

OBS Meeting #6 Rome, July 10-11th 2001

Attendance:

O. Bauer, H. Feuchtgruber, S. Pezzuto, A. Di Giorgio, R.Orfei, K Wafelbakker (10th only), P. Roelfsema, K. King, M. Benedetini, L. Dubbleddam (10th only), S. Molinari, R Cerulli, C. Codella, S. Sidher

Items 1, 2, 3, 10 & parts of 13 were covered on 10th July

1 Adoption of Agenda

Adopted with one additional topic - startup procedure

2 Minutes of last meeting

Date needs changing to January 11th

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.	12 th Jan 2001 Still Open
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 Closed
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) Input received from PACS & HIFI. SPIRE will have a meeting later this month to resolve this	15 th Feb 2001 (P) 9 th Feb 2001 (H) 2 nd April 2001(S) Closed
OBS3-03	Bauer van Leeuwen King	to provide an initial DPU Acceptance Test Requirements.	28 th Feb 2001 Still Open - to be discussed at this meeting
OBS4-01	Di Giorgio	to issue the latest version of the Logical Model for SPIRE	12 th Jan 2001 Closed
OBS4-02	Van Leeuwen King	to comment on the Logical Model	31 st Jan 2001 HIFI - Closed SPIRE - Still Open
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 Still Open
OBS4-09	Bauer Van Leeuwen	To comment on the OBS PA Plan Draft 4	31 st Jan 2001 HIFI -Closed at

	King		their PDR PACS and SPIRE - Still Open
OBS4-11	Bauer Van Leeuwen King	To comment on the DPU/ICU Development plan	22 nd Jan 2001 Closed - new version to be produced - see Action #6-01
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 Closed - normal work from now on
OBS5-01	Bauer	to distribute SCOS information on OBS management	19 th Jan 2001 Closed - everyone knows where to get the information
OBS5-02	Orfei	to enter the SPIRE comments on the DPU PA Plan into a RID	19 th Jan 2001 Closed
OBS5-03	Orfei	to issue new version of DPU Development Plan	31 st Jan 2001 Closed
OBS5-04	Cerulli	to issue detailed Integration and Test Plan for the DPU, including the test plan for the OBS software	2 nd Feb 2001 Still Open Due 31st July
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 Closed
OBS5-06	Bauer	To distribute information available about the problems with the PS_ICD found by Feuchtgruber and the replies from Thuerey	15 th Jan 2001 Closed
OBS5-07	Bauer	To ask for a RID form (electronic) to submit problems with the PS-ICD	15 th Jan 2001 Closed
OBS5-08	Orfei	To provide the information to be provided to CGS about the DPU/ICU Power on procedure to the instrument teams Draft 2 was issued and comments received - draft 3 was then issued	16 th Jan 2001 Closed
OBS5-09	Dubbeddam Bauer King	To approve the DPU/ICU Power on procedure Draft 3 of document has been incorporated into the CGS requirements - this has not been commented on by the instruments	19 th Jan 2001 Still Open - now due 17 th July 2001
OBS5-10	King	To provide document to define SPIRE commands (see di Giorgio handouts)	9 th Feb 2001 Still Open -
OBS5-11	Feuchtgruber	To make a proposal for diagnostic data handling	29 th Jan 2001 Closed
OBS6-01	Orfei	to issue new version of the DPU/ICU Development Plan including the detailed planning of CGS and the AVM	31 st July 2001

3 IFSI Status report

See viewgraphs

Funds for next year from ASI will not be discussed until September. IFSI will use their travel money as a buffer in case the decision from ASI is delayed.

No instrument has agreed yet to the change in DPU/ICU power dissipation requested by CGS, through IFSI, and we are trying to understand the reasons behind the change. This should be discussed at the next CGS progress meeting.

OBS6-02	Di Giorgio, Pezutto, Codella	to issue new version of the Software Specification Document, including the latest logical model and architectural design	31 st August 2001 (SPIRE) 31 st August 2001 (PACS) 31 st July 2001 (HIFI)
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The OBS Architectural Design Review is planned for 28 September, but it seems that prototype coding has already started. There is some question over whether this review is at the right time. It was agreed that a review meeting should be arranged for each instrument before this date, probably in early August.

OBS6-03	King, Bauer, Roelfsema	to arrange Architectural Design meetings between IFSI and their instrument	31 st July 2001
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Molinari was concerned about the amount of travel envisaged for the working meetings during the OBS development phase (HIFI have suggested 1 week of Cerulli and 4 weeks of Codella are required)

4 Naming Conventions

There is a new version of the OIRD containing a new naming convention

Cerrulli presented the naming convention for the OBS code, based on the standard C Style. Roelfsema pointed out that the PA Plan requires justification of the use of global variables and pointers. To use these facilities an SPR will need to be raised.

It was agreed that IFSI will explain this use of these facilities in the Software Specification Document and an SPR will be raised against this. This will be discussed and approved by the CCB (it is TBD who is on this board) in the way prescribed by the IFSI Configuration Control Plan.

5 Startup Sequence

IFSI have circulated draft 3 of the Startup sequence. They are waiting for comments:

OBS6-04	Bauer, King, Rolefsema	to comment on draft3 of the startup sequence note	16 th July 2001
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This has been provided to CGS as an applicable document which will be reflected in the requirements documentation produced by CGS. These requirements will be approved at the CDR2 on 19th July. IFSI will try to incorporate changes into the documentation before the CDR but major changes may not be possible without going through the PD-ECP process.

6 Common Housekeeping and Diagnostic Data Collection Concept

PACS is collecting HSK every 2 secs

PACS have difficulty using the new HSK services to modify diagnostic data.

It is not clear whether the term 'mandatory' in the PS-ICD means that these services must be implemented even if it is not planned to use them or whether it means that the service must be used if the functionality is required.

How do we receive the On Target Flag? Should this be in the Ground-Spacecraft ICD? This document is now available (TBC)

7 Common Commanding Concept

Conclusion:

We all use the same service (8,4 TBC) for commanding

We do not see the need for commonality in the use of Function ID and Activity ID

There is a request for FunctionID and ActivityID to be 16 bits for PACS - which is not allowed in the new PS-ICD - this will be raised at the telecon.

The instruments have different requirements on how commands are buffered and when they are executed. For example:

HIFI treats all commands as immediate

SPIRE and PACS expect commands to be executed fully before the next command is executed.

This will be discussed at instrument-IFSI meetings

8 Common Autonomy Concept

New command services in the PS-ICD allow stopping and restarting a schedule. This means that instruments could take action to diagnose problems and take corrective action. Event messages would be used to tell the CDMS to stop the schedule to the instrument and to restart at the next subschedule.

Roelfsema thought that HIFI do not intend to use this facility at the moment.

OBS6-05	Orfei	to send a copy of the DPU FMECA to SPIRE and HIFI	16 th July 2001
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Conclusion: IFSI need inputs in order to implement these actions

For the AVM the HIFI ICU will NOT implement Autonomy functions

OBS6-06	Roelfsema, Bauer, King	to confirm the need for the implementation of autonomy functions in the OBS delivered with the AVM	31 st July 2001
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OBS6-07	Roelfsema, Bauer, King	In the case of autonomy functions needing to be implemented (see OBS6-0??) define the functions that need to be provided	31 st July 2001 (PACS) 15 th September 2001 (SPIRE) TBD (HIFI)
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9 Common Event Handling Concept

IFSI were planning to use the asynchronous event slots to transfer all event packets. PACS want this also because it reduces the impact on instrument data transfer. HIFI have said that they do not need this facility.

SPIRE need to respond to the EGSE WG action

Probably asynchronous event slots will be used as this minimises the affect on TM data transfer. This will imply extra functionality for the CDMS Simulator.

9.1 Contents of Event Packets

10 CDMS/1553 Interface

10.1 PS-ICD: CCB decisions concerning CRRs

Many changes have been made in the PS-ICD, which we do not know the reason for:

- The command service 8,3, which we intended to use has been replaced by new services (8,3 8,4 and 8,5).
- Also the packet format has changed, which means we have to change all the current packet formats
- New PUS and OIRD versions are referred to, which we have not seen.
- The checksum has been changed to cover the complete data field, rather than just the actual memory contents, which makes it difficult to generate internally
- There is a new procedure for memory loading, which is not in the PUS

CRISA analysed the changes and are predicting a 3 week delay

It was agreed that we could not accept the procedure for agreeing to the changes made in the new version. We are concerned that the new document is inconsistent and the number of changes it contains implies much extra work to the instrument teams. We cannot afford to go through a long exercise of commenting and discussion at meetings as the OBS is being written now.

A telecon was arranged with Passvogel and Theurey during the meeting - a telecon to discuss comments on PS-ICD Issue2 draft 2 will take place on 13th July

OBS6-08	Di Giorgio Cerrulli	to provide comments on the Draft 2 of the PS-ICD Issue2	12 th July 2001 (by 12:30)
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Discussion on the need for a document to specify which services and protocols from the PS-ICD the instruments actually use and how they use them (including what is used by the CGS Boot ROM software). Agreed that this should be in a DPU-S/C ICD, which will become part of the IID PartB.

OBS6-09	Di Giorgio	to provide a section for the instrument ICDs specifying how the PS-ICD protocol is used by the OBS to transfer information between the instrument and the S/C	31 st July 2001
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10.2 Status of 1553 interface software

This was presented at the EGSE meeting

IFSI are expecting delivery of the prototype CDMS Simulator at end of July

10.3 Time Synchronisation (1553 bus time versus service 9)

The DPU will use service 9 to synchronise their clock

The DPU clock chip is better than 1 part per million for a 10 degree C change.
This gives an accuracy of ~ 100ms per day.

11 Patching with VIRTUOSO

It is still not proven that it is possible to patch the OBS, although it is possible in theory.

It will be necessary to stop the OBS and jump to some external piece of code to copy the code into program memory and then restart the OBS.

OBS6-10	Pezutto	to verify the concept of patching the OBS software with a simple example.	31 st August 2001
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This will not be implemented in the OBS delivery for the AVM, but will be implemented in a later version of the software (required for AVM delivery to ESA)

12 OBS Maintenance Facility and interface to HCSS

IFSI have agreed a form of words describing the OBS maintenance services they will provide to HIFI

OBS6-11	Di Giorgio	to send to PACS and SPIRE the agreement with HIFI on OBS maintenance for them to comment, and possibly include in their MOUs.	13 th July 2001
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13 Impact of late delivery of DPU/ICU units on instrument schedules

13.1 Gavazzi schedule update

13.2 IFSI software development schedule

It was agreed that it would be preferable to have one IFSI schedule covering the three instruments. Wafflebacker offered the services of the HIFI project controller in this task

Orfei showed the detailed schedule for PACS (other instruments are similar)

The following items were found to be missing:

- Integration and test plan for DPU H/W (see action OBS5-04)
- Integration and Test plan for OBS S/W (will be included in the DPU Test Plan)
- Test Plan for the S/C interface (see EGSE action due 27th July)
- Detailed schedule from CGS (see minutes of DPU-ICU progress meeting #1 - due 17th July)
- Test Plan from CGS (see minutes of DPU-ICU progress meeting - due 17th July)
- Integrated detailed schedule for the three instruments, including resource allocation

OBS6-12	Orfei	to provide an integrated detailed schedule for the three instruments, including resource	31 st July 2001
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		allocation.	
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13.3 Schedule Monitoring

Progress reports should be produced bi-weekly.

They should address:

- progress of activities for that period
- an assessment of the status of upcoming milestones
- a report on the CGS activities

This is in addition to the weekly telecons IFSI have with CGS

13.4 IFSI detailed AVM test schedule

After the test plan is produced IFSI are responsible for providing the necessary test procedures and scripts for carrying out the tests.

It became clear that only when the test plan is complete can we know what functionality is required for the test equipment. At this stage it may not be possible to carry out the test at IFSI (e.g. if QLA is required)

13.5 MIB for IFSI EGSE tests (needed end July)

Need PACS specific input plus TC/TM interface control documents for the CDMS simulators to complete a MIB by 3rd August..

OBS6-13	Bauer	to provide information to allow the construction of a PACS specific MIB	18 th July 2001
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OBS6-14	King	to provide information to allow the construction of the CDMS simulator part of the IFSI test MIB	31 st August 2001
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14 Cooler Operations and Recycling (PACS + SPIRE)

OBS6-15	King	to send procedure for Cooler recycling as defined by SBT to IFSI	31 st July 2001
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Cooler operations are carried out by the DPU.

15 Summary of Action Items

16 Next Meetings

Agreed to reduce the number of common meetings

OBS #7: 3rd October - to review status of DPU H/W and documentation delivery, status of OBS, status of EGSE

17 AOB

OBS6-16	Sidher	to setup an email distribution list for the OBS WG	31 st July 2001
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Actions Remaining at end of Meeting

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