid prototype used to enable iterative wiring harness layout. | | | | |
| 5. Design Changes | | | | |
| STM assembly and ICD configured drawings complete. DM-2 drawing set and flight type ICD completed. Minor hole changes to accommodate wiring tie downs. Major issues with routing wiring on the BSM, due to excessive diameter and bend radii of PTFE jackets has lead to a proposal to delete jackets/screens from non-EMC sensitive wiring on the local BSM routing (retention only on sensor lines). This will be carefully reviewed with the RAL team. As a smaller nominal diameter wire (30AWG) is being sourced than the BSM IBDR (28AWG) baseline there should be some scope to re-adopt screens on some wires, e.g. motors. | | | | |
| 6. PA/QA Activities | | | | |
| General lab cleanliness remains within broad targets, facility funding obtained for changes to ventilation also obtained - work scheduled in autumn '02 . A failure of a screw during re-assembly of the STM has been investigated: there is an issue with retaining pre-load when at cryogenic temperatures which needs to be balanced against low cycle high strain fatigue. | | | | |
| 7. Subsystem Management Issues | | | | |
| Funding for motors. Late delivery of PCAL STM dummy will require integration at RAL, not ATC. SPIE paper submitted. | | | | |
| 8. Actions Requiring Immediate Attention | | | | |
| IP/D.Griffin : ATC Need MSSL definition of harness run and back-shells to procure harness via RAL. ... ongoing IP Configured Items Data List is required ... ongoing SW11MAR02.02 IP Place contract for Zeiss motors ... ongoing. Price received but > budget.+ | | | | |
| 9. Status of Previous Actions | | | | |
| As noted | | | | |
| 10. Activities Yet to be Achieved | | | | |
| 11. Milestones | | | | |
| | Status | | | |
| Milestone | Baseline | Scheduled | Actual | Change |
| 20K test dewar available | N/A | May.02 | | |
| Integrate Prototype (in place of DM 2) to LAM | 30 Mar 01 | Apr.02 | | |
| DM release for manufacture | Oct.01 | Nov.01 | Dec.01 | |
| DM-2 release for manufacture | N/A | Apr.02 | Apr.02 | |
| 2 axis prototyping at ATC complete | N/A | Mar.02 | Apr.02 | |
| SPIRE IBDR | N/A | Mar.02 | Mar.02 | |
| DM-2 tests complete | 30.Apr 02 | 18.Sep.02 | | + 2 weeks |
| BSM STM del'y to RAL | 01 Feb 00 | 31 Aug 02 | | +1 month |

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| BSM CQM delivery to LAM | Jul.02 | 16.Oct.02 | | |
| BSM CQM del'y to RAL | 13 Mar 02 | Jan.03 | | |
| BSM QM tests complete (flight design valid) | 25.Apr.03 | 10.Jun.03 | | |
| BSM PFM delivery to LAM | 03.Jun 03 | 25.Aug.03 | | |