

## **1. SPIRE PROJECT**

### **1.1 General**

- This report covers July and August 2002
- Project team has focussed on
  - STM/CQM AIV planning
  - Instrument vibration level assessment
  - Thermal modelling
  - Instrument grounding scheme

### **1.2 Instrument performance**

- No changes

### **1.3 Problem Areas**

- Qualification vibration levels
- Thermal design

### **1.4 Project-Level Meetings**

- Several project team meetings
- 300mK strap DDR 10/7/02
- Consortium meeting Rome 16 and 17/7/02
- Interface meeting Alcatel/Astrium/ESA 23 and 24/7/02
- Progress meeting at LAM 25 and 26/7/02
- Regular telecons with sub systems

### **1.5 Documents Issued**

- Harness Definition Document

## **2. INSTRUMENT MANAGEMENT**

### **2.1 Personnel**

No Change

### **2.2 Work packages**

No changes.

### **2.3 Schedule**

SPIRE schedule inline with delivery dates announced 2/6/02

### **2.4 Funding**

- The UK funding envelope is still inadequate fore the hardware plus ICC development programme. Pressure still exists to descope hardware (BSM or Flight Spare). Project management costs must be reduced.
- Funding within JPL is a problem and is considered likely to have an impact on deliverables and/or schedule.

<b>SPIRE</b>	<b>Monthly Report to Alcatel/ESA</b> <b>August 2002</b>	SPIRE-RAL- REP-001437  Date: 25/9/02
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### 3. INSTRUMENT ENGINEERING

#### 3.1 Instrument Design Changes

- Modification required to cold straps.
- Foot modified to avoid interference with PACS.
- Shutter deleted

#### 3.2 PA/QA

- On going

#### 3.3 Budgets

- Mass of warm electronics close to maximum.

### 4. INSTRUMENT SUBSYSTEMS

Subsystem	Responsible	Status	Schedule status
BSM	ATC	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.	OK
Calibrators	Cardiff	PCAL STM and CQM parts in manufacture SCAL STM and CQM components in manufacture	OK
Cooler	SBT	CQM units : Mounting of thermometers and heaters almost done. CQM under cleanliness and contamination control. - Heat switches : awaiting for subcontractor availability for heat switches assembly. - Structures : new solution for anchoring protecting tubes (guides for PACS screws) being studied – slight machining on structures probably needed. - Kevlar characterisation campaign : continue. Unexpected creep (?) detected during multiple cycles between room T and LN2 is still under investigation – new test set-up being designed. - Solution for the electrical isolation identified – being implemented in the design. New parts under manufacturing and modification of existing components in progress.	OK
Detectors, JFETS and RF Filters	JPL	Failure of BDA during cold vibration test is under review, frequency shift not understood. Relaxation of input spectrum under discussion.	OK, but under review
DPU and OBS	IFSI	After the ESA meeting on 19th of June and ESA statement to pay all CPPA components the ICC funding problem for years 2004-2006 looks to be relieved.  We are still waiting for a formal ESA document in order to define activities with ASI about the available FM components money.  The FPGA hardware bug, that was giving random errors in the DPU analogue channels reading, has been amended. A new FPGA was tested and found performing well.	OK
DRCU and WIH	SAP	DCU	Being

		<ul style="list-style-type: none"> <li>➤ DAQ+IF test completed</li> <li>➤ BIAS board test performed</li> </ul> <p>SCU</p> <ul style="list-style-type: none"> <li>➤ HSK function study</li> <li>➤ SCU logic function study finalisation</li> <li>➤ QM1 back plane scheme finalisation</li> <li>➤ QM1 temperature board scheme achievement, PCB layout finalisation</li> <li>➤ QM1 CCHKiF board scheme finalisation</li> <li>➤ Analog port software primitive</li> <li>➤ Test board analog port</li> <li>➤ Test plan writing</li> </ul> <p>MCU</p> <ul style="list-style-type: none"> <li>➤ Design available at LAM &amp; SAp</li> <li>➤ MCU QM1 delivery to SAp confirmed 12/12/2002.</li> </ul> <p>PSU</p> <p>Little progress because of lack of I/F specification (grounding scheme).</p> <p>Enclosures</p> <p>DCU STM fabrication started.</p> <p>DCU QM1 &amp; FCU QM1 box fabrication started</p> <p>FCU box thermal &amp; dynamic studies.</p>	optimised
DRCU simulator Inst simulator	Stockholm		OK
Filters, Dichroics	Cardiff	SPIRE STM filters (CFIL1, PFIL2, SFIL2) in manufacture CQM 300mK filters in manufacture (SSW, SLW, PLW) Manufacturing order placed for 300mK filter clamps for all SPIRE models through to FS.	OK
Mirrors	LAM	In manufacture	OK
Shutter	USK	Deleted	OK
Spectrometer Mechanism	LAM	STM in manufacture	OK
Structure	MSSL	Subsystem interfaces for RF filters and SMEC are frozen by the structure. MGSE production has been completed and awaiting HOB simulator before assembly – This is due mid September. Production of the photometer 2K box spine and covers is still continuing, though the cover walls have been completed. The manufacture of the light traps have been completed. The redesign of SCAL box is still being debated. Spectrometer 2K Detector box is still in manufacture. Optical Bench drawing has been released and is in manufacture. Main FPU mounts and detector box mounts have been released and are in manufacture. Continuing to have integration team meetings with RAL, to address planning and integration issues. Analysis reports completed.	Critical path for STM
Thermal straps	MSSL, Cardiff	. Thermal busbar development has started. Production drawings are still in progress. Awaiting Cardiff to send MKIII units for testing so that the FEA can be completed in early September	OK
AIV/Calibration facility	RAL	Test cryostat due for delivery end October 2002	OK

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**5. INSTRUMENT AIV**

- A detailed AIT procedure is being developed

**6. ACTIONS.**

See action list attached to minutes HP-ASPII-MN-1725