

Draft

OBS Meeting #5 SPIRE-IFS-MOM-000802 Rome, January 11th 2001

Attendance:

O. Bauer, H. Feuchtgruber, S. Pezzuto, A. Di Giorgio, R.Orfei, D. Beintema, P. Roelfsema, K. King, M. Benedetini, L. Dumbledam, S. Molinari, R Cerrulli, C. Codella, P. Saraceno.

1 Adoption of Agenda

Adopted with one additional topic - startup procedure

2 Minutes of last meeting

No comments

2.1 Review of Action Items

| No | Actionee | Action | Due |
|---------|----------------------------------|--|--|
| OBS2-01 | King | to confirm whether SPIRE should be switched off when the hardware watchdog in the DPU is activated. This watchdog always does a cold reset of the software. A facility is now provided to disable the watchdog. This topic will be dicussed later in the section on the startup procedure | 27 th Oct 2000 Now due |
| OBS2-12 | van Leeuwen Bauer King | to provide an Instrument User ICD describing in detail the interface used to command the instrument (Anna will issue a table of contents and scope for the document) Still Open. Anna questioned the contents of this document - to be discussed later under the commanding section | 31 st Dec 2000 Now due |
| OBS3-03 | Bauer van Leeuwen King | to provide an initial DPU Acceptance Test Requirements. Still Open | 30 th Nov 2000 Now due |
| OBS4-01 | Di Giorgio Codella Pezzuto | to issue the latest version of the Logical Model PACS Closed HIFI - Closed SPIRE - Still Open | 27 th Oct 2000 Now due 12th Jan |
| OBS4-02 | Bauer Van Leeuwen King | to comment on the Logical Model PACS - Closed HIFI - Open SPIRE - Open | 10 th Nov 2000 Now due 31st Jan |
| OBS4-03 | Orfei | to elaborate their strategy to handle the discontinuation of the DSP hardware and software development tools IFSI have the tools Support is available for looking at problems with the DSP and ESA can help with Virtuoso. Orfei said there should be no | 11 th Jan 2001 |

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| | | problem Closed | |
| OBS4-04 | Di Giorgio | to specify the PC required to host the OBS development facility when it is at the instrument test site. No dedicated boards are required. Still Open | 11 th Jan 2001 Now due 15 th Jan |
| OBS4-05 | Bauer | to contact project;/ESOC concerning the possible modification of the SCOS2000 OBS management system to suit the FIRST satellite. This is needed by October 2001 Closed - John Dodsworth contacted, but he couldn't say what was HSO specific. He provided information on how SCOS2000 currently implements the OSB management functions. PACS have looked at this and cannot see any reason to change what is there. | 20 th Dec 2000 |

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| OBS5-01 | Bauer | to distribute SCOS information on OBS management | 19 th Jan 2001 |
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| OBS4-06 | Di Giorgio | to specify the hardware and software required for implementation of the OBS maintenance facility. Both for updating software and verification of the new software. Closed - to be presented at this meeting | 11 th Jan 2001 |
| OBS4-07 | King | To add comments on the PA Plan to the end of the minutes of this meeting Closed - | |

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| OBS5-02 | Orfei | to enter the SPIRE comments on the DPU PA Plan into a RID | |
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| OBS4-08 | Di Giorgio | To issue version draft 4 of DPU/ICU OBS PA Plan Closed - version 1.0 issued | 16 Oct 2000 |
| OBS4-09 | Bauer Van Leeuwen King | To comment on the OBS PA Plan Draft 4 Still Open | 30 Oct 2000 Now due 31 st Jan |
| OBS4-10 | Orfei | To update the DPU/ICU Development plan Closed - issued 7 th November | 20 th Oct 2000 |
| OBS4-11 | Bauer Van Leeuwen King | To comment on the DPU/ICU Development plan Still Open | 10 th Nov 2000 Now due 22 nd Jan |

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| OBS5-03 | Orfei | to issue new version of DPU Development Plan | 31 st Jan 2001 |
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| OBS4-12 | Bauer | To check the URD to see if it is affected by | 30 th Oct 2000 |
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| | | the use of bolometers Closed - it is affected - see item 10 at this meeting | |
| OBS4-13 | Di Giorgio | To define a 'Command Execution Service' for the PS-ICD ESA have indicated that they will not allow this - Closed | 20 Oct 2000 |
| OBS4-14 | Bauer | to propose the insertion of the 'Command Execution Service' into the PS-ICD Closed - ESA will not allow this | 3 rd Nov 2000 |
| OBS4-15 | Di Giorgio | to propose a common method for the use of the PUS services identified in the PS-ICD Closed at this meeting | 27 th Oct 2000 |
| OBS4-16 | Bauer | to raise the problem of having to provide an extra connector on the DPU to allow changes to the unit address Closed - there will be no connector - jumpers will be used (or soldered links) | 3 rd Nov 2000 |
| OBS4-17 | Bauer Van Leeuwen King | to provide detailed requirements on the housekeeping and diagnostic data packets – which parameters, maximum rate, timing accuracy etc Still Open | 31 st Dec 2000 Now due 16 th Feb |

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3 IFSI Status report

See viewgraph

Sergio Molinari - will be responsible for organisation of Italian ICC team

There are problems with CGS now that contract has been signed - any changes will be resisted by them, or will incur extra costs or delays.

SPIRE - subsystem interfaces are supposed to be fixed.

4 DPU Tests at IFSI using the EGSE set-up

4.1 Impact of late delivery of DPU/ICU units

PACS need delivery of AVM in December 2000

There was discussion about why the delay of 3 months in the delivery by CGS should delay delivery of models by the same amount to instruments.

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| OBS5-04 | Cerulli | to issue detailed Integration and Test Plan for the DPU. | 2 nd Feb 2001 |
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Delivery date for the EGSE will remain the same

4.2 CDMU Remote Terminal Unit software

Should be contact between SPIRE and IFSI to coordinate questions on the S/C interface.

We should agree a list of questions and the proposed solutions to these. These can then be provided as RIDs to the ESA documentation

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| OBS5-05 | Molinari King | To provide an agreed set of questions on the S/C interface along with proposed solutions to these. These will be presented to ESA at the next CDMS meeting | 26 th Jan 2001 |
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5 Patching with DSP21020/VIRTUOSO and impact on SCOS2000

See viewgraphs

Pezzutto presented a procedure for patching code on board.

If the procedure to copy the patch from data RAM to program RAM fails then the DPU should fail to reboot - indicating that a problem occurred.

EEPROM will be writeable, through an arm-and-fire command, as this function is required during development to allow changes to the software. It will not be disabled for flight.

IFSI have not yet managed to compile a patch and apply it to software (even though another group say it is possible - on ROSETTA). The DPU PROM will provide facilities to upload

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and execute a complete image, so if it proves impossible to implement patching it will still be possible to modify code - albeit inefficiently.

Feuchtgruber - the PUS Memory Management Service as defined in the PS-ICD does not allow efficient dump of all memory. Also it does not provide for 32 bit addresses.

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| OBS5-06 | Bauer | To distribute information available about the problems found by Feuchtgruber and the replies from Thuerey | 2001 |
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| OBS5-07 | Bauer | To ask for a RID form (electronic) to submit problems with the PS-ICD | 2001 |
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6 OBS Maintenance facility and interface to the FCSS

See viewgraphs

IFSI will remain responsible for all configured versions of the OBS.

IFSI would prefer that they provide all updates to OBS, even during early software development and testing phases. This might imply substantial time at RAL during initial testing phases.

Orfei pointed out that OBS maintenance is difficult with no real instrument to operate. This would be a major problem if no FS instrument were available.

7 OBS PA Plan and Software Development Plan

OBS PA Plan

Development Plan will be updated after comments are received and issued as draft 2 for future agreement.

PACS and HIFI have their DPU/ICU AIV Plan. The detailed integration and test plan should be included in this document. The development plan will need to be updated to take account of this.

8 Common Instrument Commanding Scheme

8.1 Common understanding of PS-ICD

Feuchtgruber: We have been told that we cannot have a new PUS service for HSO, however the current Function Management Service does not correspond to the way we wish to operate the instruments. Is not clear if there is any system in the Ground Segment which expects, or tests for, the 'correct' method of operation.

Agreed that all instruments should be commanded in the same way
Handouts for each instrument show how they intend to use commands

Agreed that all instruments will use Service (8,3) for commanding individual actions by the instrument by defining that during OBS activation all functions are started automatically.

Service (18) will be used for procedure management (for PACS)

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Service (20) could be used for the On-Target Flags - this needs clarification
Service(17) will be used for the 'are you alive?' command

Instruments may not use the same scheme for using the Function ID and the Activity ID in Service (8,3).

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| OBS5-10 | King | To provide document to define SPIRE commands (see di Giorgio handouts) | 9 th Feb2001 |
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8.2 Implementation differences between instruments

Discussed above

9 Housekeeping and Diagnostic Data Collection

PACS have defined their housekeeping packets. The rate is ~0.5 Hz. They may need a higher housekeeping rate from DECMC - they intend to use the diagnostic data service.

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| OBS5-11 | Feuchtgruber | To make a proposal for diagnostic data handling | 29 th Jan 2001 |
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10 Cooler re-cycling (PACS and SPIRE)

PACS could observe during cooler recycling.

There are procedures required for controlling the cooler both during operations and during cooler recycling. These need specifying by both PACS and SPIRE.

11 Startup Procedure

The PROM software needs to be frozen (yesterday!)

PROM and EEPROM are not mapped to program memory - therefore the program needs to be copied to RAM.

Startup Procedure will generate Event Packets if there are errors and then wait for program load commands.

Emergency Program Loader will accept only Memory Load commands (PUS Memory Management Service) - IFSI will ask for waiver on the need to acknowledge reception of these packets.

Note: Booting Procedure included in the handouts is now invalid

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| OBS5-08 | Orfei | To provide the information to be provided to CGS about the DPU/ICU Power on procedure to the instrument teams | 16 th Jan 2001 |
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| OBS5-09 | Dubbedam Bauer King | To approve the DPU/ICU Power on procedure | 19 th Jan 2001 |
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12 Summary of Action Items

13 Next Meetings

OBS #6: 16th April at IFSI

14 AOB

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Actions Remaining at end of Meeting

| No | Actionee | Action | Due |
|----------|------------------------------|---|--|
| OBS2-01 | King | to confirm whether SPIRE should be switched off when the hardware watchdog in the DPU is activated. | 12 th Jan 2001 |
| OBS2-12a | Di Giorgio | to provide an Instrument User ICD describing in detail the interface used to command the instrument (Anna will issue a table of contents and scope for the document) | 22 nd Jan 2001 |
| OBS2-12b | van Leeuwen Bauer King | to provide an Instrument User ICD describing in detail the interface used to command the instrument (Anna will issue a table of contents and scope for the document) | 15 th Feb 2001 (P) 9 th Feb 2001 (H) 2 nd April 2001(S) |
| OBS3-03 | Bauer van Leeuwen King | to provide an initial DPU Acceptance Test Requirements. | 28 th Feb 2001 |
| OBS4-01 | Di Giorgio | to issue the latest version of the Logical Model for SPIRE | 12 th Jan 2001 |
| OBS4-02 | Van Leeuwen King | to comment on the Logical Model | 31 st Jan 2001 |
| OBS4-04 | Di Giorgio | to specify the PC required to host the OBS development facility when it is at the instrument test site. | 15 th Jan 2001 |
| OBS4-09 | Bauer Van Leeuwen King | To comment on the OBS PA Plan Draft 4 | 31 st Jan 2001 |
| OBS4-11 | Bauer Van Leeuwen King | To comment on the DPU/ICU Development plan | 22 nd Jan 2001 |
| OBS4-17 | Bauer Van Leeuwen King | to provide detailed requirements on the housekeeping and diagnostic data packets – which parameters, maximum rate, timing accuracy etc | 16 th Feb 2001 |
| OBS5-01 | Bauer | to distribute SCOS information on OBS management | 19 th Jan 2001 |
| OBS5-02 | Orfei | to enter the SPIRE comments on the DPU PA Plan into a RID | 19 th Jan 2001 |
| OBS5-03 | Orfei | to issue new version of DPU Development Plan | 31 st Jan 2001 |
| OBS5-04 | Cerulli | to issue detailed Integration and Test Plan for the DPU. | 2 nd Feb 2001 |
| OBS5-05 | Molinari King | To provide an agreed set of questions on the S/C interface along with proposed solutions to these. These will be presented to ESA at the next CDMS meeting | 26 th Jan 2001 |
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