



| | | |
|---|---|--|
|  | CEA/Sap July 2002 Status and Progress Report |  SAp-FIRST-DR-0172-02 H0501 31/07/2002 Page 1/7 |
|---|---|--|

| Management & System | | | | |
|---|--|------------------|---|-----------------|
| Meetings | | | | |
| 05/07 | FSE internal meeting, coordination , needed FSE to be studied & developed | | | |
| 12/07 | SPIRE Grounding Telecon | | | |
| 15/07 | SPIRE Grounding Telecon | | | |
| 18/07 | SPIRE Grounding Telecon | | | |
| Management act. | | | | |
| Project control | <ul style="list-style-type: none"> ➤ SPIRE master schedule updated. ➤ DCU EM QM1 detailed schedule. ➤ SPIRE FPU simulator detailed schedule update. ➤ Action list update. ➤ SPIRE reporting. | | | |
| DRCU/DDR | ➤ Documentation sent on July 2 nd | | | |
| SAP / JPL | <ul style="list-style-type: none"> ➤ F. Pinsard stay at Caltech : <ul style="list-style-type: none"> • 11/04 to 10/06: DAQ IF + board test • 24/06 to 12/07: BIAS board test • 29/07 to 15/08: LIA-P • 02/09 to 08/10: LIA-S test board + functional system test + performance system test | | | |
| Cooler harness procurement | ➤ STM & CQM cooler harness will be procured via Tekdata. Order will be placed as soon as Specification will be available from RAL. | | | |
| Team | ➤ Françoise Loubère moved to a private company. Philippe Lavocat will take over the QA management responsibilities until a new QA responsible would be appointed. | | | |
| 2. Problem Areas | | | Remedial Actions | |
| ➤ Lack of agreement on the Grounding scheme approach could impact both DRCU design and delay. | | | ➤ A dedicated review is going to be held in September. | |
| ➤ Potential risk on DRCU FM delivery: Grounding scheme issue prevents (among else) to send out the PSU call for tender. | | | ➤ See DRCU workpackage section. | |
| ➤ 1 month delay on QM1 delivery mainly due to DCU development schedule slippage. | | | ➤ None. Minor issue compared to the grounding scheme one. | |
| 3. Actions | | | | |
| Still Opened | | | | |
| Ref. | Meeting | Actionnee | Due date | Action |
| / | / | / | / | / |
| Closed | | | | |
| Ref. | Meeting | Actionnee | Due date | Action |
| / | / | / | / | / |
| 4. Project Milestones | | | | |
| <i>Main Delivery Milestones</i> | | | Resp. | Baseline |
| DRCU QM1 delivery to RAL | | | SAp | 03/03/2003 |
| FPU Simulator (version 1) delivery to RAL | | | SAp | 03/03/2003 |
| DRCU QM2 delivery to RAL | | | SAp | 05/01/2004 |
| DRCU FM delivery to RAL | | | SAp | 30/07/2004 |
| | | | | Current |
| | | | | 04/04/03 |
| | | | | 04/04/03 |
| | | | | 05/01/2004 |
| | | | | 30/07/2004 |

| DRCU | |
|----------------|---|
| DCU/QM1 | Status |
| | <ul style="list-style-type: none"> ➤ DAQ IF <ul style="list-style-type: none"> • 2 test boards available at JPL • Test completed. ➤ BIAS <ul style="list-style-type: none"> • Board assembly achieved 29/05 • Board test performed ➤ LIA-P <ul style="list-style-type: none"> • PCB fabrication achieved ➤ LIA-S <ul style="list-style-type: none"> • PCB fabrication achieve ➤ Back-Planes <ul style="list-style-type: none"> • Functional test backplane built. ➤ Test plan <ul style="list-style-type: none"> • Test plans: LIA-P, LIA-S, BIAS, DAQ-IF available in draft form. • Functional test plan: writing in progress. |
| | Progress of the month |
| | <ul style="list-style-type: none"> ➤ DAQ+IF test completed ➤ BIAS board test performed |
| SCU/QM1 | Status |
| | <ul style="list-style-type: none"> ➤ Heaters: prototype test achieved. ➤ Temperature sensors: test successful ➤ DPU I/F command and data I/F achieved. ➤ Analog port study achievement, software primitive study in progress. ➤ Test board analog port study in progress. ➤ SCU Documentation <ul style="list-style-type: none"> • Draft Specification and preliminary (H/W & VHDL) design available. • Draft DPU/SCU ICD issued. • Test plan writing in progress ➤ Functions <ul style="list-style-type: none"> • <u>Heater & temperature</u>: implementation achieved • <u>Calibrator</u>: implementation achieved. • <u>HSK</u>: prototype board in fabrication, 2 people were added for a few month's to study it, the test software and a FPGA to convert different communication protocols. • <u>SCU logic (pinout)</u>: study achieved • <u>SCU logic (logic)</u>: study in finalisation ➤ Boards <ul style="list-style-type: none"> • <u>Temperature</u>: design PCB achieved. PCB layout in finalisation. • <u>Cchkif</u>: design PCB achieved. Board scheme finalisation. • <u>Back plane</u>: design PCB in finalisation. |
| | Progress of the month |
| | <ul style="list-style-type: none"> ➤ HSK function study ➤ SCU logic function study finalisation ➤ QM1 back plane scheme finalisation ➤ QM1 temperature board scheme achievement, PCB layout finalisation ➤ QM1 CCHKiF board scheme finalisation ➤ Analog port software primitive ➤ Test board analog port ➤ Test plan writing |

| | | |
|---|---|--|
| MCU I/F | Status | |
| | <ul style="list-style-type: none"> ➤ Design available at LAM & SAp ➤ MCU QM1 delivery to SAp confirmed 12/12/2002. | |
| | Progress of the month | |
| Work in progress | | |
| PSU | Status | |
| | <ul style="list-style-type: none"> ➤ Separated power bench will be used for QM1 and QM2. ➤ Draft Specification available. ➤ Call for tender process stuck ➤ Contractual specification writing stuck ➤ Wait for S/C I/F to continue...See problem area. | |
| | Progress of the month | |
| Little because of lack of I/F specification (grounding scheme). | | |
| DRCU Boxes | Status | |
| | <ul style="list-style-type: none"> ➤ Modeling completed. ➤ DCU board front panel design achieved <p>DCU Box.</p> <ul style="list-style-type: none"> • <u>STM</u>: detailed design achieved, fabrication in progress. • <u>QM1</u>: detailed design update achieved, fabrication in progress • <u>QM2 & FM</u>: I/F available. <p>FCU Box.</p> <ul style="list-style-type: none"> • <u>STM</u>: detailed design achieved, ready for fabrication. • <u>QM1</u>: detailed design achieved, fabrication in progress. Thermal & dynamic studies in progress • <u>QM2 & FM</u>: I/F available | |
| | Progress of the month | |
| DCU STM fabrication started. DCU QM1 & FCU QM1 box fabrication started FCU box thermal & dynamic studies. | | |

| Test Equipments & others | |
|--------------------------|---|
| LTU #1 | Status |
| | <ul style="list-style-type: none"> ➤ <u>Specifications</u>: available (see documentation). ➤ <u>Hardware & software architecture definition</u>: near to completion. ➤ <u>Software development</u>: in progress. ➤ <u>Software procurement</u>: in progress ➤ <u>Hardware procurement</u>: in progress. ➤ <u>Power bench</u>: specification writing in progress. |
| | Progress of the month |
| | <ul style="list-style-type: none"> ➤ Software procurement (call for tender...) ➤ Soft development. |
| FPU Simulator #1 | Status |
| | <ul style="list-style-type: none"> ➤ Specification available ➤ Electronics prototyping ongoing ➤ S/W evaluation on going ➤ Rack study in progress. <p>PXI TRIG IO</p> <ul style="list-style-type: none"> • Hardware test achieved. Second fabrication achieved. VHDL update achieved. <p>PXI BOLO SPIRE</p> <ul style="list-style-type: none"> • Electronic & design Achieved. VHDL soft studies. Test software specification writing achieved. Test board configuration study & realisation achieved. Functional test achieved. <p>PXI heater/Supply</p> <ul style="list-style-type: none"> • Design achieved. Manufacturing file ritten. Test software specifications achieved. Test board configuration study & realization achieved. Onboard VHDL software study achieved. • PXI part fabrication started week 21 (sub-contractor SPCI & ERTE). <p>PXI Cernox DC & AC</p> <ul style="list-style-type: none"> • Analogue studies & design achieved. Complementary tests achieved. Manufacturing file writing achieved, Test software specifications achieved. Test board configuration study & realisation achieved. • Onboard VHDL software study over at 50%. PXI part fabrication started week 21 (sub-contractor SPCI & ERTE). <p>Software</p> <ul style="list-style-type: none"> • Supervision software specification writing. Output & input file configuration specification writing. PXI BOLO SPIRE, PXI HEATER / SUPPLY, PXI CERNOX, PXI TRIGGER IO test software development achieved. |
| | Progress of the month |
| | No progress report available due to vacation period. |

| | | |
|-------------------------|---|--|
| Part procurement | Status | |
| | <ul style="list-style-type: none"> ➤ Declared components list update: edition 13 ➤ OP400 qualification review 12/02/02. Fabrication started. ➤ Harnesses connector estimation carried out. ➤ ATP update with Technologica | |
| | Progress of the month | |
| Harness | Status | |
| | <ul style="list-style-type: none"> ➤ Test Harness configuration scheme available ➤ Connectors procurement on going | |
| | Progress of the month | |
| Containers | Status | |
| | <ul style="list-style-type: none"> ➤ Specification available. | |
| | Progress of the month | |
| AIV | Status | |
| | <ul style="list-style-type: none"> ➤ DRCU development tree available (last version 30/11/2001) ➤ Board Test plan writing in progress. ➤ DRCU AIV plan in progress. | |
| | Progress of the month | |
| PA/QA | Status | |
| | <ul style="list-style-type: none"> ➤ DML and DPL draft available. ➤ Reference documentation list update on going | |
| | Progress of the month | |
| PA/QA | Status | |
| | <ul style="list-style-type: none"> ➤ DRCU AIV plan writing. | |
| | Progress of the month | |
| PA/QA | Status | |
| | <ul style="list-style-type: none"> ➤ DML and DPL draft available. ➤ Reference documentation list update on going | |
| | Progress of the month | |
| PA/QA | Status | |
| | <ul style="list-style-type: none"> ➤ Updating of the reference document list. ➤ Building of Requirement Cross verification table. ➤ Non conformity management | |
| | Progress of the month | |

| Problem Areas | Remedial Actions | |
|---|-----------------------------|---------------------------|
| Test Harnesses: detailed definition not yet available. Harness procurement could be on the critical path on the short term. | ➤ Priority will be defined. | |
| Milestones | | Status |
| DCU EM QM1 delivery to SAp from JPL | 06/11/2002 | Delayed by 1 month |
| DRCU QM1 harnesses need date | 06/11/2002 | On schedule |
| LTU DRCU need date | 06/11/2002 | On schedule |
| SPIRE FPU simulator #1 need date delivery to SAp | 06/11/2002 | Delayed by 1 month |
| Detector test cryostat delivery to SAp by JPL | 25/11/2002 | On schedule |
| MCU QM1 + simulator need date delivery to SAp | 10/12/2002 | On schedule |
| SCU QM1 delivery by SEDI need date | 24/12/2002 | On schedule |
| DRCU QM1 delivery to RAL | 03/03/2003 | Delayed by 1 month |
| SPIRE FPU simulator #2 need date | 28/07/2003 | On schedule |
| SCU QM2 need date | 27/08/2003 | On schedule |
| MCU QM2 delivery to SAp need date | 27/08/2003 | On schedule |
| DRCU QM2 delivery to RAL | 05/01/2004 | On schedule |
| MCU FM delivery to SAp need date | 26/04/2004 | On schedule |
| SCU FM need date | 05/05/2004 | On schedule |
| DRCU FM ready for delivery to RAL | 30/07/2004 | On schedule |

| Documentation progress this month | | |
|-----------------------------------|-----------|----------|
| Title | Reference | Progress |
| None this month | | |

| Documentation List | | | |
|---|-------------------------|-------------------|----------------|
| Title | Reference | Version, date | |
| Reference documentation | | | |
| ➤ SPIRE Instrument Development Plan IIDR | / | Issue 1.1 | 12/4/2001 IIDR |
| ➤ SPIRE Major Milestone List issue 1.3 IIDR | SPIRE-RAL-PRJ-000455 | Issue 1.3 | |
| ➤ SPIRE Instrument Requirements | 34 | Issue 1.0 | 23/11/00 |
| ➤ SPIRE System Budget | / | Issue 3.4 | 24/07/2001 |
| ➤ Cryo-cooler Control Specification | / | / | |
| ➤ Calibrator SSSD: SCAL | HSO-CDF-SP-001 | Issue 1.0 | 10/9/2001 |
| ➤ Calibrator SSSD : PCAL | HSO-CDF-SP-003 | Issue 1.0 | 11/9/2001 |
| ➤ Detector SSSD | / | Issue 3.1 – draft | |
| ➤ Shutter SSSD | Not yet | / | |
| ➤ Instrument Interface Document part A | SCI-PT-IIDA-04624 | 3.0 | 01/07/2002 |
| ➤ Instrument Interface Document part B SPIRE | SCI-PT-IIDB/SPIRE-02124 | 2.0, | 31/07/2001 |
| ➤ SPIRE configurable document tree | SPIRE-RAL-PRJ-00033 | 3.1 | 03/05/2001 |
| ➤ SPIRE product tree | SPIRE-RAL-PRJ-00455 | 1.0 | 09/11/1999 |
| ➤ SPIRE instrument development plan | SPIRE-RAL-PRJ-0035 | 1.0 | 20/05/2000 |
| ➤ SPIRE management plan | SPIRE-RAL-PRJ-00029 | | 01/01/2001 |
| ➤ SPIRE Data ICD | SPIRE-RAL-DOC-001078 | 1.0 draft1 | 15/01/2002 |
| ➤ SPIRE instrument AIV plan | SPIRE-RAL-PRJ-000410 | 2.1 | 29/03/2001 |
| Management | | | |
| ➤ Management plan for the Herschel project. | SAp-FIRST-JLA-0038-01 | 3.0 | 23/11/2001 |
| ➤ Actions list | SAp-FIRST-DR-0050-01 | | |
| ➤ DRCU & WIH Development Plan | SAp-SPIRE-JLA-0047-01 | 3.0 | 27/11/2001 |
| ➤ SPIRE product tree | SAp-FIRST-DR-0071-02 | 1.2 | |
| ➤ WBS Herschel | SAP-FIRST-DR-0043-01 | 2.1 | |
| ➤ WBS SPIRE | SAP-FIRST-DR-0045-01 | 2.1 | |
| ➤ SPIRE master schedule | SAp-SPIRE-DR-0053-02 | 3.1 | 31/07/2002 |
| ➤ DCU EM QM1 at JPL detailed schedule | SAP-FIRST-DR-0050-01 | 4.6 | 31/07/2002 |
| ➤ SPIRE FPU simulator detailed schedule | SIG-FIRST-PdA-0052-01 | 12.0 | 31/07/2002 |
| ➤ SCU QM1 detailed schedule | SEI-SPIRE-MM-0049-01 | 1.0 | 31/07/2002 |
| ➤ LTU & power bench detailed schedule | SAp-FIRST-DR-0069-02 | 2.7 | 31/07/2002 |
| DRCU | | | |
| ➤ DRCU Specifications document | SAp-SPIRE-Cca-0025-00 | Issue 0.92 | 26/06/2002 |
| ➤ DRCU Development Tree | H0030 | | 30/11/2001 |
| ➤ DRCU ICD | SAp-SPIRE-Cca-0075-02 | 0.7 | 26/06/2002 |
| ➤ DRCU DPU ICD | SAp-SPIRE-Cca-0076-02 | 0.7 | 26/06/2002 |
| ➤ DCU design document | SAp-SPIRE-FP-0063-02 | 0.2 | 05/07/2002 |
| ➤ Test plan DAQ IF | SAp-SPIRE-FP-0067-02 | 0.1 draft | |
| ➤ Test plan BIAS | SAp-SPIRE-FP-0066-02 | 0.1 draft | |
| ➤ Test plan LIA P | SAp-SPIRE-FP-0064-02 | 0.1 draft | |
| ➤ Test plan LIA S | SAp-SPIRE-FP-0065-02 | 0.1 draft | |
| ➤ SPIRE test configuration, | SAp-SPIRE-LD-0015-01 | 3.0 | 08/2001 |
| ➤ FPU simulator specifications for DCU / SCU test | SIG-SPIRE-PdA-0030-01 | | 19/03/2001 |
| ➤ SPIRE LTU specifications | SAp-SPIRE-FD-0071-02 | 1.0 | 22/04/2002 |
| QA | | | |
| ➤ Standard product assurance plan | SAp-GERES-Flo-436-00 | 1.0 | 09/11/2000 |
| ➤ SPIRE liste des documents à produire | SAp-SPIRE-Flo-0028-00 | 0.2 | 15/12/2000 |
| ➤ Organisation de la gestion documentaire sur Herschel au SAp | SAp-FIRST-DR-0053-01 | 1.1 | 06/12/2001 |
| ➤ Gestion des documents sur la base Herschel | SAp-FIRST-DR-0072-02 | 1.3 | 15/04/2002 |
| ➤ Procédures de contrôle projet sur Herschel | SAp-FIRST-DR-0125-02 | 1.2 | 13/05/2002 |
| ➤ DRCU FMECA Report | | Issue 1.0 | 25/10/2001 |
| ➤ Analyse de fiabilité du DRCU | SAp-SPIRE-Flo-0039-01 | | 21/08/2001 |
| ➤ DRCU processor board product assurance specification | SAp-SPIRE-Flo-0020-00 | | 10/01/2001 |
| ➤ Plan d'action de l'Assurance Produit du projet Herschel | SAp-FIRST-Abx-0137-02 | Issue 1.1 | 18/06/2002 |