ALCATEL SPACE	HERSCHEL/PLANCK	REF. : H-P-ASP-MN-5426	
		SPIRE Progress & Interface	
		DATE : 07/10/04	PAGE : 1/16
COMPTE RENDU DE REUNION / *MINUTES OF MEETING*		LIEU / *PLACE : ASP Cannes (Telecon)*	

OBJET / *PURPOSE :* CLASSIFICATION :

SPIRE Progress & Interface Telecon Meeting

PARTICIPANTS *ATTENDEES* ***By Telecon***	SOCIETE *FIRM*	SIGNATURE *SIGNATURE*	PARTICIPANTS *ATTENDEES* ***By Telecon***	SOCIETE *FIRM*	SIGNATURE *SIGNATURE*
Guy Doubrovik	ASP		Eric Sawyer	SPIRE	
Bernard Collaudin	ASP		Ken King	SPIRE	
Carsten Scharmberg	ESA		Doug Griffin	SPIRE	
Horst Faas	ASED		Bruce Swingyard (part)	SPIRE	
Siegmund Idler	ASED				
Patrice Couzin (partial)	ASP				
David Guichon (partial)	ASP				
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*				

Agenda : see Annex 1

ACTION

Actions status (see annex 2)

Actions from HP-ASPI-MN-5081 SPIRE IF Meeting 30-06-04

AI 1 SPIRE: IID-B 5.9.6.1 Long peak TBD's to be replaced. SPIRE will propose update for long peaks (+ loan of LCL) — **Closed**

Closed by mail E Sawyer 05/10 (last IIDB SPIRE input): last column to be deleted, there are no long peaks

AI 8 SPIRE: SPIRE to review and comment the document "H-EPLM EMC test Plan HP-2-ASED-PL-0037", and to propose data for the TBD — **Closed**

Closed by mail D.Griffin 06/09/04

Actions from H-P-ASP-MN-4776 SPIRE IF Telecon 28-04-04

AI 10 SPIRE: SPIRE to deliver detailed list of all necessary equipment to perform EQM tests .To be also added in IID-B section 5.16 — **Closed**

See also AI 15 from HP-2-ASED-MN-0753 (SPIRE AIT/EMC Meeting 09-09-04), due date 07/10

Closed by mail E Sawyer 05/10 (last IIDB SPIRE input): section 5.16 inputs

Actions from HP-2-ASED-MN-0753 SPIRE AIT/EMC Meeting 09-09-04

AI 1 ASED: ASED will provide a response to the RAL comments on PL- 0021, Issue 3 — **Closed**

Closed by mail H.Faas HP-ASED-EM-0758-04 21/09/04

AI 2 SPIRE: RAL will provide a sketch of the proposed design of the Break Out Box. Preferred solution is a T- Adapter. Due date 20/09 — **New date 22/10**

Still open New due date

AI 3 SPIRE: RD- 11(CQM deliverable for Syst Level Test) has been updated and will be issued at Version 4 (but idem AI 13 here after) — **Closed**

Closed by mail D.Griffin 23/09 with CQM SPIRE Definition for EQM Test Issue 5.pdf

AI 4 SPIRE: SPIRE will define its GSE deliverables for EQM testing. Due date 07/10 — **Closed Here**

Should be also an IIDB input

Closed with the SPIRE input for IID-B 3.4 (mail from E.Sawyer on 5/10/04)

AI 5 SPIRE: SPIRE will send a PACS/ SPIRE Parallel Mode Procedure for EQM testing.. Due date 30/09 — **New date 29/10**

Still open New due date

AI 6 SPIRE: SPIRE will provide the EQM thermal interface requirements and mass flow rate for the EQM testing) Due date 30/09. — **New date 29/10**

Discussion about the environment provided by the H-PLM EQM to be done offline.

ASP understanding is that both temperature & mass flow can be given.

Still open New due date

AI 7 SPIRE: SPIRE will provide update test activity sheets to cover resolution of the TBD or empty fields Due date 30/09 — **New date 20/10**

Many TBD's remaining in the TRS's

Still open New due date

AI 8 SPIRE: A separate WU integration procedure will be provided by RAL. This will cover the WU interconnection harness Due date 15/10 — **Still Open**

RD to be added in next IIDB

AI 9 SPIRE: SPIRE will provide a dedicated integration procedure for the AVMs, based AVM test plan to be provided by ASP (already provided).Due date 15/10 RD to be added in next IIDB	**Still Open**
AI 10 SPIRE: Update of the FPU Handling and Integration Procedure will be provided).Due date 15/10 **Still open** New due date	**New date 29/10**
AI 11 SPIRE: SPIRE will update the document Operating the SPIRE Instrument. Due date 15/10 **Still open** New due date	**New date 29/10**
AI 12 SPIRE: SPIRE Functional Test Specification, Current version: 1.2. To be distributed. Due date 13/09 **Closed** by mail E Sawyer 30/09	**Closed Here**
AI 13 SPIRE: Definition of the SPIRE CQM Delivered for system level testing; Has been updated to issue 4. Will be sent within CW 38 (but idem AI 3 here before).Due date 13/09 **Closed** by mail D.Griffin 23/09 with CQM SPIRE Definition for EQM Test Issue 5.pdf	**Closed Here** Same as AI-3
AI 14 ASED: ASED will clarify the connectivity to the out- side world in ASED/OTN for PCs. Due date 07/10. ASED answer: ISDN is available & confirmed **Still open** New due date	**New date 29/10**
AI 15 SPIRE: SPIRE will provide the packing list and may request some additional tools, if available at ASED. Due date 07/10 idem to AI 10 from H-P-ASP-MN-4776 SPIRE IF Telecon 28-04-04. Could be closed by mail E Sawyer 05/10 (last IIDB SPIRE input): section 5.16 inputs ? **Closed**	**Closed Here**
AI 16 ASED: ASED will sent the UV lamp spec to SPIRE for check. Due date 17/09 **Closed** mail C.Schlosser HP-ASED-EM-0742-04 20/09/04 and 2nd mail from C.Schlosser to be sent to all parties.	**Closed**
AI 17 ASED: ASED will provide the warm up curves of the instruments. Due date 30/10 **Still open**	**Still Open**
AI 18 ASED: ASED will provide I/ F drawings.of The EQM SVM Simulator. Due date 17/09 **Closed** mail H.Faas HP-ASED-EM-0757-04 21/09/04	**Closed**
AI 19 ASP: ASP will provide the AVM test plan **Closed** since 09/09	**Closed**
AI 20 SPIRE: SPIRE will provide the detailed breakdown of the SPT (Special Performance Test), including the cyrocover temperature calibration. Due date 15/10. **Still open** New due date	**New date 29/10**
Actions from SPIRE Progress Telecon's: **From SCI-PT-30365 - SPIRE IF Telecon # 10 _ 03-09-04**	
AI 1 ASED: Astrium to clarify and send out the final agenda SPIRE AIT Meeting. Due date 07/09 **Closed** by mail H.Faas ref HP-ASED-EM-0708-04 dated 08/09	**Closed**
AI 2 SPIRE: SPIRE to issue update of FPU and MGSE ICD's according to current already agreed status for SPIRE IQR kick-off. Due date 16/11. try to get it earlier to be able to produce the IID-B by 15/11	**New due date 1/11**

Still open New due date 1/11/05

From SCI-PT-29150 - SPIRE IF Telecon # 9 _ 23-07-04

AI 1 ASP: B. Collaudin to answer by email who at ASP side will be the contact person to address this issue (design and construction guidelines for the warm interconnecting harness.) **Closed**

Closed by mail B.Collaudin dated 09/09/04

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". Due date 30/11. To be next IIDB input **Still Open**

Same as AI 2: Try to get it before to issue IID-B for 15/11

Still open New due date

SPIRE Progress Status (see Annex 5)

Technical status

Good thermal performances of the Sorption cooler / detectors (50h @ 1.7K L0

Microvibration tests show some interference with the detectors (near 70Hz). Up to 0.25g

EMC CS tests have been performed on the complete instruments (IID-A level). Also some susceptibilities have been identified (16MHz).

Next SPIRE units delivery schedule

Week of delivery is 15/11:

1 week Incoming inspection

Week after = integration

Conflicts with the SPIRE IQR. ESA to resolve the conflict. **AI-1 - ESA**

SMEC still not qualified

FM under manufacturing Test FM n°1 before end of 2004.

IID-B next issue 3.4 inputs status

Comments on IIDB 3.3 from ESA CCB 23/07: see Annex 3

IIDB next issue 3.4 missing inputs : see Annex 4

(from file " SPIRE IIDB 3.3 final inputs missing_GD-ES_05-10-04.xls").

All input except section 4 will be delivered by end October **AI 2 SPIRE 29/10**

Particular IIDB related items:

FDIR & FMECA doc ref, to be included in IIDB RD's

Agreed and closed by mail E Sawyer 05/10 (last IIDB SPIRE input)

Enter Safe Mode on receipt of a single TC-packet

(Syst CDR RID): SPIRE OBS will comply closed by mail K.King 27/09

SPIRE CR's status

No new CR's received by ASP since IIDB 3.3 (up to CR 74v1)

New (list of) CR's foreseen by SPIRE:

No expected changes, to be decided on a case by case basis discussing the IID-B updates. But most of them are

Mechanical IF Issues:

TBD

Thermal IF Issues:

Temperature gradient between thermal IF (L2/L0, particularly in case of launch abort): OK for SPIRE, closed by mail E.Sawyer 28/09

65 +/-10K gradient during launch abort is acceptable by SPIRE, max up to 80K is acceptable

Electrical IF Issues:

SPIRE Cryo-Harness

ASED IDAS harness database checks at RAL (if needed)

ASED state that the test set up to check the cryoharness with SPIRE is not available at the agreed time slot. It should be possible after 15/11. The SPIRE Harness should be available for test from 20/10 up to early December. ASED needs access to both ends of the SPIRE cryoharness..

ASED will organise with SPIRE a slot to perform the test.

SPIRE WIH and SVM harness (if needed)

No issues on WIH.

SVM harness: Question from Alenia on Power connector to DRCU missing :

There is a RFD from SPIRE stating that the DRU/FCU have external Power supplies (19 inch rack). They are powered from the 220V main power supply.

AIT Issues:

ASED response to RAL Comments to HP-2-ASED-PL-0021

No other comments

AIV/AIT tests specifications (general, ref AIT/EMC meeting and AI's)

Lists are complete

EMC tests specifications (general, ref AIT/EMC meeting and AI's)

SPIRE CQM Delivery (DRB, availability of WUs)

ASP comments to the DRB procedure of ESA is that the instrument qualification Status list should be approved by ESA at the time of the DRB.

Other:

Suppressing straylight :

Baffle between the Instrument Shield and the HIFI FPU LO beam holes
Implementation has been decided. **AI 3 ASED**
ASED will send the conceptual design to SPIRE for information.

Mass & CoG properties (accuracy) of CQM units :

mail E.Sawyer 22/09
Proposition is acceptable for QM, not for FM. **AI 4 SPIRE**
Waiver will be accepted.

Herschel Microvibrations and SPIRE:

last mail B.Collaudin 27/09
SPIRE consider serious the problems of microvibration from the reaction whelels (from ASP CDR microvib analysis) especially for the SMEC (is the 0.1mg susceptibility confirmed ? SPIRE cannot confirm).SMEC will be tested with SPIRE FM1 end of 2004-Early 2005. SPIRE are still analysing the ASP microvibration analysis report (sent to LAL for evaluation for SMEC). SPIRE will warn us in case
ASED asked if there are special requirement wrt the test facility for QM & FM tests.
SPIRE reply that they do not see the noise from their own facility and it would be difficult for them to specify anything. It is therefore decided not to implement a microvibration requirement for the test facility.

Discussion on the Start of Scan requirement (5.6.11)

SPIRE needs to have, in the TM a time stamp (precision 10ms) for the start of scan
ASP will clarify this possibility. But ACMS software is running with steps of 250ms. **AI 5 ASP**

Next SPIRE Progress Telecon # 11 : 27th October 2004
Next SPIRE IF meeting: 26th January 2005

ALCATEL SPACE	**ACTION ITEM LIST**	REF. : H-P-ASP-MN-5426
	MEETING TITLE: SPIRE Progress & Interface Telecon Meeting	DATE : 07/10/04
	HERSCHEL/PLANCK	PAGE : 7/16

	ACTIONS from present H-P-ASP-MN-5426		
N°	**ACTION DESCRIPTION**	**DUE DATE**	**Firm / person**
1	Conflicts with the SPIRE IQR. ESA to resolve the conflict.	20/10	ESA
2	All input except section 4 will be delivered by end October	29/10	SPIRE
3	Suppressing straylight : Baffle between the Instrument Shield and the HIFI FPU LO beam holes Implementation has been decided. ASED will send the conceptual design to SPIRE for information.	29/10	ASED
4	Mass & CoG properties (accuracy) of CQM units : mail E.Sawyer 22/09 Proposition is acceptable for QM, not for FM. Waiver will be accepted.	29/10	SPIRE
5	SPIRE needs to have, in the TM a time stamp (precision 10ms) for the start of scan ASP will clarify this possibility. But ACMS software is running with steps of 250ms.	29/10	ASP
6			
7			
8			
9			
10			

ANNEXES OF THE MINUTES

Annex 1: Agenda

Annex 2: SPIRE Actions Status

Annex 3: Extract from ESA CCB 23/July/04

Annex 4: IIDB next issue 3.4 missing inputs

Annex 5: SPIRE Progress Status

Annex 6:

Annex 1: Agenda

Actions status:
See attached tables

SPIRE general (or particular) technical status (TBD by SPIRE) **:**
- SPIRE schedule (if new inputs), Next SPIRE units delivery schedule
- Technical status
- Functional test
- TBD SPIRE

IID-B next issue 3.4 inputs status
- Comments on IIDB 3.3 from ESA CCB 23/07: see and use attached page (from file "ESA CCB 23-07-04 on IIDB SPIRE 3-3.doc")
- IIDB next issue 3.4 missing inputs : see and use attached table (from file " SPIRE IIDB 3.3 final_inputs missing_GD-ES_05-10-04.xls")

Particular IIDB related items:
- FDIR & FMECA doc ref, to be included in IIDB RD's
- Enter Safe Mode on receipt of a single TC-packet (Syst CDR RID): SPIRE OBS will comply closed by mail K.King 27/09

SPIRE CR's status :
- No new CR's received by ASP since IIDB 3.3 (up to CR 74v1)
- New (list of) CR's foreseen by SPIRE

Mechanical IF Issues:
- TBD

Thermal IF Issues:
- Temperature gradient between thermal IF (L2/L0, particularly in case of launch abort): OK for SPIRE, closed by mail E.Sawyer 28/09
- TBD

Electrical IF Issues:
- SPIRE Cryo-Harness : ASED IDAS harness database checks at RAL (if needed)
- SPIRE WIH and SVM harness (if needed)

AIT Issues:
- ASED response to RAL Comments to HP-2-ASED-PL-0021
- AIV/AIT tests specifications (general, ref AIT/EMC meeting and AI's)
- EMC tests specifications (general, ref AIT/EMC meeting and AI's)
- SPIRE CQM Delivery (DRB, availability of WUs)

Other:
- Suppressing straylight : status of baffle between the Instrument Shield and the HIFI FPU LO beam holes
- Mass & CoG properties (accuracy) of CQM units : mail E.Sawyer 22/09
- Herschel Microvibrations and SPIRE: last mail B.Collaudin 27/09

Dates of next SPIRE IF or Progress Meeting or Telecon

Minutes and actions, End of IF Telecon

Annex 2: SPIRE Actions Status 27/09/04

Still open or changed status since SPIRE PT #10_03/09/04_SCI-PT-30365

From last H-P-ASP-MN-5081 SPIRE IF Meeting 30-06-04 (all AI's)

N°	ACTION DESCRIPTION H-P-ASP-MN-5081 SPIRE IF Meeting 30-06-04	DUE DATE	Firm / person	ACTION STATUS
1	IID-B 5.9.6.1 Long peak TBD's to be replaced. SPIRE will propose update for long peaks (+ loan of LCL)	15/7/04	SPIRE	**Still Open** New date:SPIRE AIT Meeting 09/09/04
2	IIDB Sections 5.11.1.1 & 5.11.1.2 to be re-edited (replaced by values in sub-frames/s) to reflect this agreement. (27 sub-frames/s in normal mode & 40 sub-frames/s in burst modes).	15/7/04	SPIRE	**Closed** by mail E.Sawyer 14/07/04 with file "Comments on IID-B 3.3 draft1", included in IIDB 3.3
3	ASED to verify and freeze the DRCU Power supply configuration (and compatibility with tilting of the cryostat)	15/7/04	ASED	**Closed** by mail (and re mails) H.Faas HP-ASED-EM-0591-04 dated 13/07
4	SVM integration: refer to new proposed RD28. SPIRE Warm electronic integration plan, SPIRERAL-DOC-001132, Issue 0.1, 10/01/02. SPIRE will check the relevance of this document & update if necessary	15/7/04	SPIRE	**Closed** by IIDB 3.3 (includes RD 28)
5	ASED will send the definition of FPU fixation bolts to SPIRE for approval.	15/7/04	ASED	**Closed** by mail H.Faas HP-ASED-EM-0609-04 dated 13/07
6	SPIRE will review this ASED list of relevant AIT documents (in annex 6 of these minutes) and provide comments and update if needed	15/7/04	SPIRE	**Closed** by mail E.Sawyer 06/07/04 with file SPIRE_AIT Document List+comments290604.doc
7	For IID-B 3.3, SPIRE to complete the front page annex 5 (HDD deltas) with update of differences between current agreed configuration and HDD 1.1	7/7/04	SPIRE	**Closed** by HDD 1.1 Deltas SPIRE-RAL-NOT-001819 issue 4 dated 08/07/04 (by mail DG 09/07, included in IIDB 3.3 annex 5)
8	SPIRE to review and comment the document "H-EPLM EMC test Plan HP-2-ASED-PL-0037", and to propose data for the TBD	15/7/04	SPIRE	**Closed** by mail D.Griffin 06/09/04
9	Organise Technical meetings (ASED/ASP + SPIRE) in order to prepare the EMC test specification / Procedures.	15/7/04	ASED/ASP	**Closed** by mail HP-ASED-EM-0644-04 dated 28/07

From previous meeting (open or changed AI)

N°	ACTION DESCRIPTION H-P-ASP-MN-4776 SPIRE IF Telecon 28-04-04	DUE DATE	Firm / person	ACTION STATUS
10	SPIRE to deliver detailed list of all necessary equipment to perform EQM tests .To be also added in IID-B section 5.16 See AI 15 from HP-2-ASED-MN-0753 (SPIRE AIT/EMC Meeting 09-09-04), due date 07/10	30/06/04	SPIRE	**Still Open** Should include the interfaces to electrical test equipements (weigth, size (DRCU power supply for instance) New due date: ~~30/07/04~~ SPIRE AIT Meeting 09/09/04

In blue: Changed since PT #10 03/09/04 jj/mm/yy : in late still open action

From HP-2-ASED-MN-0753 : SPIRE AIT/EMC Meeting 09-09-04(all AI's)

N°	ACTION DESCRIPTION HP-2-ASED-MN-0753 SPIRE AIT/EMC Meeting 09-09-04	DUE DATE	Firm / person	ACTION STATUS
1	ASED will provide a response to the RAL comments on PL- 0021, Issue 3	21/09/04	ASED	**Closed** by mail H.Faas HP-ASED-EM-0758-04 21/09/04
2	RAL will provide a sketch of the proposed design of the BOB. Preferred solution is a T- Adapter	20/09/04	SPIRE	**Open**
3	RD- 11(CQM deliverable for Syst Level Test) has been updated and will be issued at Version 4 (but idem AI 13 here after)	13/09/04	SPIRE	**Closed** by mail D.Griffin 23/09 with CQM SPIRE Definition for EQM Test Issue 5.pdf
4	SPIRE will define its GSE deliverables for EQM testing	07/10/04	SPIRE	**Open**
5	SPIRE will send a PACS/ SPIRE Parallel Mode Procedure for EQM testing..	30/09/04	SPIRE	**Open**
6	SPIRE will provide the EQM thermal interface requirements and mass flow rate for the EQM testing)	30/09/04	SPIRE	**Open**
7	SPIRE will provide update test activity sheets to cover resolution of the TBD or empty fields	30/09/04	SPIRE	**Open**
8	A separate WU integration procedure will be provided by RAL. This will cover the WU interconnection harness.	15/10/04	SPIRE	**Open**
9	SPIRE will provide a dedicated integration procedure for the AVMs, based AVM test plan to be provided by ASP (already provided).	15/10/04	SPIRE	**Open**
10	SPIRE: Update of the FPU Handling and Integration Procedure will be provided by SPIRE.	15/10/04	SPIRE	**Open**
11	SPIRE will update the document Operating the SPIRE Instrument .	15/10/04	SPIRE	**Open**
12	SPIRE Functional Test Specification, Current version: 1.2. To be distributed	13/09/04	SPIRE	**Open**
13	Definition of the SPIRE CQM Delivered for system level testing; Has been updated to issue 4. Will be sent within CW 38 (but idem AI 3 here before)	13/09/04	SPIRE	**Open** **Closed** as AI 3 ?
14	ASED will clarify the connectivity to the out- side world in OTN for PCs.	07/10/04	ASED	**Open**
15	SPIRE will provide the packing list and may request some additional tools, if available at ASED idem to AI 10 from H-P-ASP-MN-4776 SPIRE IF Telecon 28-04-04	07/10/04	SPIRE	**Open**
16	ASED will sent the UV lamp spec to SPIRE for check.	17/09/04	ASED	**Closed** mail C.Schlosser HP-ASED-EM-0742-04 20/09/04
17	ASED will provide the warm up curves of the instruments.	30/10/04	ASED	**Open**
18	ASED will provide I/ F drawings.of The EQM SVM Simulator.	17/09/04	ASED	**Closed** by mail H.Faas HP-ASED-EM-0757-04 21/09/04
19	ASP will provide the AVM test plan ()..	09/09/04	ASP	**Closed**
20	SPIRE will provide the detailed breakdown of the SPT, including the cyrocover temperature calibration	15/10/04	SPIRE	**Open**

In blue: Changed since AIT/EMC Meeting 09-09-04 jj/mm/yy : in late still open action

From SPIRE Progress Telecon's (open or changed AI)

N°	ACTION DESCRIPTION Progress Telecon #	DUE DATE	Firm / person	ACTION STATUS
	SCI-PT-30365 - SPIRE IF Telecon # 10 _ 03-09-04			
1	Astrium to clarify and send out the final agenda SPIRE AIT Meeting	07/09/04	ASED	**Closed** by mail H.Faas ref HP-ASED-EM-0708-04 dated 08/09
2	SPIRE to issue update of FPU and MGSE ICD's according to current already agreed status for SPIRE IQR kick-off 16/11/04	16/11/04	SPIRE	**Open**
	SCI-PT-29150 - SPIRE Progress Telecon # 9 _ 23-07-04			
1	B. Collaudin to answer by email who at ASP side will be the contact person to address this issue (design and construction guidelines for the warm interconnecting harness.)	23/07/04	ASP	**Closed** by mail B.Collaudin dated 09/09/04
	SCI-PT-21435 SPIRE Progress Telecon #2_ 29-10-03			
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"	30/11/03	SPIRE	**Still Open** 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. SPIRE shall issue this HDD with corresponding CR to IIDB 3.2 New due date: ~~31/08/04~~ SPIRE IQR kick-off 16/11/04

In blue: Changed since PT #10 - 03/09/04

Annex 3: Extract from ESA CCB 23/July/04
MoM - SCI-PT-29154 23.07.04 final

SPIRE IID-B 3.3

- Status on actions of the ESA CCB (MoM Ref. SCI-PT-24070) concerning SPIRE are attached as ANNEX #1.
- **Section 4.8** Scientific requirements, that can verified during ground test have not been identified by the instrument team.
- Section 5.9.3: Differences between photometer mode and spectrometer mode is negligible. Photometer mode as worst case has been implemented.
- **Section 5.9.6 (Table 5.9-4**) last column (Long Peak BOL/EOL) shall be removed, if there are no long peaks as defined in IID-A in section 5.9.5.6.2
- **Section 5.11.3**: ASP has to check with SPIRE whether the requirement HP-SPIRE-REQ-0200 can be removed. The spacecraft is definitely not capable of providing the required time stamp with the requested accuracy.
- **Section 15.16** The JFET's are not listed as deliverable item for both CQM and PFM. However, it is clear that the JFET's are part of the FPU delivery as described in SPIRE integration procedure. In contradiction to initial planning, the FPU will be delivered already connected to the JFET's.

  Delivery of connector savers are not clear. It shall be clarified for FPU/JFET's and WU, where connector savers are delivered together with the instrument hardware.
- **Section 9.8** VCM shall contain shock tests as separated column.

ANNEX #1: ESA CCB SPIRE IIDB 3.11 STILL OPEN

- **Section 4.8**: to be updated 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. **No improvements**
- **Sections 5.14.1 and 5.14.2**: the next issue of the IID-B will contain explicit requirements, if any. To be clarified by SPIRE. **Nothing has changed ! SPIRE didn't provide the requested information. To be clarified during SPIRE EQM-AIT/EMC Meeting on 9 th September in Ottobrunn**.
- Section 5.16: hardware matrix to be added, to be updated/clarified by SPIRE

  Details have been implemented (JFET's are missing !)
- Sections 9.3 to 9.7 : ASP agrees to 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.

  Has been done (Shock test is missing)

Annex 4: IIDB next issue 3.4 missing inputs

§ #	§ Title	Typ	Subject	Comments ASP	Comments SPIRE 05/10/04
0	DOCUMENT CHANGE RECORD	**U**	Change record	By ASP	
2.2	REFERENCE DOCUMENTS	**U**	Add missing Docs Ref (FDIR, FMECA, …)	SPIRE Input missing	RD 29 SPIRE System interface FMECA, SPIRE-RAL-PRJ-001260 RD 30 Interface FMECA qualification status report for CDR, SPIRE-RAL0NOT-002087 RD31 FDIR procedure definition, SPIRE-RAL-PRJ-001978
3.2	RESPONSIBILITIES	**TBD**	RESPONSIBILITIES table, Paola Andreani, Tel.+39-49-829-TBD	SPIRE Input missing	Change TBD to 3441
4.	INSTRUMENT DESCRIPTION	**U**	In all §4, SPIRE to Include measurable scientific requirement (ESA IIDB CCB)	SPIRE Input missing	
4.6.8	SAFE Mode	**U**	SPIRE to precise that only one command is required to enter the safe mode	SPIRE Input missing	
4.7	OBSERVING MODES	**TBC**	also be done in the observe mode (TBC).	SPIRE Input missing	
4.7.1	Photometer Observing Modes	**TBC**	kinds of observation are implemented as 6 (TBC) observing modes	SPIRE Input missing	
4.7.1.4	Others	**TBD**	POF7 Photometer peak-up (TBD) POF9 Special engineering/commissioning modes (TBD)	SPIRE Input missing	
4.7.3.2	Photometer Parallel	**TBD**	feasibility and scientific desirability of this mode is TBD	SPIRE Input missing	
4.7.6	FPU operations at Ambient Temperature	**TBD**	TBD. It is anticipated that	SPIRE Input missing	Remove TBD
4.8	INSTRUMENT REQUIREMENTS AND PERFORMANCE SPECIFICATION	**U**	All Section 4.8 and sub-sections to be updated by SPIRE, 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 (ESA IIDB CCB)	SPIRE Input missing	
4.8.1	Scientific Requirements	**U**		SPIRE Input missing	
4.8.2	Instrument Performance Estimates	**U**		SPIRE Input missing	
4.8.2.1	Assumptions	**U**		SPIRE Input missing	

§ #	§ Title	Typ	Subject	Comments ASP	Comments SPIRE 05/10/04
5.9.6.1	Load on main-bus	**TBD**	SPIRE to update the tables Long peak should be included in the second table (per LCL) and not in the first one From ESA CCB: Remove Long peak	SPIRE Input missing	last column to be deleted, there are no long peaks
5.11.3	Timing and synchronisation signals	**U**	From ESA CCB: Remove HP-SPIRE-REQ-0200 as the S/C not capable to provide with 5ms accuracy	SPIRE Input missing	Proposed new wording for HP-SPIRE-REQ-0200. When using telescope scan mode, information will be made available to the SPIRE project to enable determination of the start of scan with a precision better than 10ms with respect to the S/C clock.
5.14	EMC	**U**	All EMC section to be completed & updated by SPIRE	SPIRE Input missing	
5.14.1	Conducted Emission/Susceptibility	**U**	Update by NA or explicit requirements, if any	SPIRE Input missing	
5.14.2	Radiated Emission/Susceptibility	**U**	Update by NA or explicit requirements, if any	SPIRE Input missing	
5.14.3	Frequency Plan	**TBC**	Table frequency plan: PSU DC/DC switching frequency 131 KHz (and note)	SPIRE Input missing	
5.16	DELIVERABLE ITEMS	**U**	From ESA CCB: Delivery of connector savers are not clear. It shall be clarified for FPU/JFET's and WU, where connector savers are delivered together with the instrument hardware JFET's are not listed: should be clear that the JFET's are part of the FPU delivery	SPIRE Input missing for §5.16 and all sub-sections up to 5.16.1.5	See ID-B input, E Sawyer, 1/10/04
5.16.1.2	CQM	**U**	SPIRE to deliver detailed list of all necessary equipment to perform EQM tests	SPIRE Input missing	See ID-B input, E Sawyer, 1/10/04
5.16.1.3	PFM	**U**	Clarify and fix Note 1 (FCU & DCU FM delivery)	SPIRE/ASED Input missing	
7.	INTEGRATION, TESTING AND OPERATIONS	**U**	Update with new issue of ref docs	SPIRE Input missing	I don't understand the comment on you missing input list 'update with new issue of reference docs' ASP answer: check the used ref and issues, and add ref doc in all sub-section with no ref (or empty)
7.2.4	EQM and PFM tests list	**U**	Update table with new issue of ref docs	SPIRE/ASED/ASP Input missing	Idem § 7: comment & answer
9.	DEVELOPMENT AND VERIFICATION	**U**	Update with new issue of ref docs	SPIRE Input missing	Idem § 7: comment & answer
9.8	Verification matrix	**U**	From ESA CCB: VCM shall contain shock tests as separated column	SPIRE Input missing	Shock test colum added ref IID-B inputs E.Sawyer 1/10/04

§ #	§ Title	Typ	Subject	Comments ASP	Comments SPIRE 05/10/04
Annex 1	SPIRE ICD/drawings	**U**	FPU and MGSE ICD's to be updated by SPIRE according already agreed status in front page of Annex 1 IIDB 3.3	SPIRE Input missing	
Annex 3	Summary of SPIRE cryoharness wiring functions	**U**	to be deleted and replaced by SPIRE HDD 1.2 to be issued	SPIRE Input missing	
Annex 5	SPIRE HDD 1.1 Deltas	**U**	to be deleted and replaced by SPIRE HDD 1.2 to be issued	SPIRE Input missing	

Legend: Old (before IIDB issue 3.3) input missing
New (after IIDB issue 3.3) input missing

Progress/Status

Eric Sawyer

SPIRE

AVM

- No update from last telecon

CQM

Cold Qualification model

- Modifications to internal thermal interfaces on the detector boxes has been implemented.
- This delayed start of next cold test until end August.
- Testing has gone well, thermal performance with full load is good, analysis needs doing to confirm.
- Hold time 50 hours at 1.7K
- 36 hours at 2K
- NB test cryostat is not fully representative of flight conditions.
- Micro vibration characterisation test complete, results to be assessed.
- Reduced EMC tests being performed.
- November delivery to Spacecraft is ok. DRB planning needs finalising

2K inter-box strap

- High Delta T recorded during cold test
- Strap redesigned to improve performance
- Large area bonded copper to aluminium joints
- This doubles up as electrical isolation joints as well
- Bolted gold plated copper to gold plated copper joints
- Design implemented on CQM
- During last test campaign delta T reduced significantly, about 5mK

L0 straps

- Prototypes made and qualified mechanically during CSL cold vibration test
- Tests on copper samples show poor performance of thin sections
- Annealing improved results but not enough
- Other sources being explored, and samples obtained.
- New annealed foil samples test with good results, 2200W/mK at 1.7K
- Implemented into new L0 straps.
- Halfway through manufacture process.

Interface telecon RAL 7 October 2004

L0 straps

CFRP feet

- Detector box and FPU test units manufactured and tested
- All cold strength tested
- All passed except FPU cone
- Broke below estimated load at bolt cone interface
- Some redesign completed
- All other released for manufacture.
- Some problems with cone manufacture, now resolved.
- Flight and qual units for cold proof test next week.

Warm electronics

- Release for FM manufacture
- No outstanding technical issues.
- No new delays in FM programme

PFM

- Structure manufactured, except CFRP legs and L0 straps
- Cooler –In manufacture, delivery delayed to November which currently is the pacing item for PFM
- DRCU FM manufacture initiated.
- SMEC – CQM in assembly and test, delivery in October, FM in March
- Mirrors –delivered
- BDA - SSW delivered, SLW delivered
- DPU – Status uncertain
- Calibrators, filters – SCAL and filters ready, PCAL in test,.
- BSM – FM and FS delivered
- PFM FPU Mirror mounts integrated, metrology done.
- Alignment complete
- Awaiting subsystems

AIV

- CQM tests phase 1 complete
- Test facility being readied for next phase
- New He level sensor and ‘manostat’ fitted
- Phase 2 started
- Phase 2 will be completed next week.
- New items work well, we can now control L0 temperature.

schedule

Milestones.

- CQM build complete 5/12/03 Complete
- CQM cold verification 1 start 31/01/04 Complete
- Cold vibration end 28/4/04 completed 8/5/04
- CQM Ready for delivery November with DRCU QM1 (temp)
- DRCU (QM1) required for FM programme.
- FM delivery October 05 with QM2 electronics,