

HERSCHEL / PLANCK

Organisation of the Herschel-Planck instrument interface management

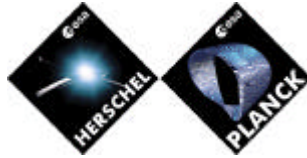
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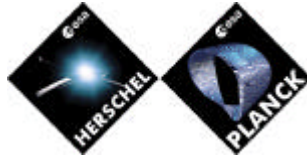
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TABLE OF CONTENTS

1. CONTEXT	5
2. INDUSTRY RESPONSIBILITY AND ORGANISATION	6
2.1 RESPONSIBILITY	6
2.1.1 Alcatel:.....	6
2.1.2 Astrium:.....	7
2.1.3 Alenia:	8
2.2 ORGANISATION:.....	9
2.2.1 Instrument interface team.....	9
2.2.2 Relation with engineering.....	10
2.2.3 Relation with AIV/AIT.....	11
2.3 KEY PERSONNEL:	12
2.4 DUTIES (INDUSTRY)	14
2.5 COMMUNICATION:.....	18
2.5.1 Communication flows.....	18
2.6 MANAGEMENT TOOLS:	19
2.6.1 Meetings	19
2.6.2 Progress reporting from Instruments	21
2.6.3 Progress reporting Industry To ESA.....	21
2.6.4 Working groups.....	22
3. UPDATE OF INSTRUMENTS INTERFACE DOCUMENTS IID A & B	24
3.1 OBJECTIVES.....	24
3.2 ORGANISATION	24
3.2.1 IIDA.....	24
3.2.2 IID-B	24
ANNEX: 1 DUTIES OF AIV/AIT KEY PERSONNEL:	26

1. CONTEXT

ESA has delegated to industry the management of the technical interfaces between the Spacecraft Herschel and Planck, and the instruments, and delivery schedule

The overall Instrument Interface management is described in the IID-A, Chapter 10

The organisation and duties of ESA and industry are described in the work plan (ref draft 13/09/01)

The relations between the prime and the instruments are described in the Partnership agreements, established for each instrument (Doc HP-2-ASPI-CO-0060 to 64 for PACS, SPIRE, HIFI, LFI, HFI).

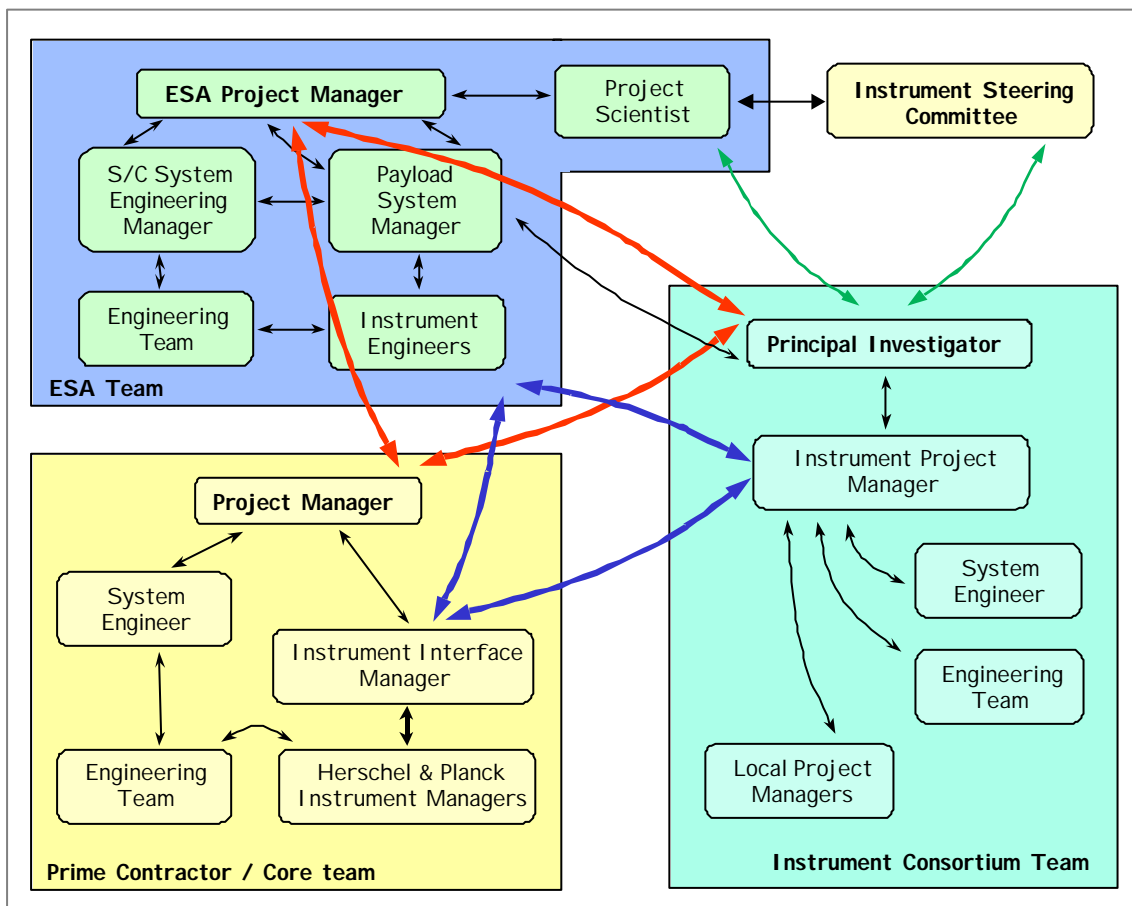
The Statement of work and ESA work plan split the ESA/Industry as follows:

ESA keep the overall responsibility of the instrument design and performances, and of the instrument system & subsystem schedule

Industry is responsible of the instrument technical interfaces, and of the instruments models delivery schedule.

This document describes the industry organisation (Alcatel, Alenia, Astrium) related to the Herschel Planck project Instrument interfaces.

The following chart summarises the overall tripartite organisation ESA/Industry/Instruments



2. INDUSTRY RESPONSIBILITY AND ORGANISATION

2.1 Responsibility

The overall responsibility of instrument interfaces is given to the Prime contractor (Alcatel), with delegation of technical interfaces co-ordination to Astrium (for Herschel instruments FPU, cryostat attached units and cryo-harness) and Alenia (SVM warm units accommodation).

2.1.1 Alcatel:

Alcatel, prime contractor has the overall responsibility of the Herschel and Planck instrument interface management: Technical interfaces and delivery schedule.

The objective is to guarantee the technical and programmatic compatibility between the 5 instruments and the 2 satellites. The definition of the interfaces are written in 2 sets of interface documents: IID B & IID A which are the binding documents between the instruments and the spacecraft.

The tasks identified to reach this compatibility are the following:

1. **Co-ordination of instrument technical interfaces between Instrument and spacecraft engineering teams (chapter 5 of the IID's)**
 - Take into account all requirements of IID-B in the satellite design.
 - Co-ordinate together with the engineering team the definition and evolution of instrument interfaces with the evolution of the spacecraft design.
 - Phase the design activities between spacecraft and instrument design
 - Identify the critical interfaces which will require more effort
 - Co-ordinate interfaces between FPU's (in HPLM and PPLM) and warm units (in SVM).
 - Report and freeze the agreed interfaces in the interface documentation (IID's, ICD's)
2. **Co-ordination of instrument to spacecraft AIV/AIT activities (chapter 6, 7, 9 of the IID's) with the support of the system and modules AIV/AIT teams**
 - Deliverable items refinement (AVM, CQM, FM, FS)
 - Integration activities. Organise phasing and sharing of responsibilities between instrument and AIV team
 - Testing activities: co-ordinate instrument verification requirement (at satellite levels) with the proposed test sequences in AVM, QM, and FM sequences.
3. **Co-ordination of Instrument delivery schedule between instrument (chapter 10 of IID's)**
 - By maintaining fixed milestones for instrument deliveries.
 - Provide the relevant analyses (optimisation or cost impacts) for instrument & spacecraft schedule harmonisation.
 - As the control of the instrument detailed schedule remains in ESA's responsibility, this responsibility can only be shared with ESA
4. **Maintain, edition and approval cycle of the IID's**
 - Control and negotiate the proposed evolution of instrument interface requirements (from instrument or spacecraft request).
 - Identify / minimise changes with design, cost & schedule impact
 - Edit and publish the interface document (IID-B's and A) under configuration control
5. **Co-ordination of the Instrument interface team in Alcatel/Alenia/Astrium**
 - Distribution of responsibilities, optimisation of resources.
 - Scheduling of activities
6. **Co-ordination with ESA**
 - Overall co-ordination of instrument interfaces

- Consistency between the proposed interfaces to the satellite, and the instrument performances
- Schedules analysis & optimisation
- Support to instrument review (documentation analysis and participation to review)
- Main decisions

The focal points of contacts in Alcatel are:

- Bernard Collaudin for overall Herschel and Planck instrument interfaces.
- Glenn Lund for detailed Herschel instrument interfaces
- Jean-Philippe Chambelland for detailed Planck instruments interfaces.

2.1.2 *Astrium:*

Management of the Herschel instrument FPU's, cryostat attached units (LOU and BOLA) and cryo-harness interfaces is fully delegated to Astrium.

This means that, points 1 (Design) and 2 (AIV/AIT) described above are applicable to Astrium, tailored to the level of the Herschel PLM design, and Herschel EPLM AIV and Herschel satellite satellite AIT activities.

The level of delegation is as follows:

- the instruments engineers in Astrium become the focal point of contact between Astrium and Herschel instrument for the technical activities related to refinement of FPU, cryo-harness, and cryostat interfaces
- the exchange of information can be made directly between Astrium and Instruments (always copy to Alcatel and ESA).
- Astrium can initiate technical working meetings with instrument as necessary to fulfil its design tasks. Alcatel and ESA should be informed about these meetings.
- Astrium instrument engineers will co-ordinate the interfaces between FPU and cryostat attached units with the HPLM engineering team (mechanical interface to Optical bench, thermal design, straylight, cryoharness, ...).
- Astrium instrument engineers will co-ordinate the AIV/AIT activities related to the acceptance, integration, and verification of the various instrument FPU models.
- All aspects related to interfaces with SVM must be process with Alenia via Alcatel.
- Support to instrument review (documentation analysis and participation to review)
- Coordinate AIT activities of the 3 Instruments with the one of the Herschel EPLM and satellite.

In addition, the effort of design on the interfaces in HPLM should be aimed also at documenting the achievements in the interface documents (IID'B's and A, and interface control drawings). Astrium is requested to organise the scheduling of the interfaces freezing together with instrument, and provide the relevant input for the interface document

The input to IID-B will have to be first agreed between Instrument and Astrium agreed with Alcatel, before to be proposed for update of the interface document.

The focal points of contacts are:

- Siegmund Idler for HIFI FPU, LOU, wave-guides technical interfaces
- Horst Faas for SPIRE FPU technical interfaces
- Dietmar Schink for PACS FPU & BOLA technical interfaces

2.1.3 Alenia:

Management of the Herschel and Planck instrument warm units interfaces is fully delegated to Alenia.

However, due to the large number of instruments and warm boxes, and the limited resources in Alenia, the focal point of contact for all these warm units aspects will remain in Alcatel (Planck and Herschel instrument engineers)

Alenia responsibility is to

- organise the relevant and up to date interface data (from IID-B's, interface meeting, technical) necessary for the design and engineering activities
- manage the interfaces with instruments for the purpose of AVM testing.
- Comment on these data
- feedback the SVM design information relevant for IID-A

In addition, the effort of design on the interfaces in SVM should be aimed also at documenting the achievements in the interface documents (IID-B's and A, and interface control drawings). Alenia is in charge to organise the scheduling of the warm units interfaces freezing together and provide the relevant input for the interface documents.

The input to IID-B will have to be first agreed between Instrument, Alcatel and Alenia, before to be proposed for update of the interface document.

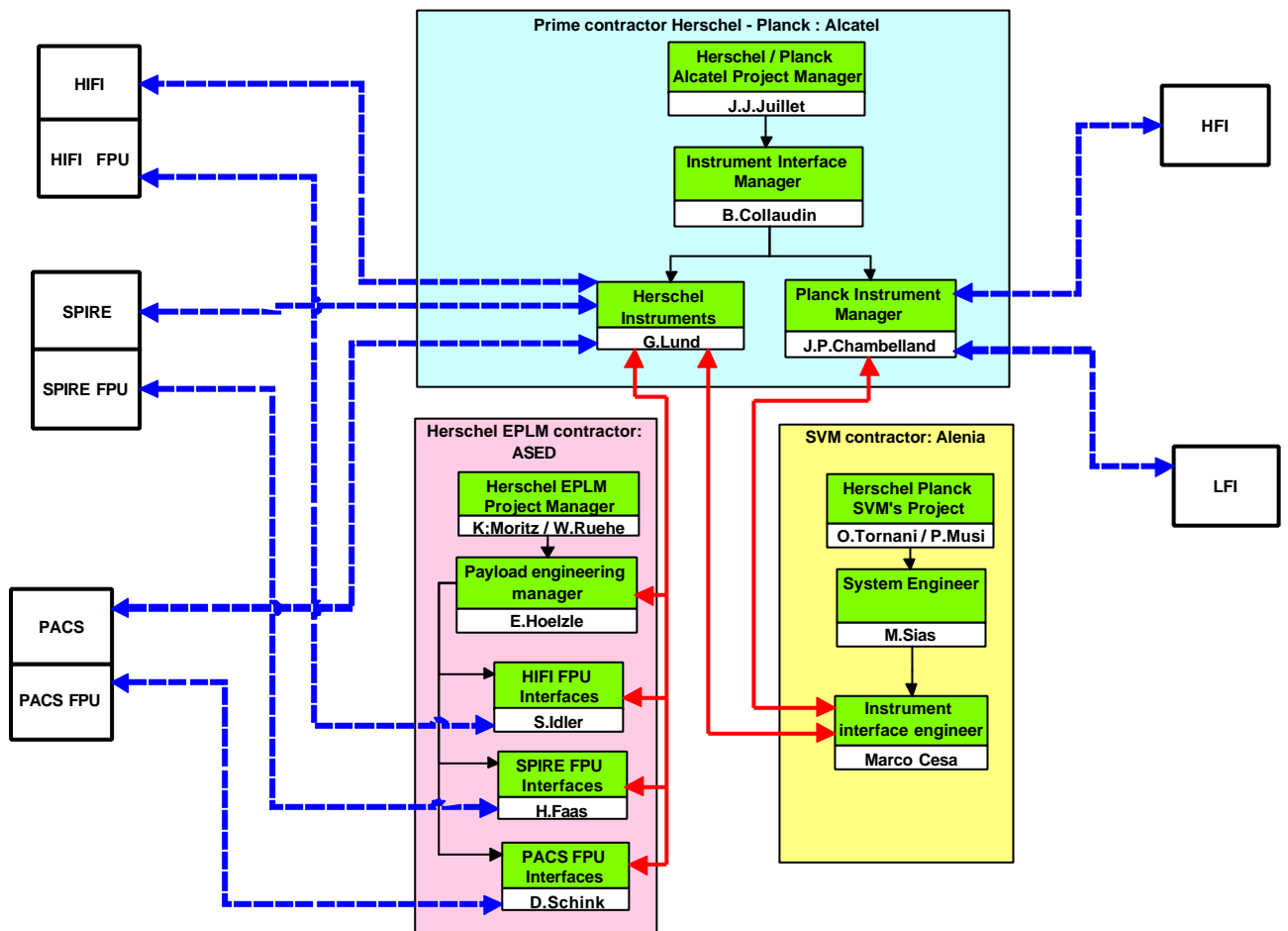
The interface engineer in Alenia is:

- Marco Cesa

2.2 Organisation:

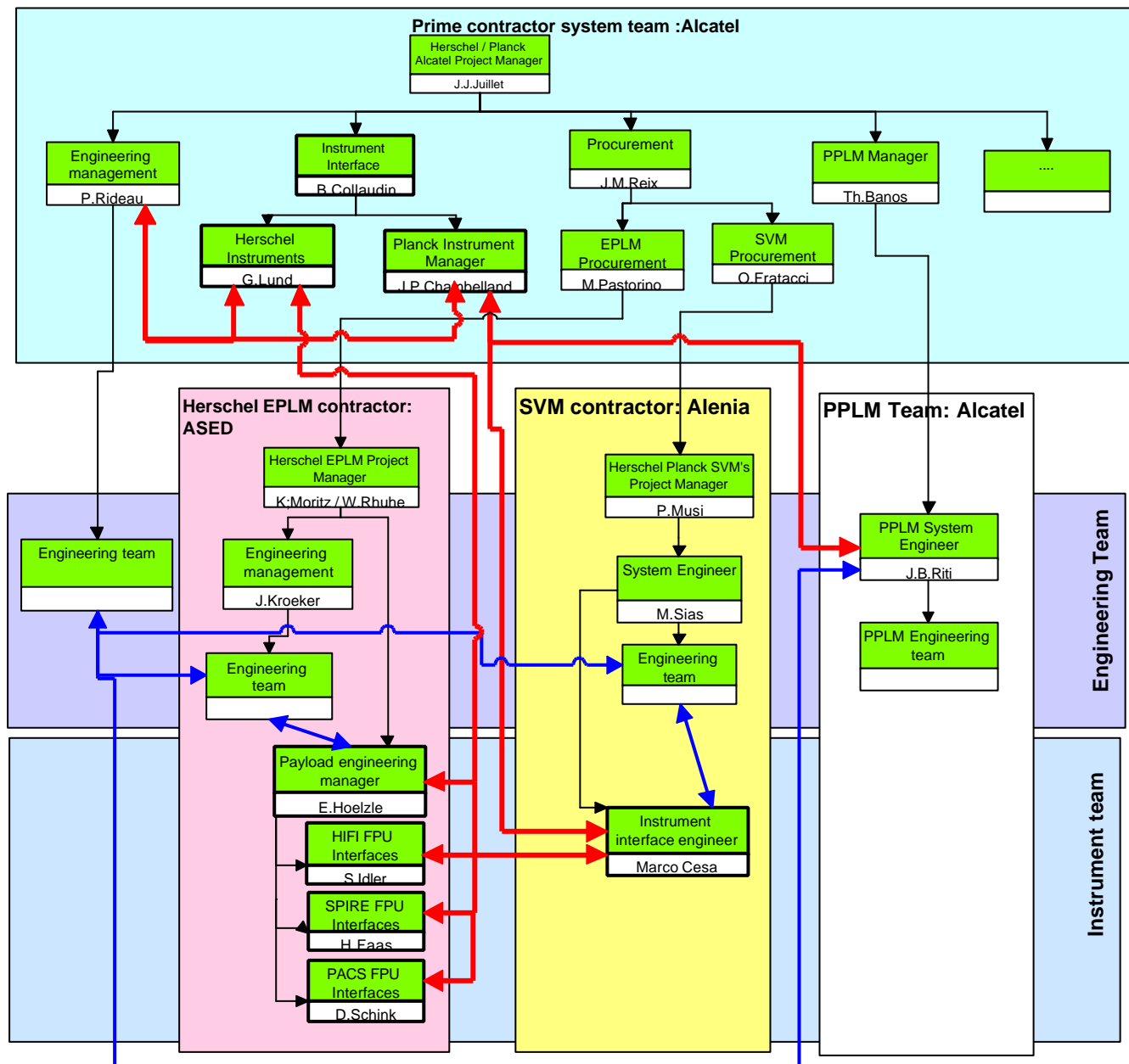
2.2.1 Instrument interface team

The following organisation chart shows the instrument interface team in industry, the communication link inside industry (hierarchical (thin black) and functional (thick red arrows), and contact points with instrument (thick blue arrows)



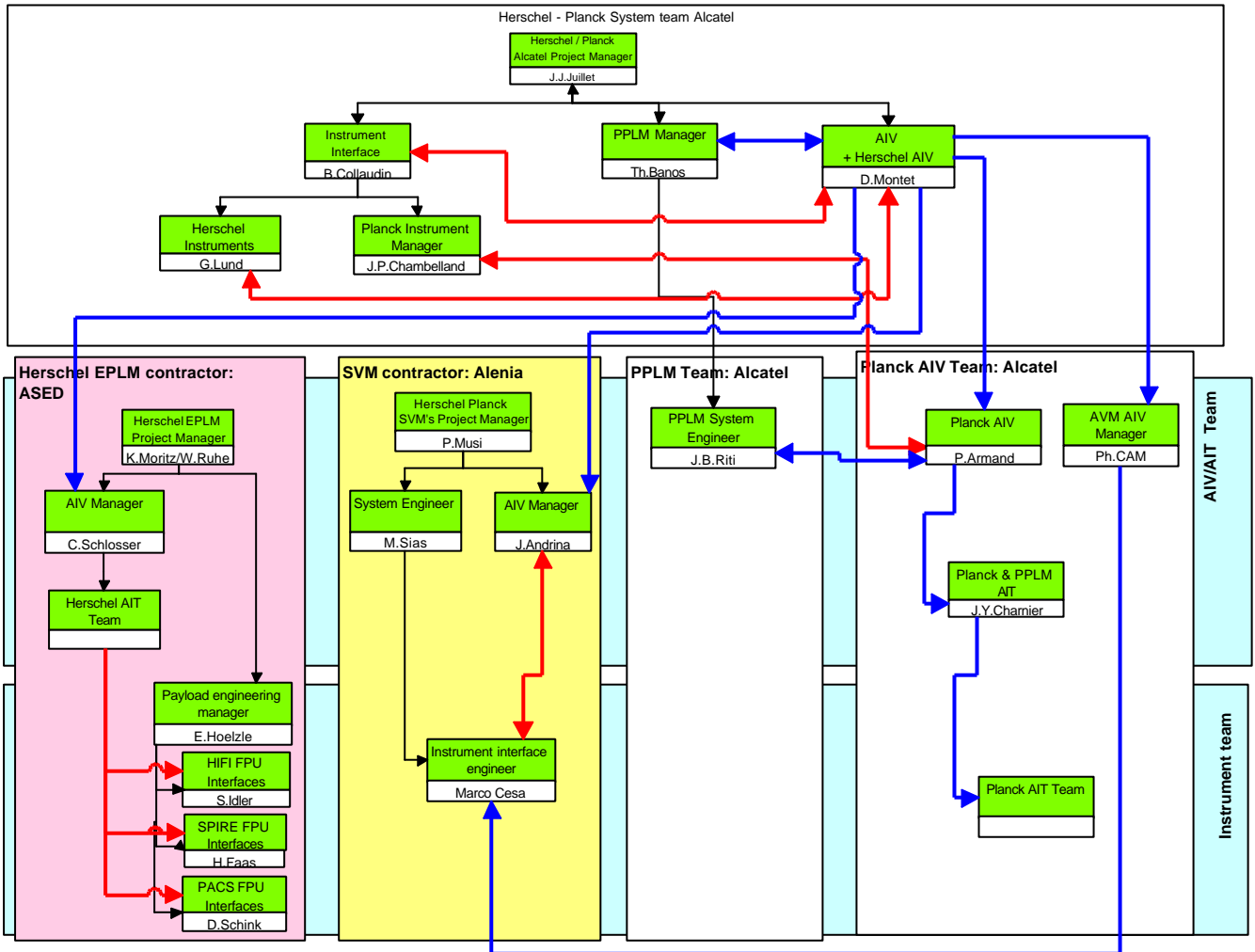
2.2.2 Relation with engineering

The following chart describes the relationships between instrument interface teams, and engineering teams at Alcatel, Astrium and Alenia.



2.2.3 Relation with AIV/AIT

This chart shows the various AIV/AIT team in industry, and their relation with Instrument teams.



2.3 Key personnel:

ESA and Industry Instrument interface Key personnel

name	Satellite	company	tel	e.mail	fax	rôle
Gerald Crone	Herschel/Planck	ESA	+31 71 565 3934	Gerald.Crone@esa.int	+31 71 565 5244	Herschel / Planck payload manager
Jean Bruston	Herschel	ESA	+31 71 565 3962	Jean.Bruston@esa.int	+31 71 565 5245	SPIRE & HIFI instrument manager
Astrid Heske	Herschel/Planck	ESA	+31 71 565 5467	Astrid.Heske@esa.int	+31 71 565 5246	PACS & sorption cooler instrument manager
Javier Marti Canales	Planck	ESA	+31 71 565 4531	Javier.Marti-Canales@esa.int	+31 71 565 5247	HFI & LFI instrument manager
Bernard Collaudin	Herschel/Planck	Alcatel	+33 4 92 92 30 21	bernard.collaudin@space.alcatel.fr	+33 4 92 92 30 10	Instrument interface manager Coordination of Herschel & Planck instrument interface activities Book-captain of IID-A
Jean-Philippe Chambelland	Planck	Alcatel	+33 4 92 92 74 48	Jean-philippe.chambelland@space.alcatel.fr	+33 4 92 92 30 10	Contact point and Processing of Planck instruments interfaces, Coordination of Planck instruments interfaces activities between instruments, Alcatel, Astrium and Alenia. Book-captain of the 2 Planck instruments IID-B's (HFI, LFI + SCS)
Glenn Lund	Herschel	Alcatel	+33 4 92 92 34 06	glenn.lund@space.alcatel.fr	+33 4 92 92 30 10	Contact point and Processing of Herschel warm units interfaces Coordination of Herschel instruments interfaces activities between instruments, Alcatel, Astrium and Alenia. Book-captain of the 3 Herschel instruments IID-B's (PACS, SPIRE, HIFI)
Edgar Hoelzle	Herschel FPU's	Astrium	+49 75458 3668	edgar.hoelzle@astrium-space.com	+49 7545 8 42 43	Coordinate the Astrium payload teams (instruments/telescope/straylight)
Horst Faas	Herschel FPU's	Astrium	+49 75458 3990	horst.faas@astrium-space.com	+49 7545 8 42 43	Contact point for SPIRE FPU interfaces Processing of SPIRE FPU & related cryoharness interfaces
Dietmar Schink	Herschel FPU's	Astrium	+49 75458 9414	dietmar.schink@astrium-space.com	+49 7545 8 42 43	Contact point for SPACS FPU & BOLA interfaces Processing of PACS & BOLA & related cryoharness interfaces
Siegmund Idler	Herschel FPU's	Astrium	+49 75458 4671	siegmund.idler@astrium-space.com	+49 7545 8 42 43	Contact point for HIFI FPU & LOU interfaces Processing of HIFI & LOU & related cryoharness & wave-guides interfaces
Marco Cesa	Herschel/Planck	Alenia	+39 011 7180 934	mcesa@to.alespazio.it	+39 011 7180 637	Coordination of instrument interface data for Alenia engineering team.

Instrument key personnel

Instru ment	First Name	Family name	Institute	Phone institute	Cell Phone	Fax	e_mail
Principal investigators							
HFI	Jean-Loup	Puget	IAS	+33 1 6985 8665	+33 6 83 83 88 88	+33 1 69 85 86 75	puget@ias.fr
HIFI	Thijs	de Graauw	SRON-Groningen	+31 50 363 4074		+31 50 363 4033	thijsdg@sron.rug.nl
LFI	Nazzaren	Mandolesi	IASR	+39 051 639 8682		+39 051 639 8724	reno@tesre.bo.cnr.it
PACS	Albrecht	Poglitsch	MPE	+49 89 30000 3293		+49 89 30000 3292	alpog@mpe.mpg.de
SPIRE	Matt	Griffin	Cardif	+44 29 2087 4203		+44 29 2087 4056	Matt.Griffin@astro.cf.ac.uk
Instrument Project Managers							
HFI	Jacques	Charra	IAS	+33 1 69 85 85 83	+33 6 87 73 06 76	+33 1 69 85 86 75	charra@ias.u-psud.fr
HIFI	Kees	Wafelbakker	SRON - Utrecht	+31 30 253 5711		+31 30 254 0860	C.K.Wafelbakker@sron.nl
LFI	Chris	Butler	IASR	+39 051 639 8697		+39 051 639 8723	butler@tesre.bo.cnr.it
PACS	Otto	Bauer	MPE	+49 89 30000 3591		+49 89 30000 3272	ohb@mpe.mpg.de
SPIRE	Ken	King	RAL	+44 1235 44 6558		+44 1235 44 6667	k.j.king@rl.ac.uk
Instrument Project Offices							
HFI	Valerie	Demuyt	IAS	+33 1 69 85 85 13		+33 1 69 85 86 75	valerie.demuyt@ias.u-psud.fr
HIFI		Project Office HIFI	SRON-Groningen	+31 30 2535704		+31 30 2540860	HIFI-Prof@sron.nl
LFI		Project Office LFI	IASR	+39 051 6398697		+39 051 6398724	taddei@tesre.bo.cnr.it
PACS		Project office PACS	MPE	+49 89 30 000 3880		+49 89 30000 3272	pac@mpg.de
SPIRE	Judy	Long	RAL	+44 1235 446322		+44 1235 446667	J.A.Long@rl.ac.uk
Instrument AIV/AIT interface							
HFI	André	Chardin	IAS	33 1 69 85 85 38		+33 1 69 85 86 75	Andre.CHARDIN@ias.u-psud.fr
HIFI							
LFI							
PACS							
SPIRE							

2.4 Duties (Industry)

Instrument interface Manager.	
Responsible:	Bernard COLLAUDIN, Alcatel
Duties	<p>Overall responsibility of instrument technical interfaces and delivery schedule. Co-ordination of Instrument interface team Co-ordination of working groups Edition of IID-A Responsibility of IID-A update (collecting technical, schedule & cost impacts, distribution and approval cycle) Monthly Reporting to ESA, and progress meetings: General aspects, Synthesis of main points, co-ordination. Distribution of information common to all instruments Participation to Spacecraft Management and engineering meetings Participation to instrument review Participation to Science team meetings, instrument consortium meetings as needed</p>
Communication	<p>With Instruments PI's and Project manager</p> <p>Management issues. Major technical issues (impacting cost & schedule) distribution of information common to all instruments, IID-A approval</p>
	<p>With ESA Payload and project manager</p> <p>Management issues,</p>
	<p>With Alcatel Engineering team</p> <p>Design issues related to Instrument interfaces IID-A update</p>
	<p>With Astrium and Alenia instrument engineers and engineering teams</p> <p>Management issues,</p>

Herschel Instrument Engineer.	
Responsible:	Glenn LUND, Alcatel
Duties	<p>Responsibility of Herschel Instruments technical interfaces and delivery schedule. Responsibility of the IID's Change process. Edition of Herschel instruments IID-B's (SPIRE, PACS, HIFI) Monthly Reporting related to Herschel instruments. Co-ordination of FPU interfaces (Astrium) and Warm units accommodation (Alenia). Organisation, chair of Herschel instruments technical meetings. Management of related actions. Participation to Herschel instruments reviews. Participation to instruments testing Maintain Herschel instruments budgets (Mass, power demand, dissipation, ...).</p>
Communication	<p>With Herschel Instruments PI's and Project managers</p> <p>Technical and schedule issues. IID-B's</p>
	<p>With ESA Herschel Instrument engineers</p> <p>Reporting, approval for CCN's</p>
	<p>With Alcatel Engineering system team</p> <p>Circulation of Change requests, collect impacts, get actions</p>

	With Astrium payload team	Co-ordinate FPU activities and interfaces with the rest of Herschel FPU and cryostat attached items interfaces H-PLM design issues related to instruments
	With Alenia Payload engineer	Warm units accommodation

	Planck Instrument Engineer.	
Responsible:	Jean-Philippe Chambelland, Alcatel,	
Duties	Responsibility of Planck Instruments technical interfaces and delivery schedule. Responsibility of the Planck IID's Change request. Edition of Planck instruments IID-B's (HFI, LFI, Sorption cooler ICD) Monthly Reporting related to Planck instruments Co-ordination of FPU interfaces (Alcatel Planck team) and Warm units accommodation (Alenia). Organisation, chair of Planck instrument technical meetings. Management of related actions. Participation to Planck instruments reviews Maintain Planck instruments budgets (Mass, power demand, dissipation, ...).	
Communication	With Planck Instruments PI's and Project managers With ESA Planck Instrument engineers With Alcatel Engineering system team With Alcatel PPLM Engineering team With Alenia Payload engineer	

	Astrium Payload Manager	
Responsible:	Edgar Hoelzle, ASED	
Duties	Delegation of Herschel Instruments FPU technical interfaces. Responsibility of Herschel Telescope technical interfaces Monthly Reporting related to Herschel instruments FPU's Coordination of Astrium Payload team Coordination of FPU interfaces with Astrium Engineering team, and with Alcatel Participation to Herschel instrument interface meetings Participation to Herschel instruments reviews Maintain Herschel instruments FPU budgets (Mass, power demand, dissipation, ...).	
Communication	With Herschel Instruments Project managers With ESA Herschel Instrument engineers With Alcatel Engineering system team	

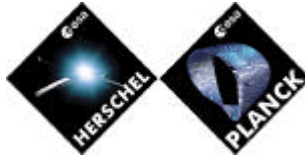
	HIFI FPU & cryostat attached Units Payload Manager	
Responsible:	Siegmond Idler, ASED	
Duties	Focal point of contact for HIFI Cold units (HIFI FPU, LOU). Delegation of HIFI Instruments Cold units technical interfaces. Monthly Reporting related to HIFI instruments Cold Units. Co-ordination of HIFI Cold units interfaces with Astrium Engineering team, and with Alcatel Organisation of HIFI Cold units dedicated technical meeting as needed to freeze technical interfaces. Participation to Herschel instrument interface meetings Maintain HIFI Cold units instruments budgets (Mass, power demand, dissipation, ...).	

	...).
	Analyse instrument proposed changes from HIFI interfaces. Propose updates to IID-A related to HIFI Cold units
Communication	With HIFI Instruments Project manager Engineering team With ESA HIFI Instrument engineers With Alcatel Engineering system team

	PACS FPU & cryostat attached Units Payload Manager
Responsible:	Dietmar Schink, ASED
Duties	Focal point of contact for PACS Cold units (PACS FPU, BOLA). Delegation of PACS Instruments Cold units technical interfaces. Monthly Reporting related to PACS instruments Cold Units. Co-ordination of PACS Cold units interfaces with Astrium Engineering team, and with Alcatel Organisation of PACS Cold units dedicated technical meeting as needed to freeze technical interfaces. Participation to Herschel instrument interface meetings Maintain PACS Cold units instruments budgets (Mass, power demand, dissipation, ...). Analyse instrument proposed changes from PACS interfaces. Propose updates to IID-A related to PACS Cold units
Communication	With PACS Instruments Project manager & Engineering team With ESA PACS Instrument engineers With Alcatel Engineering system team

	SPIRE FPU & cryostat attached Units Payload Manager
Responsible:	Horst Faas, ASED
Duties	Focal point of contact for SPIRE Cold units (SPIRE FPU, BOLA). Delegation of SPIRE Instruments Cold units technical interfaces. Monthly Reporting related to SPIRE instruments Cold Units. Co-ordination of SPIRE Cold units interfaces with Astrium Engineering team, and with Alcatel Organisation of SPIRE Cold units dedicated technical meeting as needed to freeze technical interfaces. Participation to Herschel instrument interface meetings Maintain SPIRE Cold units instruments budgets (Mass, power demand, dissipation, ...). Analyse instrument proposed changes from SPIRE interfaces. Propose updates to IID-A related to SPIRE Cold units
Communication	With SPIRE Instruments Project manager & Engineering team With ESA SPIRE Instrument engineer With Alcatel Engineering system team

	Alenia Payload Manager
Responsible:	Marco Cesa, Alenia
Duties	Delegation of Instruments warm unit accommodation in Herschel and Planck SVM. Co-ordination of Warm units technical interfaces with Alenia Engineering team and Alcatel Monthly Reporting related to instruments warm units accommodation Participation to instrument technical meetings Maintain instruments warm units budgets (Mass, power demand, dissipation, ...). Propose updates to IID-A related to SVM description and Instrument warm units accommodation Management of Instrument interfaces for AVM testing activities



Communication	With Alcatel Instrument team With Alcatel Engineering team With Alenia Engineering team With ESA SPIRE Instrument engineer With instruments as needed for clarification
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2.5 Communication:

Daily communication is established by telephone, e.mail, or fax.
 Important mails should have a project reference, and be sent in addition to project offices.

2.5.1 Communication flows

2.5.1.1 Communication of Industry with Instruments

2.5.1.1.1 Instrument to industry:

The following list gives the contact points and copy list for each instrument

Purpose		Send to (contact point):	copy to			
Herschel	Herschel warm units	Glenn Lund	Marco Cesa		ESA	bernard Collaudin
Herschel	PACS FPU	Dietmar Schink	Edgar hoelzle	Glenn Lund	Astrid Heske	bernard Collaudin
Herschel	SPIRE FPU	Host Faas	Edgar hoelzle	Glenn Lund	Jean Bruston	bernard Collaudin
Herschel	HIFI FPU	Siegmund Idler	Edgar hoelzle	Glenn Lund	Jean Bruston	bernard Collaudin
Planck	Planck FPU	Jean-Philippe Chambelland			Javier Marti Canales	bernard Collaudin
Planck	Planck Warm units	Jean-Philippe Chambelland	Marco Cesa		Javier Marti Canales	bernard Collaudin
Planck	Sorption cooler	Jean-Philippe Chambelland	Marco Cesa		Astrid Heske	bernard Collaudin

2.5.1.1.2 Industry to instruments

Technical communication shall be made to Instruments project manager, copy to project office, + copy to the relevant technical engineer. Communication issued by Astrium and Alenia shall include Alcatel and ESA relevant instrument engineer in the copy list.

Communication with managerial impact should be addressed to PI, copy project manager, and project office, copy to the ESA payload manager.

2.5.1.2 Communication of Industry with ESA

Each responsible of a specific instrument communicates mainly with the corresponding instrument manager in ESA:

J.Marti Canales (HFI, LFI)

A.Heske (SCS, PACS)

J.Bruston (HIFI, SPIRE)

2.5.1.3 Communication among Industry

Regular (weekly) teleconference between Alcatel and Astrium shall be held to co-ordinate Herschel instrument interfaces.

Management meeting shall be organised

Communication tools

2.5.1.4 Informal communication

Email or phone.

2.5.1.5 Formal communication

mails or faxes with reference number.

Copy to project office.

This applies for reply to action, and important mails which will need to be refer to.

2.6 Management Tools:

2.6.1 Meetings

2.6.1.1 Instrument Interface meetings

2.6.1.1.1 Objectives / Goals

- Status of instrument interfaces, budgets and schedule (one instrument at a time)
- Identification of evolutions of the interfaces, agreement and proposed update of the interface documents
- Identification of critical interfaces having impacts on the interface, or on the delivery schedule.
- Delegate solution of technical problems to engineering teams (action or specific technical meetings), or to the relevant working groups

2.6.1.1.2 Participants

Alcatel Instrument engineer (chairman), supported by Astrium or Alenia instrument engineer as relevant.

Instrument project manager

ESA instrument engineer

ESA & Alcatel PA engineers as needed

Support from system engineering team as needed

Support from instrument engineering team as needed.

Support from PA as needed (ESA , industry, instrument)

2.6.1.1.3 Frequency

Every 1 -2 months.
Meeting plan shall be established for the next 3 months

2.6.1.2 Technical working meetings

2.6.1.2.1 Objectives / Goals

Resolution of specific interface or design problem involving interaction between industry and instrument specialists.
Initiated by industry (instrument or FPU interface engineer), or instrument.

2.6.1.2.2 Participants

- As needed

2.6.1.2.3 Frequency

- As needed

2.6.1.3 Logistic for meetings

2.6.1.3.1 Preparation

Agenda should be sent by the chairman to all participants 1 week before the meeting, with clear objective, subject list and preparation responsibilities

Evolution of interface documentation should be prepared with a wish list allowing industry to discriminate changes with cost impacts from changes without impacts.

2.6.1.4 Instruments AIV/AIT meetings

2.6.1.4.1 Objectives / Goals

Preparation of test programme, preparation of specific AIT tasks involving interaction between industry and instruments.

2.6.1.4.2 Participants

- Instrument engineers
- AIV & AIT key personnel
- Engineering support as needed.

2.6.1.4.3 Frequency

- To be commonly agreed. Bi-monthly up to 6 months before integration, then monthly basis.

2.6.1.5 Logistic for meetings

Initiated by industry. Chaired by AIT/AIV.

2.6.1.5.1 Preparation

Agenda should be sent by the chairman to all participants 1 week before the meeting, with clear objective, subject list and preparation responsibilities

Evolution of interface documentation should be prepared with a wish list allowing industry to discriminate changes with cost impacts from changes without impacts.

2.6.1.5.2 Management of minutes and actions.

Minutes are written by the Meeting secretary.

Electronic copy of the handout (powerpoint or pdf) sent to the chairman before the meeting.

Minutes are typed or scanned, and combined with attachment.

Action are typed, included into Action management tool, and distributed (excel) the next day

Minutes are made available on Livelink or by e.mail within 3 days (meeting database)

Open action list distributed on a regular basis.

Answer to action shall be configured (ref. number) shall include the meeting and action reference in the mail title, and be send on time to the relevant people, copy to the meeting chairman, and the relevant project offices.

2.6.2 Progress reporting from Instruments

2.6.2.1 Objective goals

Status of instrument with enlightening of critical points

2.6.2.2 Delivery

2.6.2.3 Typical content

1. GENERAL

- 1.1 Instrument Performance
- 1.2 Problem Areas and Remedial Action
- 1.3 Meetings held
- 1.4 Documents issued

2. INSTRUMENT MANAGEMENT

3. INSTRUMENT ENGINEERING

- 3.1 Instrument Design changes
- 3.2 PA/QA
- 3.3 Budgets
- 3.4 AIV

4. INSTRUMENT SUBSYSTEMS

5. SCHEDULE

6. ACTION ITEM LIST

2.6.3 Progress reporting Industry To ESA

2.6.3.1 Objective goals

Monthly status of instrument interface

2.6.3.2 Delivery

2.6.3.3 Typical content

2.6.4 Working groups

2.6.4.1 Objectives / Goals / Assignment

Working groups are working meetings regrouping of specialists from Instrument, Industry, ESA, to solve specific technical problems common to instruments, or affecting the instrument performances or interfaces in a common way.

A clear objective is to reach an agreement on the content of IID-A.

More than meetings, the working groups should be organised as working forum, with a specific mailing list, and a responsible/point of contact, leading the working group.

Meeting groups can be common to both spacecraft (EMC, data handling), or specific to Herschel or Planck.(telescope, AIV)

2.6.4.2 Initiation / Termination of a Working group.

Working groups should be initiated during the Instrument technical meetings, where clear assignments and task or set of tasks are given, together with the relevant input, and requested output.

Conclusion on a specific topic should be published as a technical note, agreed by all parties, and distributed to in instrument interface management team.

Working group should be terminated when the assigned tasks are executed.

2.6.4.3 Existing / desirable working groups

2.6.4.3.1 Existing working groups

EMC Working group: L.Trougnou) (current task: EMC modelling)

Data management / Power working group (P.Couzin /K.R.Hibbert) (active current task: Science Data rate for instruments)

Cleanliness Contamination (CMasse) (current tasks: contamination levels requirements for spacecraft)

Planck Cryogenics (TBD) (initiated task: Planck coolers system aspects)

Herschel Thermal/Cryogenics (one held up to now)

2.6.4.3.2 Working groups chaired by ESA

Herschel Telescope/Alignment working Group (D.de Chambure/ESA) (current task: alignment plans, and telescopes interfaces)

Planck Telescope working group

2.6.4.4 Participants, responsibility

One designated specialist representative from each organisation per working group (ESA, Instrument, Alcatel, Alenia, Astrium)

+ specialists as needed, designated on a case by case basis.

Each working group should be chaired by the prime contractor.

Minutes and actions are managed and distributed by the prime contractor.

3. UPDATE OF INSTRUMENTS INTERFACE DOCUMENTS IID A & B.

3.1 Objectives

The objective of this note is to define the action plan to obtain for the PDR (June 2002) an agreed and consistent set of Herschel & Planck Instrument Interface documents (IID A describing the spacecraft interfaces, and the 5 instruments IID B).

Consistent mean that the IID-B document should be consistent with the instrument status at the IBDR's (Instrument baseline design review performed in Feb-March 2002), and the IID-A consistent with both the IID-B and the Spacecraft design at PDR.

Agreed means that they can be signed by Instrument and industry as requirement and commitment.

3.2 Organisation

It is propose to change the IID change process to improve efficiency. The number of change requests should be limited to the modification with expected cost or schedule impacts.

3.2.1 IIDA

The Change request method will be stopped for IID-A, as no ECP is expected from instruments. However, the changes should be tracked in a red-lined version.

It is proposed to update the IID-A to reflect the design evolution or of the agreed changes of the instruments (compatibility with IID-B's).

The document will be updated with input from payload teams and engineering teams from industry (Alcatel, Astrium, Alenia).

The main modifications will have to get the agreement of ESA and instruments (circulation of red-lined chapters) before to be implemented in the main document. The red lined document will be distributed to ESA and instrument

3.2.2 IID-B

Proposed changes are discussed in instrument interface meetings before they are issued. Changes with cost & schedule impacts are identified and configured (change requests).

Instrument will issue change list which will be evaluated by industry to identify the changes that will have design impact (cost or schedule).

Instrument can also propose changes to IID-B, to reflect the assumption and formalise the data given by instruments and currently used for the design

This list is reviewed by ESA/industry,

- to identify the changes which have cost & schedule impacts,
- to identify which changes must be included in the next version of IID-B.

The change list will be discussed in a negotiation meeting where changes are explained, negotiated (agreed, or rejected). A the end of the meeting, the list of changes should be agreed and signed.

Changes without cost & schedule impacts are to be implemented in a red line version of the IID-B.

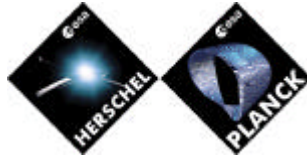


For the changes that have cost or schedule impact, a change request is issued, and action are taken (with identified responsible) to evaluate the impacts (design, cost, schedule), and an ECP is established by industry to ESA. A maximum of 4 weeks should be allowed to propose the ECP.

ANNEX: 1 DUTIES OF AIV/AIT KEY PERSONNEL.:

Herschel/Planck AIV Manager	
Responsible	Denis MONTET, ALCATEL
Duties	<p>Co-ordination of industry AIV/AIT teams Coherence of overall development and verification philosophy from instrument level up to Herschel and Planck satellites taking into account:</p> <ul style="list-style-type: none"> - design peculiarities of instruments (AVM/CQM built standard,...) - qualification status of instruments - specific instrument testing at PLM & System levels - programmatic constraints (cost and schedule impacts on Satellite delivery due to delivery dates of instruments) <p>Propose update of IIDA related to general AIV aspects Review and approval of "Tests Requirement Specifications" from Herschel instruments Follow-up of Herschel instrument development and verification tests.</p>
Communication with	ESA AIV Manager ESA Payload Manager ALCATEL Instrument Interface Manager ALCATEL Engineering Manager ALCATEL AIT/AIV Team astrium AIV/AIT Manager ALENIA AIV/AIT Manager

Planck AIV Manager	
Responsible	Pierre ARMAND, ALCATEL
Duties	<p>Coherence of Planck development and verification philosophy from instrument level up to PPLM and Satellite levels taking into account:</p> <ul style="list-style-type: none"> - qualification status of Planck instruments - specific instrument testing at PPLM & Planck S/C levels - programmatic constraints (cost and schedule impacts on Satellite delivery due to delivery dates of Planck instruments) <p>Propose update of IIDA related to Planck AIV aspects Review and approval of "Tests Requirement Specifications" from Planck instruments Follow-up of Planck instrument development and verification tests.</p>
Communication with	ESA AIV Manager ESA Planck Instruments Engineers ALCATEL Planck Instruments Engineer ALCATEL Engineering team ALCATEL AIT team Planck Instrument AIV Managers



Herschel EPLM AIV Manager & Satellite AIT Responsible	
Responsible	Christian SCHLOSSER, astrium
Duties	<p>Coherence of Herschel EPLM development and verification philosophy from instrument level up to EPLM taking into account:</p> <ul style="list-style-type: none"> - qualification status of Herschel instruments - specific instrument testing at EPLM level (including EQM) and then at Herschel S/C level - programmatic constraints (cost and schedule impacts on Satellite delivery due to delivery dates of Herschel instruments) <p>Propose update of IIDA related to Herschel AIV aspects Review and approval of "Tests Requirement Specifications" from Herschel instruments Follow-up of Herschel instrument development and verification tests Co-ordination of astrium AIT team Coherence and management of overall Herschel AIT work plan from instrument level up to EPLM and satellite levels taking into account:</p> <ul style="list-style-type: none"> - interfaces with instrument - definition of the necessary AIT documentation from instruments - definition of the necessary support from instrument during AIT phases <p>Review and approval of AIT documentation from Herschel instruments</p>
Communication with	ESA AIV Manager ESA Planck Instruments Engineers ALCATEL AIV Manager ALCATEL Herschel Instruments Engineer ALCATEL Engineering team astrium Engineering team astrium Herschel Instruments Engineers Herschel Instrument AIV Managers

SVM AIV Manager	
Responsible	Guiseppa ANDRINA, ALENIA
Duties	Coherence of AVM and PFM development and verification philosophy at SVM level taking into account: <ul style="list-style-type: none"> - design peculiarities of instruments (AVM built standard,...) - specific instrument testing at SVM level Review of specific AVM "Tests Requirement Specifications" from Herschel & Planck instruments
Communication with	ESA AIV Manager ESA Instruments Engineers ALCATEL Instrument Engineers ALCATEL Engineering team ALCATEL AIV Manager ALCATEL AVM Manager ALENIA Instrument Engineer ALENIA Engineering team Instrument AIV Managers

AVM AIV Manager	
Responsible	Philippe CAM, ALCATEL
Duties	Coherence of system AVM development and verification philosophy from SVM level up to Herschel and Planck satellites taking into account: <ul style="list-style-type: none"> - design peculiarities of instruments (AVM built standard,...) - specific instrument testing at SVM & Satellite levels Review and approval of specific AVM "Tests Requirement Specifications" from Herschel & Planck instruments
Communication with	ESA AIV Manager ESA Instruments Engineers ALCATEL Instrument Engineers ALCATEL Engineering team ALCATEL AIT team ALENIA Instrument Engineer ALENIA AIV/AIT Manager



	Planck AIT Responsible
Responsible	Jean-Yves CHARNIER, ALCATEL
Duties	<p>Co-ordination of ALCATEL AIT team supported by:</p> <ul style="list-style-type: none"> - Bernard DUBOIS, ALCATEL, for EGSE interfaces - Philippe SCHLOSSER, ALCATEL, for MGSE & mechanical integration - Jean-Pierre HAYET, ALCATEL, for electrical integration and tests <p>Management of the Planck AIT work plan taking into account</p> <ul style="list-style-type: none"> - interfaces with instrument - definition of the necessary AIT documentation from instruments - definition of the necessary support from instrument during AIT phases <p>Coherece of overall Planck AIT from instrument level up to PPLM and satellite levels taking into account:</p> <ul style="list-style-type: none"> - design peculiarities of instruments - specific instrument testing at PPLM & Satellite levels - programmatic constraints (cost and schedule impacts on Satellite delivery due to delivery dates of instruments) <p>Propose update of IIDA related to general AIT aspects</p> <p>Review and approval of AIT documentation from Planck instruments</p>
Communication with	<p>ESA AIV Manager ESA Instruments Engineers ALCATEL Instrument Engineers ALCATEL Engineering team Planck Instrument AIV Managers</p>

END OF DOCUMENT