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OBJET / PURPOSE :				CLASSIFICATION :	
<b>SPIRE Progress &amp; Interface Telecon</b>					
PARTICIPANTS ATTENDEES	SOCIETE FIRM	SIGNATURE SIGNATURE	PARTICIPANTS ATTENDEES	SOCIETE FIRM	SIGNATURE SIGNATURE
Guy Doubrovik	ASP		John Delderfield	RAL	
Bernard Collaudin	ASP		Eric Sawyer	RAL	
Carsten Scharmberg	ESA		Eric Clarck	RAL	
Horst Faas	ASED				
Marco Cesa	ALS				
REDACTEUR / WRITTEN BY :					
Guy Doubrovik					
CONCLUSION :					
DISTRIBUTION : PARTICIPANTS / ATTENDEES	POUR ACTION : FOR FURTHER ACTION				
	POUR INFORMATION : FOR INFORMATION				
APPROUVE PAR / APPROVED BY					
NOM / NAME					
SIGNATURE / SIGNATURE					

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**Agenda : see Annex 1**

**Added EOB to agenda:**

- EQM delivery list
- L1 interface proposed changes

**Open Actions status (see annex 3 , 1/3 to 3/3):**

(with: **SPIRE Answer mail E.Sawyer 28/04/04** and **Corrected during this IF telecon**)

**AI From last SPIRE IF Meeting 10-02-04 , H-P-ASP-MN-4307**

**AI 1 – SPIRE :** Redundant connectors position on DCU/FCU QM1 should be included on CR 64/65 in a version 2 of the CR 64/65

**Closed** by CR68v1 with ICD pack issue 11 received by mail E.Clark 28/04/04

**The ICD pack issue 11 shall be downloaded by ASED and ALS from Alcatel Instruments ftp server, directory “ spire\_to\_industry”, file “ SPIRE-IID-B\_pack\_Apr\_Iss11.pdf”** (because of file size: 12.5 MO)

The EQM harness definition should be included in IIDA (next issue)

How representative (or not) is the EQM harness versus FM for EMC: question to be addressed by EMC people and EMC WG

**AI 2 – SPIRE : Closed and obsolete for IIDB 3.11 and 3.2;** but see here after and Annex 2 – 2/4 for IIDB update for System CDR issue

**AI 3 – ESA :** ESA to sort out the problem of availability of DRCU CQM 1 between HPLM EQM test & SPIRE FM test (summer/Autumn 2004)

**ESA**  
**14/05/04**

**Still Open** , in spite of new SPIRE RFW 02 (still problem with DRCU Electronics availability) New due date: 14/05/04

**AI 4 – SPIRE :** SPIRE to issue a CR with update of the FPU ICD to version 19

**Closed** by CR68v1 with ICD pack issue 11 received by mail E.Clark 28/04/04

**AI 5 – ASED :** ASED to update the harness shield definition according to the clarification during the meeting.

**Closed :** by mail from J.Lang dated 17/02/04 ref “ HP-ASED-EM-0194-04: CVW Internal SPIRE SIH shielding Design »

**AI 6 – SPIRE :** SPIRE to issue a CR if they want to increase the BSM motors currents from 40 to 60mA, and to investigate alternative solution (internal to SPIRE)

**Closed** by:

SPIRE will not require more than 50 mA (maybe 40 mA will be enough TBC). SPIRE will include the final required value (maximum 50 mA) in the Harness Definition Document version 1.2 and its proper change list (see AI 3 of SCI-PT-21435 SPIRE Progress Telecon #2\_29-10-03)



SPIRE shall issue a CR to include this HDD in next IIDB issue

**AI 8 – SPIRE :** SPIRE to update the integration procedure according to the ASED redlined version

**SPIRE**  
**14/05/04**

**Open** New due date: 14/05/04

ACTION

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**AI 10 – SPIRE** : DCU/FCU model philosophy (QM2/FM) needs to be formalised . SPIRE will issue a RFW to formalise this situation  
**Closed** by HR-SP-CEA-RFW-002-v2 received by mail from Eric Clark dated 27/04/04

**AI From previous IF meetings:**

**From H-P-ASP-MN-3961 SPIRE IF Meeting 18-11-03**

**AI 2 – SPIRE** : SPIRE to prepare a list of expected interface changes wrt current IID-B 3.0 baseline definition, to be discussed during next interface meetings  
**Closed - Obsolete**

**From H-P-ASP-MN-3513 SPIRE IF&IIDB Meeting\_4-09-03**

**AI 11 – ASED** : Astrium will make a detail evaluation of the conduction / Dissipation (discriminate between both) of the SPIRE cryoharness to the FPU. (this could mean using electrical resistance at operating temperature).  
**Still Open** date = issue of the document for CDR 12/05/04

**ASED**  
**12/05/04**

**From HP-2-ASED-MN-0387. AIV meeting.**

**AI 5 – SPIRE** : Thermal environment during IST-IMT. Worst T environment to still be able to test the cooler in the cryostat vs L0 and L1 temperatures  
**Closed** SPIRE agreed with 7K on level 1 during Telecon # 7 dated 07-04-04  
**AI 8 – SPIRE** : most sensitive noises mode. Will be Identified in test sheet  
**Closed** by SPIRE EQM test plan 001905 issued in February contains these details and replace TN 982.

Document " SPIRE EQM test plan 001905" to be checked by ASED to confirm AI 8 closure

**AI 11 – SPIRE** : Define power lines to be tested  
**Still Open**—More investigation is required on how to do this test with no representative PSU. New due date 28/05/04.

**SPIRE**  
**28/05/04**

**AI From SPIRE Progress Telecon's :**

**From SCI-PT-25942 - SPIRE IF Telecon # 7 \_ 02-04-04**

**AI 1 – ASP** : Alcatel to clarify orientations on the FM DCU and AVM DCU  
**Closed** by mails from B.Marchand H-P-ASP-LT-4726 and answer to J.Derdelfield "Réf. : SORTED" dated 06/04/04

**AI 2 – ASED** : Astrium to check, the planned duration of FPU presence with an open cryostat

**Closed** by: ASED states that the duration will be less than 2 weeks and in controlled environment (class 100)

**AI 3 – ESA** : ESA to present current review planning



**Closed** by mail exchange between C.Scharmberg and E.Sawyer  
Next issue is foreseen in September 04.

**From SCI-PT-24408 SPIRE Progress Telecon #6\_ 03-03-04**

**AI 2 – SPIRE** : SPIRE to provide a technical note with all relevant details of the termination connectors not included in the HDD

**Still Open** New due date 28/05/04

**SPIRE**  
**28/05/04**

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**AI 4 – SPIRE** : SPIRE (JD) to confirm the content of the email (Juergen Lang, 17.02.04 ref. HP-ASED-EM-0194-04: CVV Internal SPIRE SIH shielding Design)

**Closed** This e-mail confirms the agreement, RAL have agreed and it has been implemented.

**AI 6 – SPIRE** : SPIRE to provide requested IID-B input or due dates to Alcatel (according ESA IID-B CCB, for next IIDB issue 3.x)

**Closed** : not completed but replaced by new AI 1 of these minutes (see “IIDB update for System CDR issue” here after in the present minutes)

**AI 9 – ASED** : ASED to agree and/or comment this new FPU ICD's v19 (ICD pack new issue 10)

**Open** but now this AI refers to ICD pack issue 11 received by mail E.Clark 28/04/04. Due date: 07/05/04

**ASED**  
**07/05/04**

**From SCI-PT-21435 SPIRE Progress Telecon #2\_29-10-03**

**AI 3 – SPIRE** : SPIRE to issue the Harness Definition Document version 1.2, which will reflect HDD1.1 plus update according annex 5 of SPIRE IID-B version 3.0 “SPIRE HDD 1.1 Deltas”

**Open** SPIRE shall issue this HDD with corresponding CR to IIDB 3.2

**SPIRE**  
**01/06/04**

***IIDB update for System CDR issue :***

**See annexes 2, 1/4 to 4/4**

- **Items from : Main SPIRE IIDB updates for System CDR issue From PM#21 \_ 15-16/04/04 (Annex 2, 1 /4)**
- **Items from : Asked inputs from ESA CCB SCI-PT-MM-024070\_12-13/02/04 (versus signed issue 3.2) (Annex 2 – 2/4)**
- **Items from : Missing Inputs asked by ASP CCB#41 (H-P-ASP-MN-4169 on SPIRE IIDB 3.1) (Versus signed issue 3.2) (Annex 2 – 3/4)**
- **Items from : Comments on SPIRE IID-B\_3-2\_RAL\_JD With GD answers (18/0304, reviewed 20/04/04) (Annex 2 – 4/4 )**
- **Items from : Miscellaneous TBD, TBC, TBW and on going or incoming CR's**

SPIRE is requested to analyse all these inputs required for next IIDB issue, and to provide a corresponding delivery planning for next week in order to deliver the last IIDB input for beginning of June 04

This with a delivery sharing out between beginning of May and June to avoid all inputs delivered in June

ASED is also requested to analyse all these inputs required for next IIDB issue, and provide comments or answer: particularly for “Comments on SPIRE IID-B\_3-2\_RAL\_JD With GD answers ” (here after Annex 2 – 4/4 )



**AI 1–SPIRE**  
**05/05/04**

**AI 2–ASED**  
**07/05/04**

**Miscellaneous IIDB's inputs:**

**Ground thermal requirements :**

IIDB § 5.7.1.3, Table 5.7-2 (see item #5 of here after Annex 2 – 3/4)

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This table shall be filled and fixed for next IIDB issue by values agreed between SPIRE and ASED

SPIRE has already agreed "7K on level 1 during IST-IMT" (see AI 5 of HP-2-ASED-MN-0387)

ASED to provide SPIRE with proposed values to fill the table 5.7-2 "Ground thermal requirements"

(Thermal Analysis Report issue 4 will be available with HPLM CDR data pack)

ASED will check if it is possible to provide extract of Thermal Analysis Report corresponding to these ground thermal requirements values, and provide it next week before HPLM CDR

**AI 3-ASED**  
**14/05/04**

### ***SPIRE CR's status : see Annex 4***

#### **Last received CR's, not included in IIDB v3.2**

No specific item to discuss, new CR 68 will be added

#### **Updated list and schedule of future (or new issues) SPIRE CR's (and RFW/D):**

Not discussed

### ***SPIRE general (or particular) technical status :***

#### **Schedule:**

No new input since last Telecon #7

#### **Spire CQM Cold vibration test :**

A week was lost at CSL (due to facilities), tests on going

SPIRE informs that there is a human safety problem during X axis tests handling, to be solved

LO links are included on CQM for vibration test

**Technical:** not discussed

### ***Mechanical & Electrical interfaces issues.***

#### **FCU & DCU QM ICD's,**

New ICD pack issue 11 received 28/04/04 with CR68v1

FCU & DCU QM ICD's of pack issue 11 are to be checked and agreed:

ASED to check these new FCU & DCU QM ICD's (pack issue 11) and include corresponding agreement and/or comments in the foreseen proposal (fax) concerning SPIRE QM harness

ALS to check this new FCU & DCU QM ICD's (pack issue 11) and send corresponding agreement and/or comments

**AI 4-ASED**  
**14/05/04**

**AI 5-ALS**  
**14/05/04**



#### **SPIRE Cryo-Harness : FM and QM**

See here above AI 4 of these minutes

#### **FPU & JFET ICD's**

New ICD pack issue 11 received 28/04/04 with CR68v1

To be checked by ASED (see here above: AI 9 of SCI-PT-24408 SPIRE Progress Telecon #6), due date 07/05/04

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### MGSE ICD

Included in new ICD pack issue 11 received 28/04/04 with CR68v1

ASED to check this new MGSE ICD (pack issue 11) and send corresponding agreement and/or comments

**AI 6-ASED  
14/05/04**

### Warm Interconnecting harness.

ASP and ALS to answer to mail from JD dated 27/04/04 " Re: WIH manufacturing », see **Annex 5**, concerning mechanical harness interfaces

**AI 7-ASP &  
ALS  
07/05/04**

### L1 Interface changes

SPIRE has sent by mail dated 26/04 to ASED a proposal concerning L1 (with IF SPIRE-RAL-NOT-001933)

This proposal includes the moving of electrical isolation to instrument IF: so no more electrical isolation requirement should be asked by SPIRE to Industry.

ASED to check and answer to this L1 IF proposal SPIRE-RAL-NOT-001933

**AI 8-ASED  
07/05/04**

When agreed, the new Thermal Strap IF configuration and isolation shall be included in IIDB next issue

SPIRE to provided for IIDB § 5.6 the new Thermal Strap IF configuration and isolation (new drawings/text/values )

**AI 9-SPIRE  
14/05/04**

### Thermal interfaces issues.

Not more specific item discussed

### **AIT Issues :**

#### **SPIRE FPU Handling and Integration Procedure update status**

See here above: AI 8 of H-P-ASP-MN-4307 , due date 14/05/04

#### **EQM delivery list**

ASED asks for:

SPIRE to deliver detailed list of all necessary equipment to perform EQM tests

**AI 9-SPIRE  
30/06/04**

### **Next SPIRE IF Meetings :**

**Teleconf: 26 May 04**

**Meeting : 30 June 04 at RAL**

	<b>ACTION ITEM LIST</b>	REF. : H-P-ASP-MN-4776
	MEETING TITLE: SPIRE Progress & Interface Meeting-Telecon	DATE : 28/04/04
	<b>HERSCHEL/PLANCK</b>	PAGE : 7/21

<b>ACTION from present meeting</b>			<b>DATE</b>
<b>N°</b>	<b>DESCRIPTION</b>	<b>ACTION Firm / person</b>	<b>DUE</b>
<b>1</b>	SPIRE is requested to analyse all these inputs required for next IIDB issue, and to/provide a corresponding delivery planning for next week in order to deliver the last IIDB input for beginning of June 04	<b>SPIRE</b>	05/05/04
<b>2</b>	ASED is also requested to analyse all these inputs required for next IIDB issue, and provide comments or answer: particularly for "Comments on SPIRE IID-B 3-2 RAL JD With GD answers "	<b>ASED</b>	07/05/04
<b>3</b>	ASED to provide SPIRE with proposed values to fill the table 5.7-2 "Ground thermal requirements"	<b>ASED</b>	14/05/04
<b>4</b>	ASED to check these new FCU & DCU QM ICD's (pack issue 11) and include corresponding agreement and/or comments in the foreseen proposal (fax) concerning SPIRE QM harness	<b>ASED</b>	14/05/04
<b>5</b>	ALS to check this new FCU & DCU QM ICD's (pack issue 11) and send corresponding agreement and/or comments	<b>ALS</b>	14/05/04
<b>6</b>	ASED to check this new MGSE ICD (pack issue 11) and send corresponding agreement and/or comment	<b>ASED</b>	14/05/04
<b>7</b>	ASP and ALS to answer to mail from JD dated 27/04/04 " Re: WIH manufacturing » concerning mechanical harness interfaces	<b>ASP/ALS</b>	07/05/04
<b>8</b>	ASED to check and answer to this L1 IF proposal SPIRE-RAL-NOT-001933	<b>ASED</b>	07/05/04
<b>9</b>	SPIRE to provided for IIDB § 5.6 the new Thermal Strap IF configuration and isolation (new drawings/text/values )	<b>SPIRE</b>	14/05/04
<b>10</b>	SPIRE to deliver detailed list of all necessary equipment to perform EQM tests	<b>SPIRE</b>	30/06/04

## **ANNEXES OF THE MINUTES H-P-ASP-MN-4776**

### ***Annex 1: Agenda***

### **Annex 2 : IIDB update for System CDR issue**

- **Annex 2 – 1/4 : Main SPIRE IIDB updates for System CDR issue From PM#21 \_ 15-16/04/04**
- **Annex 2 – 2/4 : Asked inputs from ESA CCB SCI-PT-MM-024070\_12-13/02/04 (versus signed issue 3.2)**
- **Annex 2 – 3/4 : Missing Inputs asked by ASP CCB#41 (H-P-ASP-MN-4169 on SPIRE IIDB 3.1) (Versus signed issue 3.2)**
- **Annex 2 – 4/4 : Comments on SPIRE IID-B\_3-2\_RAL\_JD With GD answers (18/0304, reviewed 20/04/04)**

### **Annex 3 : SPIRE Actions Status 1/3 to 3/3**

### **Annex 4 : Last SPIRE CR's Status**

### **Annex 5 : mail from JD dated 27/04/04 " Re: WIH manufacturing "**



# Annex 1

## SPIRE IF Telecon Agenda

### Actions status:

See attached tables (dated 15/04/04)

### IID-B future (after 3.2) Syst CDR issue missing inputs status (see attached pages):

- Main SPIRE IIDB updates for System CDR issue From PM#21 \_ 15-16/04/04
- Extract of asked inputs or comments from ESA CCB SCI-PT-MM-024070\_12-13/02/04 (versus signed issue 3.2)
- Missing Inputs asked by ASP CCB#41 (H-P-ASP-MN-4169 on SPIRE IIDB 3.1) (Versus signed issue 3.2)
- Comments on SPIRE IID-B\_3-2\_RAL\_JD With Guy Doubrovik answers (18/0304, reviewed 20/04/04)
- Miscellaneous TBD, TBC, TBW and on going or incoming CR's

### SPIRE CR's status :

- Last received CR's, not included in IIDB v3.2: See attached table "last SPIRE CR's Status"
- Updated list and schedule of future (or new issues) SPIRE CR's (and RFW/D): to be issued by SPIRE (see AI 2 of H-P-ASP-MN-3961 SPIRE IF Meeting 18-11-03)

### SPIRE general (or particular) technical status (TBD by SPIRE) :

- SPIRE schedule (if new inputs)
- Technical status (if new inputs)
- Spire CQM Cold vibration test results

### Mechanical IF Issues:

- FCU & DCU QM ICD's, with proper CR (see AI 1 of H-P-ASP-MN-4307 SPIRE IF Meeting 10-02-04)
- FPU & JFET ICDs status , with all thermal strap IF; issue 20 on going ? (see AI 4 of H-P-ASP-MN-4307 SPIRE IF Meeting 10-02-04)
- MGSE status:

### Thermal IF Issues:

- TBD

### Electrical IF Issues:

- SPIRE Cryo-Harness Clarifications : FM and QM

### AIT Issues:

- SPIRE FPU Handling and Integration Procedure, update status (see AI 8 of H-P-ASP-MN-4307 SPIRE IF Meeting 10-02-04)

### Other:

- TBD

### Minutes and actions, End of IF Meeting

## **Annex 2 – 1/4**

### **Main SPIRE IIDB updates for System CDR issue FROM PM#21 \_ 15-16/04/04**

For System CDR, the SPIRE IIDB shall be updated with the development of the following main issues:

- **Section 4: to Include measurable scientific requirement** (*ESA IIDB CCB item 1*)

- **Section 5.13: develop interface FDIR** (*ASP CCB#41 item 15 & 16*)

Identify the requirements needed to process the exchanges between S/C and instruments in case of instrument failure. This has been initiated by a review of instruments system level FMECA & FDIR.

- **Section 6 : GSE** (*ESA IIDB CCB item 8, ASP CCB#41 item 19*)

Identify all instrument GSE needed for module or system level testing

- **Section 7 : Integration, testing Operation** (*ESA IIDB CCB item 8*)

Identify the instrument operation or test needed at system level. This should be an outline for the integration procedure, and the module or system level test specification

- **Section 9: Development and verification** (*ESA IIDB CCB item 7 & 8, ASP CCB#41 item 20*)

This section summarises the instrument development and qualification, in order to give a good overview of the qualification status.

**Note: Sections 6 & 7** to be further developed in Module & system test specification (*ESA IIDB CCB item 8, ASP CCB#41 item 19*)

*Notes in blue: refer also to ...*

**Annex 2 – 2/4**  
**Asked inputs from ESA CCB SCI-PT-MM-024070\_12-13/02/04**  
**(versus signed issue 3.2)**

1. **Section 4.8 to be updated by SPIRE** in the next issue of the document with verifiable Instrument requirements during instrument-level tests. This will be co-ordinated by GLP with instrument teams and is a generic action for all Herschel instruments
2. **Section 5.9.3** ; p5-27 , in « .... the reduction in HSDCU power requirements and the associated reduction in conditioning losses in the HSFCU are TBD », **“TBD” to be clarified by SPIRE** (ASP states that there is no effect for the SVM design in the reduction in losses for the HSFCU).
3. **Section 5.11.1.2** ; p5-38 ; requirement HP-SPIRE-REQ-0160 (the telemetry rate will be stated as **“200 kbps TBC”** →PLM CDR version) The telemetry rate shall be defined in the System CDR version. **SPIRE to define this parameter.** (see also ASP CCB # 41, item 12)
4. **Section 5.11.3** ; p5-39  
ASPI has to verify with SPIRE if this requirement (HP-SPIRE-REQ-0200) can be removed, cause there is no requirement on the s/c to ensure the **timing precision (<5ms). TBC by SPIRE** (see also ASP CCB # 41, item 13)
5. **Sections 5.14.1 and 5.14.2** ; p 5-44 ; the next issue of the IID-B will contain explicit requirements, if any. **To be clarified by SPIRE.**
6. **Section 5.16** ; p 5-47 to 5-49 ; **hardware matrix to be added, all sections to be updated/clarified by SPIRE** (see also ASP CCB # 41, item 18)
7. **Sections 9.3 to 9.7** : **update these sections with a suitable verification matrix**, with reference to SPIRE AIV plan, no later than by the next issue of the document in time for CDR. **To be provided by SPIRE** (see also ASP CCB # 41, item 20)
8. **Sections 7. & 9** (INTEGRATION, TESTING AND OPERATIONS - DEVELOPMENT AND VERIFICATION) **need significant improvement**, in **order to reflect the current situation/planning. To be provided by SPIRE**

## Annex 2 – 3/4

### Missing Inputs asked by ASP CCB#41 (H-P-ASP-MN-4169 on SPIRE IIDB 3.1) (Versus signed issue 3.2)

1. **Section 5.1**, last phrase: We have to make sure that the safing plugs are taken into account by ASED. The TBD shall be replaced in next issue **Still missing** (see AI 2 of SCI-PT-24408 SPIRE Progress Telecon #6\_03-03-04: SPIRE to provide a TN)
2. Section 5.4.4.3: ICD of FCU to be updated by SPIRE (M5 screws + contact area) : **Closed by CR 65v1**
3. Note that JFET ICD has been updated with the +7.35mm. This change has not been propagated yet to the SPIRE FPU ICD (sheet 2 & 6) **Closed by CR 65v2 and FPU ICD issue 19**
4. Section 5.6.1: The foot print of the Level 0 thermal interface is not yet included in this version of the IID-B. This has been agreed meanwhile (ref ASED fax HP-ASED-FX-1001-03 from 19/12/03) **Closed by FPU ICD issue 19**
5. **Table 5.7.2**: Ground thermal conditions. It has been agreed that the ground conditions should not be a design driver (ref meeting of 30/10/03 on FPU thermal interfaces). Instrument shall be testable on ground. **Still missing** (table to be agreed ASED/SPIRE and filled)
6. **Section 5.7.3**: According to ICD's, 2 units are black painted, and one has alodine (alochrome). Alcatel propose to keep the design as is. An RFD should be raised by instrument (and will be accepted) **Still missing** (RFD)
7. **Section 5.9.1**: The table of dissipation inside the FPU is superseded by the use of the FPU thermal mathematical model. This table is in agreement with latest thermal model version 2.5, (in annex 2 is the previous version of the TMM 2.3), which should be updated in next version of IID-B **Closed by TMM 2.5, but table to be confirmed by SPIRE**
8. **Section 5.9.3** (thermal dissipation table) is to be completed with the (lower) dissipation in spectrometer case to refine the thermal analysis (cold case) **Still missing** (table to be completed by SPIRE)
9. **Section 5.9.6.1**: Long peak should be included in the second table (per LCL) and not in the first one **Still missing** (tables to be modified and completed by SPIRE)
10. **Section 5.9.6.2**: an OBCP is needed to define switch on procedure: Not enough information is supplied in IID-B **Still missing** (switch on procedure to be provided by SPIRE)
11. **Section 5.10.4.3**: Launch latches: This section should be described more accurately in next version of the IID-B **Still missing** (to be described more accurately by SPIRE)
12. **Section 5.11.1.2**: Spec 160 is not compatible with the implementation of the burst mode. Check with SPIRE if this requirement is still up to date or compliant with the normal data transmission. **Still missing** (200 kbps TBC, see ESA CCB item 3, closed during DMWG ?)
13. **Section 5.11.3**: The start of Scan TC shall be defined more accurately by SPIRE **Still missing** (5 ms TBC, see ESA CCB item 4, see mail 05/03 from JD, ongoing discussions between P.Couzin/K.King/ESA ...)
14. Section 5.11.4: Telemetry: Reference should be made to RD3 rather than AD TBD. SPIRE DATA ICD (SPIRE-RAL-PRJ-1078, draft 2 was part of IHDR datapack). SPIRE should state if this document is the one to be used. Action for next datamanagement working group. **Closed**
15. **Section 5.13.3** Specs 240 to 260 will need some OBCP's to be processed. Not enough information is given to define them **Still missing** (to be provided by SPIRE, closed during DMWG ?)
16. **Section 5.13.3, 4, 5** should be substantiated in the next issue of IID-B, taking into account SPIRE FDIR **Still missing** (to be provided by SPIRE, closed during DMWG ?)

17. **Section 5.15:** Full of TBD, TBC, TBW. These should be replaced in the next issue of IID-B **Still missing** (all TBD, TBC, TBW to be provided by SPIRE)
18. **Section 5-16:** Deliverable matrix should be included (as for other IID's) . This section shall be properly updated in the next issue, as it is currently meaningless **Still missing** (to be provided by SPIRE, see ESA CCB item 6)
19. **Section 6:** same remark as 5.16 **Still missing** (to be provided by SPIRE)
20. **Section 9.3 to 9.7** to be filled by SPIRE **Still missing** (to be provided by SPIRE, see ESA CCB item 7 & 8)

**Annex 2 – 4/4**  
**COMMENTS ON SPIRE IID-B\_3-2\_RAL\_JD**  
**With Guy Doubrovik answers (18/0304, reviewed 20/04/04)**

From: John Delderfield      9th March 2004  
 To:Alcatel/ESA/Astium EADS   cc. Eric Sawyer, Matt Griffin

SCI-PT-IIDB/Spire-02124 issue 3.2 sign off notes.

**P 0-11**

- Change to section 5.7.1.3, should be “information” not “informations” and also on page 5-19. **Done on 3.2 final.**
- Change to section 5.11.1.2. This is not what it seems and Spire does NOT accept it. There is a very long standing agreement to the requirement for this capability and the TBC insertion breaks this. **Required by ESA CCB, to be discussed and fixed in next issue for Syst CDR.**
- Change to section 5.14.3 is on page 5-43 not 5-44. **Done on 3.2 final.**

**P 2-1**

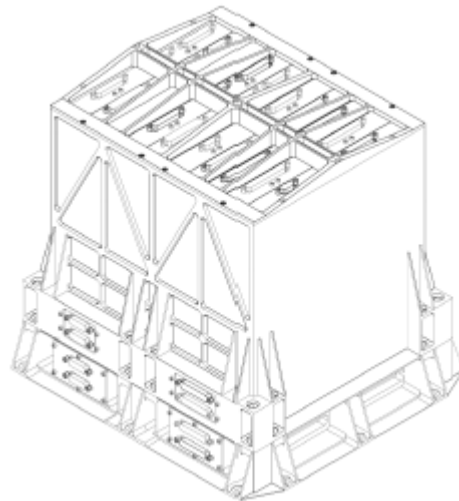
Twice, one word “hereafter”, not “here after”. **Done on 3.2 final.**

**P 5-3, §5.2.1, FIGURE 5.2-1**

Note that **Spire is at 5-7 not 5-6**, but changes are not to any IID-B I/Fs so this is not IID-B important. **OK for next issue for Syst CDR.**

**P 5-11, §5.4.4.3, Figure 5.4-8**

HSFCU has webbed feet and looks like: **OK for next issue for Syst CDR.**

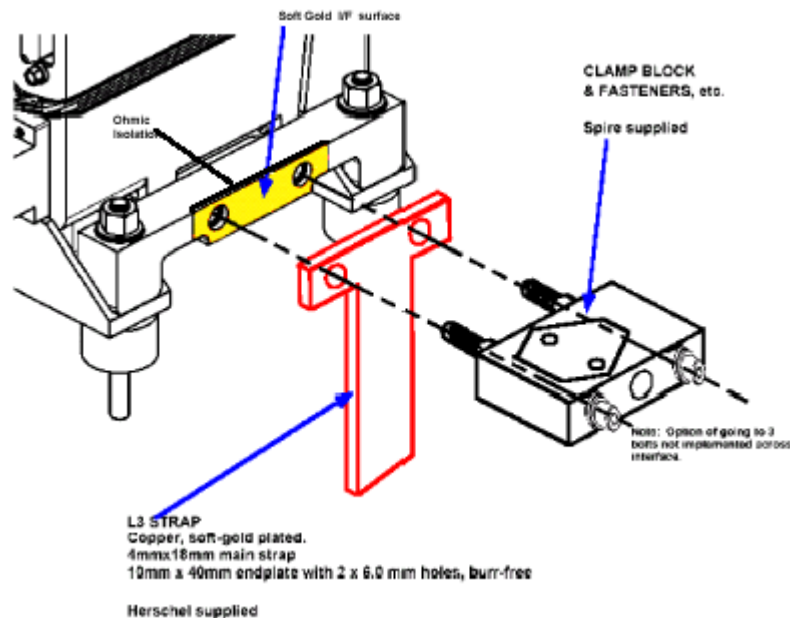


**P 5-12, §5.5**

Remove line referencing SPIRE-RAL-DWG-001409 as it repeats the line below and calls up an out of date issue, and add “SPIRE-RAL-DWG-001409” after annex 1 to this line below. **To be fixed in next issue for Syst CDR.**

**P 5-14, §5.6.1.2**

Change words “Kapton Tape” in 7<sup>th</sup> paragraph to “Ohmic isolation”, and drop in this updated diagram: **To be fixed in next issue for Syst CDR, if agreed by ASED.**



### P 5-17, §5.7

remove issue 2.3 from reference to reduced TMM, a. so text is more generalised, and b. because we are on issue 2.5 already anyway. **OK for next issue for Syst CDR.**

### P 5-18, §5.7.1

- First paragraph, remove superstition; change “witch” to “which”. **Done on 3.2 final.**
- But more importantly, this whole paragraph has errors: MN-3513 on 5/9 is entitled a Progress and I/F meeting not Convergence and MN 3961 is likewise on 18/11. It needs to be much clearer that the ethos of section 5.7.1 arises from the ESTEC meeting convened by Chris Jewell. Spire refers Alcatel to RAL’s inputs to the minutes of that meeting. **To be fixed in next issue for Syst CDR.**

### P 5-23, §5.7.5.3

Remove reference to SPIRE reduced TMM as it is repeated in page 5-17 and not much use tucked away in a section on temperature sensors. **OK for next issue for Syst CDR.**

### P 5-25, §5.9.1

Remove note at bottom of section 5.9.1 as 2.5 TMM is not a future item....delivered end January. **OK for next issue for Syst CDR, but table to be checked by SPIRE versus TMM 2.5.**

### P 5-30, §5.10

RAL does intend to issue HDD 1.2 which will amalgamate 1.1 with NOT 1819 issue 3. **To be fixed in next issue for Syst CDR.**

### P 5-38, §5.11.3

REQ-0200 is wrong. Recent E-mail corrects. **To be fixed in next issue for Syst CDR. (see ESA CCB item 4, ASP CCB #41 item 13, ongoing discussions between P.Couzin/K.King/ESA ...)**

### P 5-44, §5.15.1.2

Section 5.15.1.2. The goal is now less demanding than the requirement and should be deleted. **To be fixed in next issue for Syst CDR**

### P 5-46, §5.16

Remove Note 2 . Done. **To be fixed in next issue for Syst CDR (but today we still not have consolidated and agreed drawings).**

### Annexes:

Please note that Document pack 10 and RTMM 2.5 are out, and that pack 10 travels with a covering E-mail that spells out a few future developments. **To be fixed in next issue for Syst CDR**

### Annex 3 - SPIRE Actions Status 1/3

**SPIRE Answer mail E.Sawyer 28/04/04 – Corrected during IF telecon**

**From last SPIRE IF Meeting 10-02-04 , H-P-ASP-MN-4307**

N°	ACTION DESCRIPTION From H-P-ASP-MN-4307 SPIRE IF Meeting 10-02-04	DUE DATE	Firm / person	ACTION STATUS
1	Redundant connectors position on DCU/FCU QM1 should be included on CR 64/65 in a version 2 of the CR 64/65.	20/02/04	SPIRE	<del>Open</del> , Final QM1 ICD delivery New due date: 16/04/04 New drawing pack with CR has been issued 28/4 <b>Closed</b> by CR68v1 with ICD pack issue 11 received by mail E.Clark 28/04/04
2	SPIRE to reply to list of open points from Alcatel CCB included in Annex 1-2/3	27/02/04	SPIRE	<b>Closed:</b> obsolete as IIDB 3.11 is issued
3	ESA to sort out the problem of availability of DRCU CQM 1 between HPLM EQM test & SPIRE FM test (summer/Automn 2004)	03/03/04	ESA	<b>Open</b> New due date: <del>next IF meeting 29/04/04</del> 14/05/04
4	SPIRE to issue a CR with update of the FPU ICD to version 19	27/02/04	SPIRE	<del>Open</del> (partially closed by Pack issue 10 received 26/02, but without CR) FPU ICD Issue 20 is foreseen New due date: 16/04/04 New drawing pack with CR has been issued 28/4 <b>Closed</b> by CR68v1 with ICD pack issue 11 received by mail E.Clark 28/04/04
5	ASED to update the harness shield definition according to the clarification during the meeting.	17/02/04	ASED	<b>Closed</b> : by mail from J.Lang dated 17/02/04 ref " HP-ASED-EM-0194-04: CVV Internal SPIRE SIH shielding Design »
6	SPIRE to issue a CR if they want to increase the BSM motors currents from 40 to 60mA, and to investigate alternative solution (internal to SPIRE)	27/02/04	SPIRE	<del>Open</del> New due date: 12/03/04 16/04/04 SPIRE do not wish to increase the BSM motor current, the PFM BSM is being re-engineered to make higher current unnecessary. <b>Closed</b> by: SPIRE will not require more than 50 mA and will include the final required value (maximum 50 mA) in the HDD
7	Action to ASED to cross check that the currents which are used to design cables (ref IID-A 3.1 annex 8 tables) are compliant with the one in the HDD 1.1 + annexes in IID-B 3.11	27/02/04	ASED	<b>Closed</b> by HP-ASED-FX-0096-04 dated 13/02/04 with attached mails dated 12/02/04 and 16/02/04
8	SPIRE to update the integration procedure according to the ASED redlined version in annex 5	14/05/04	SPIRE	<b>Open</b> New due date: <del>31/03/04 16/04/04</del> 14/05/04 Still not completed
9	It should be checked again if this vacuum grease can be used to avoid cold welding, of find an alternative for lubricating the screws.	27/02/04	ASED	<b>Closed</b> by HP-ASED-EM-0284-04 dated 18/03/04 : ASED does not plan to use vacuum grease
10	DCU/FCU model philosophy (QM2/FM) needs to be formalised . SPIRE will issue a RFW to formalise this situation	27/02/04	SPIRE	<del>Open</del> New due date: 31/03/04 16/04/04 Updated RFW has been circulated, some iteration requested by ESA <b>Closed</b> by HR-SP-CEA-RFW-002-v2 received by mail from Eric Clark dated 27/04/04



## Annex 3 - SPIRE Actions Status 2/3

**From Previous SPIRE IF Meetings : only open AI's**  
**SPIRE Answer mail E.Sawyer 28/04/04 – Corrected during IF telecon**

N°	ACTION DESCRIPTION	DUE DATE	Firm / person	ACTION STATUS
<b>From H-P-ASP-MN-3961 SPIRE IF Meeting 18-11-03</b>				
<b>2</b>	Alcatel ask SPIRE to prepare a list of expected interface changes wrt current IID-B 3.0 baseline definition, to be discussed during next interface meetings	30/11	SPIRE	<del>Open</del> For changes wrt 3.2 new date 27/02/04 12/03/04 16 /04/04 This AI is not covered by the "Comments" with "Signed front page of IIDB 3.2" <b>Closed - Obsolete</b>
<b>From H-P-ASP-MN-3513 SPIRE IF&amp;IIDB Meeting_4-09-03</b>				
<b>11</b>	Astrium will make a detail evaluation of the conduction / Dissipation (discriminate between both) of the SPIRE cryoharness to the FPU. (this could mean using electrical resistance at operating temperature).	15/12	Astrium A.H	<b>Open</b> new date = issue of the document for CDR (15 april 04) 12/05/04
<b>From HP-2-ASED-MN-0387. AIV meeting.</b>				
<b>5</b>	Thermal environment during IST-IMT. Worst T environment to still be able to test the cooler in the cryostat vs L0 and L1 temperatures	12/11/03	SPIRE	<b>Closed</b> SPIRE agreed with 7K on level 1 during Telecon # 7 dated 07-04-04
<b>8</b>	most sensitive noises mode. Will be Identified in test sheet.	15/12/03	SPIRE	<b>Still Open</b> – Will be included in SPIRE TN 982 "SPIRE EQM test program definition" to be updated . New due date 13/02/04 31/03/04 16 /04/04 <b>Closed</b> by SPIRE EQM test plan 001905 issued in February contains these details and replace TN 982 <b>To be checked by ASED</b>
<b>11</b>	Define power lines to be tested	15/12/03	SPIRE	<b>Still Open</b> – Idem AI 8, New due date 31/03/04 16 /04/04 28/05/04 More investigation is required on how to do this test with no representative PSU.

### Annex 3 - SPIRE Actions Status 3/3

From SPIRE Progress Telecon's : only open AI's  
**SPIRE Answer mail E.Sawyer 28/04/04 – Corrected during IF telecon**

N°	ACTION DESCRIPTION Progress Telecon #	DUE DATE	Firm / person	ACTION STATUS
<b>SCI-PT-25942 - SPIRE IF Telecon # 7 _ 02-04-04</b>				
1	Alcatel to clarify orientations on the FM DCU and AVM DCU	09/04/04	ASP	<b>Closed</b> by mails from B.Marchand H-P-ASP-LT-4726 and answer to J.Derdelfield "Réf. : SORTED" dated 06/04/04
2	Astrium to check, the planned duration of FPU presence with an open cryostat	09/04/04	ASED	<del>Open</del> <b>Closed</b> by: ASED states that the duration will be less than 2 weeks and in controlled environment
3	ESA to present current review planning	09/04/04	ESA	<del>Open</del> <b>Closed</b> by mail exchange between C.Scharmberg and E.Sawyer
<b>SCI-PT-24408 SPIRE Progress Telecon #6_ 03-03-04</b>				
2	SPIRE to provide a technical note with all relevant details of the termination connectors not included in the HDD	19/03/04	SPIRE	<b>Still Open</b> New due date <del>16/04/04</del> 28/05/04 Not completed
4	SPIRE (JD) to confirm the content of the email (Juergen Lang, 17.02.04 ref. HP-ASED-EM-0194-04: CVV Internal SPIRE SIH shielding Design)	12/03/04	SPIRE	<del>Open</del> <b>Closed</b> This e-mail confirms the agreement, RAL have agreed and it has been implemented.
6	SPIRE to provide requested IID-B input or due dates to Alcatel (according ESA IID-B CCB, for next IIDB issue 3.x)	19/03/04	SPIRE	<del>Open</del> (New due date for planning: 30/04/04) <b>Closed</b> : not completed but replaced by AI 1 of H-P-ASP-MN-4776
9	ASED to agree and/or comment this new FPU ICD's v19 (ICD pack new issue 10)	07/05/04	ASED	<b>Open</b> but now refers to ICD pack issue 11 received by mail E.Clark 28/04/04. Due date: 07/05/04
<b>SCI-PT-21435 SPIRE Progress Telecon #2_ 29-10-03</b>				
3	SPIRE to issue the Harness Definition Document version 1.2, which will reflect HDD1.1 plus update according annex 5 of SPIRE IID-B version 3.0 "SPIRE HDD 1.1 Deltas"	30/11	SPIRE	<b>Open</b> Problem of availability. Patches in IID-B are equivalent (HDD 1.1 + patch v.3 (tech not v3.0 should be replaced in IID-B). Keep open. New due date: 01/06/04 Not due yet SPIRE shall issue this HDD with corresponding CR to IIDB 3.2

### Annex 4 - Last SPIRE CR's Status

SPIRE CR ref	Status (*)	Resp.	IIDB Issue	ASPI CR Ref.	FAX ASP ref	Subject of CR (s)	Industry Response /Comments
<b>HR-SP-RAL-ECR-0064_v1</b>	<b>E</b>	ALS	<b>3.2</b>	H-P-ASP-CR-0601	H-P-ASP-LT-4531 01/03/04	FCU Change connectors and bonding stud position - drawing SPIR-MX-5200 000 J - IIDB Annex 1	Received by mail JD 28/01/04 - To be re-issued for QM - <b>CR 64 v1 transmitted to ALS for FM only</b> (FCU drawing SPIR-MX-5200 000 J, in pack issue 9)
<b>HR-SP-RAL-ECR-0065_v1</b>	<b>E</b>	ALS	<b>3.2</b>	H-P-ASP-CR-0601	H-P-ASP-LT-4531 01/03/04	FCU & DCU FM & QM1 new ICD's in pack issue 9 - IIDB Annex 1	V1 received by mail JD 28/01/04 - To be re-issued for QM - <b>CR 65 v1 transmitted to ALS for FM only</b> : FCU (see CR 64) & DCU drawing SPIR-MX-5100 000 E , in pack issue 9) - <b>Wait for final QM issue to be transmitted to ALS</b>
<b>HR-SP-RAL-ECR-0065 v1-v2</b>	<b>W</b>	ASED	<b>3.2</b>	Reserved H-P-ASP-CR-0625		FCU & DCU FM & QM1 new ICD's in pack issue 9 and then 10 - IIDB Annex 1	V1 by mail JD 28/01/04 and v2 04/03/04 - Include FPU ICD issue 19 - <b>To be re-issued for QM before to be transmitted to ASED (FCU &amp; DCU QM1 drawings)</b>

(*) : I	Created by Instrument, received by ASP
(*) : E	Corresponding ASP CR sent to Sub-Contractor
(*) : S	Waiting for inputs, suspended
(*) : A	Accepted by Sub-Contractor
(*) : C	Closed, Accepted, Applied
(*) : R	Rejected by Sub-Contractor
(*) : N	Obsolete, Suppressed
(*) : W	Waiting for ECR or new issue (not yet received by ASP)

**Annex 5 : mail from JD dated 27/04/04 " Re: WIH manufacturing "**

Pour : ccara@cea.fr  
 cc : E.C.Sawyer@rl.ac.uk  
 D.K.Griffin@rl.ac.uk  
 Baptiste Marchand/ALCATEL-SPACE@ALCATEL-SPACE  
 marco@ifctr.mi.cnr.it  
 marco.cesa@sofiter.it  
 Carsten.Scharmberg@esa.int  
 Guy Doubrovik/ALCATEL-SPACE@ALCATEL-SPACE  
 B.M.Swinyard@rl.ac.uk  
 D.K.Griffin@rl.ac.uk  
 Objet : Re: WIH manufacturing

Dear Christophe,

It's good that CEA has been able to use the STEP file; actually these are some of the simplest harnesses on Herschel.

Spire does not have to provide the flight tie-wraps, although local reinforcement of the harness at these points should be considered.

You are quite correct, aluminium foil covered harnesses are inflexible. However their wrapping for the Spire WIH is not an ESA responsibility...meaning something done by one of its contractors.

To minimise integration complexity, avoiding several parties wanting to work on the SVM panel, can I request that CEA follow the procedure that RAL followed for ERS...and be thankful it's all on one side of a panel!

Deliver the harness in an inverted "coffin", the bottom (lid) panel of which is the used area on the SVM panel.

The top (floor) and sides of the coffin should lift off as one. Inside the coffin should be 3 aluminium sheet metal brackets, one for each Spire warm unit but only present where WIH harness joins receptacles.

The harness should be built in shape, wrapped and checked at CEA before dispatch, and shipped to the SVM(TBC). To install it, lift off three brackets in shape, put on SVM panel, secure brackets and put on tie wraps. Harness then stays on panel. To install a unit, remove its bracket and insert unit, and visa versa.

This approach raises two questions.

1. Will the WIH be used other than on the SVM panel itself? Unless someone screams we will assume not.
2. Will the various sub-panels that connect to the Spire SVM panel be disconnected so as to leave an unobstructed surface on which to install the WIH? I take it the answer must be yes and that no-one has the idea of "just" bending the WIH once through cut-out holes. Alcatel to confirm please.

Cheers

John

\*\*\*\*\*

Hi John,

Starting from the STEP file you have previously sent to us T. TOURRETTE have extracted the information related to the DRCU WIH. The resulting figure is attached to this e-mail.

Let us consider this work as a first step to specify the harnesses.

In order to prepare manufacturing we now need more specific information.

As you know the outer shielding (aluminium foil) are currently very unflexible : harnesses have to be pre formed before putting the shield (no way to twist it after). Based on our experience (we have never been involved in harness delivery - it is always a job for the company in charge of the integration of the payload) the bare harness are mounted in the SC and then shielded. For that reason we would like to clarify what is required by the industry as soon as possible in the case of HERSCHEL.

Our preferred solution being logically (reinforced by the fact the layout of these harnesses is very complex) to deliver bare harness (and then flexible) and the industry will be in charge of the shielding.

We also suppose that serious specifications have been produced by ALCATEL for the payload harnesses : we can't imagine each institute delivering harnesses with various design (connector, shielding, back shell).

Could you please address this point with concerned people ? Or collect information such as specifications ? Anyway we will have to solve this problem before starting any manufacturing activity. This process will be expensive and time consuming that why we would to start on the basis of a clear situation.

Thanks in advance

Christophe

--

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- WIH SPIRE LONGUEUR.PDF