

Herschel / Planck Project

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subject **Instrument Baseline Design Review – Proceedings**

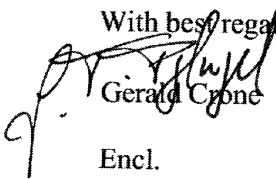
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Dear all,

In preparation for the next formal ESA review, the Instrument Baseline Design Review, please find enclosed the proceeding for this review. In the view of the timeframe on one hand and the actual instruments' development status on the other, the objectives for this review have been re-examined, refined and agreed with each of the Instrument Teams.

As the IIDR, the IBDR will consist of two parts: a) Review of deliverable documentation (data package) and b) Meeting - Presentations and Discussions. It is emphasised that the deadline for delivery of the data package, i.e. four weeks prior to the meeting, shall be strictly adhered to, in order to ensure proper conduct of the review.

With best regards,



Gerald Crone

Encl.

1 Introduction

The Instrument Baseline Design Review (IBDR) for the Herschel/Planck instruments will be held at the time that the instruments have largely consolidated their interfaces with the spacecraft and started manufacturing for their qualification model (CQM).

The IBDR is of particular importance to confirm the readiness of the Instrument for its CQM / AVM programme.

2 Objectives

In the view of the actual timeframe, the IBDR will be held, together with the status of the instrument and spacecraft development, the objectives have been refined in conjunction with the instruments. The IBDR will be held in preparation for the spacecraft PDR.

The Objectives shall be to demonstrate that:

1. System and sub-system designs have been completed and are under configuration control; interfaces between subsystems are frozen
2. Interface requirements with Spacecraft have been consolidated and are under configuration control
3. On-Board Software requirements and the architectural design are complete and interfaces have been frozen
4. the readiness of the AVM/CQM and PFM programme, including manufacturing and AIT/AIV
5. the readiness of the Ground Support Equipment (GSE) programme

3 Structure

The IBDR will consist of two parts:

1. Review of the documentation (see data package list below)
2. Meeting – Presentations and Discussion

It shall become clear from both, documentation and presentations

- A. Status of baseline and performance
- B. Progress made since IIDR (incl. status of implementation of recommendations)
- C. Open Issues and Critical Areas
- D. Plans for proceeding and resolving problems

The data package shall be delivered well in advance – nominally four weeks - prior to the meeting.

During the review of the documentation, a list of points to be clarified and discussed will be generated by the review board and forwarded to the instrument team.

The meeting shall consist of a number of short presentations of the areas listed below, which should cover the points **A** to **D** above.

Presentations on the following areas shall be given:

- Instrument design description and expected performance
- Instrument system design and development
- Instrument Sub Systems and their Interfaces
- Budgets and Interfaces
- Instrument (On-Board) software
- AIV and Model Philosophy
- Ground Support Equipment and Facilities
- Product Assurance
- Management and Schedule

4 Deliverable Documentation

A data package shall be provided for the IBDR. The package shall be delivered to the ESA Project Team in electronic form (PDF-file), at least four weeks in advance to the meeting. The data package shall contain:

1. - Instrument Design Description
 - (if updated: Science Requirements Document, Instrument Requirements Document)
 - Design and Development Plan
2. - IID-B including updated configuration drawings
 - Key ICDs
 - TMM Analysis
 - FEM Analysis
 - Cryo Harness Requirements
3. - On Board Software URD
 - OBS Architectural Design
 - Operating Modes (including failure modes).
4. - AIV Plan
 - Alignment Plan
 - Schedule
5. - GSE (E,M,O) design, procurement and implementation Plan

PA Documentation: FMECA
Worst Case Analysis
H/W S/W Interaction Analysis
Summary FDIR
Cleanliness Control Plan
Manufacturing Flow Chart (with MIPs/KIPs)

EEE Parts List, Material Process and Mechanical Parts List
 Verification Matrix (incl. Qualification)
 Configuration Item Data List (CIDL)
 Critical Items List (CIL)
 Requests for Waiver and List

In order to avoid duplication of effort, the project is prepared to discuss and accept on a case by case basis (an)other selfstanding document(s) provided that these cover the information required.

5 Board Composition

The board will consist of:

- Chairman (Payload Manager)
- Co-Chairman (Project Scientist)
- Secretary (Instrument System Engineer)
- Board Members (4+) covering the following areas:
 - Product Assurance
 - AIV - Ground Support Equipment
 - Electrical - Thermal/Cryo - Mechanical
 - Data Management - On-board software
- Industry Representative
- Representative of the national funding agency (if proposed by the instrument team)

In addition, during the documentation review or for the review meeting, experts may be called upon. After mutual Instrument and ESA agreement, third parties may be invited to the review as observers.

6 Timeline

Instrument	Review Meeting	Data Package Delivery to ESA
PACS	13-14 December 2001	14 November 2001
LFI (incl SCS)	5-7 February 2002	7 January 2002
HFI	12-13 February 2002	15 January 2002
HIFI	February 2002	January 2002
SPIRE	5-6 March 2002	4 February 2002