

Minutes of Meeting

Date: 03.09.04

Herschel

Doc.-No.: HP-2-ASED-MN-752

Meeting place: Telecon

Chairman: H.Faas

Date/Time: 03.09.04/14h00

Secretary H. Faas

Agenda dated: See HP-ASED-EM-702-04

Close of Meeting: 15h00

Subject: Telecon: LOU Baffle - Potential Impact on SPIRE

Participants: Bruce Swinyard (RAL), Guy
Dobrovik, Bernard Collaudin
(ASP), Carsten Scharmberg,
Chris Jewell (ESA), , M.
Langfermann, H. Hartmann, H.
Faas (EADS Astrium)

Additional Distribution: RAL, Alcatel, ESA/ESTEC,
ASED

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Brief-Minutes (except following sheets)

Summary of Results of Sheets 2 till

Meeting: HP-2-ASED-MN-0752

Action Item List

Herschel

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Reference	Results	Remarks
	<p>Draft Agenda:</p> <ol style="list-style-type: none">1. Introduction: H.EPLM Design Baseline - LOU Baffle2. Straylight Analysis Results: HP-2-ASED-TN-0023, Issue 3.0 (Orbit) and HP-2-ASED-TN-0076, Issue 2.0 (Ground)3. Review of Information Exchange, covering<ul style="list-style-type: none">• HP-ASED-EM-0620-04, 15/07/04• Updated SPIRE response, SPIRE-RAL-NOT-002128, Issue 1.0, 31/08/04• HP-ASED-EM-0700-04, 1/09/04 <p>1. Introduction: H-EPLM Design Baseline - LOU Baffle and Straylight Analysis Results</p> <p>ASED/H. Faas summarised the design of the H-EPLM LOU baffle. It was emphasised that the instrument shield / HIFI FPU radiation labyrinth has been deleted prior to PDR, based on straylight analysis results. These results show that the contribution of the self emission on the SPIRE FPU is less than 0.02% (sum is between 13.3% to 14%, depending of the IR wavelength (orbit case, see HP-2-ASED-TN-0023, Issue 3.0).</p> <p>It should be stressed that the LOU baffle design discussed here, covers only the instrument shield / HIFI FPU radiation labyrinth. The modification of the LOU baffle design by introducing baffle vanes or filters is outside this discussion with SPIRE.</p> <p>ASP/B. Collaudin supported the ASED position and confirmed that the design and the analysis is consistent and a valid LOU baffle design is available.</p> <p>RAL/Bruce Swinyard stated that due to the complex design of the LOU oriented part of the Instrument shield and the HIFI FPU, straylight modelling is not possible (i.e. ray pathes too</p>	

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	<p>complex) and that therefore the results in the ASED TNs cannot be trusted.</p> <p>ESA/Chris Jewell stated that ASED formally is not compliant with the straylight requirement and that the RfD (ref. HP-2-ASED-RD-0015, Issue 1.0) has been rejected. Furthermore, he reminded ASED on their requirements related to on-ground testing, which might be affected by the LOU baffle design.</p> <p>2. Review of Information Exchange</p> <p>Based on the information exchange (listed above), the parties, RAL/ESA on one side and ASED/ASP on the other, confirmed that their opposite positions, i.e.</p> <ul style="list-style-type: none">• ESA/RAL: The straylight modelling results for the LOU window / HIFI FPU design cannot be trusted. Everything should be done to avoid possible straylight.• ASED/ASP: The design and the analysis is consistent and a valid LOU baffle design is available. <p>RAL / BS stated that or the solution of a labyrinth the following issues should be considered as well:</p> <ul style="list-style-type: none">• Low frequency black paint• Paint HIFI FPU side black• To be implemented in both, EQM and PFM <p>ASP/ B. Collaudin summarised that industry takes note of the ESA/RAL concerns and that industry will evaluate technically the possibility of a design change, covering:</p> <ul style="list-style-type: none">• The modification of the Instrument Shield (under ASED responsibility)• HIFI FPU IF for radiation labyrinth (to be coordinated by RAL and by ASP) [Note: The IF existed in the initial FPU design] <p>The development of a concept for the modification of the Instrument Shield is already covered by AI#3 of HP-ASP-MN-5308.</p>	

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	<p>Additional Notes received by ESA/C. Jewell by email on 08/09/04:</p> <p>1) It was stated by ESA and RAL that due to the reflective component of the LOU anodised surface, we have approximately 100mW of long wavelength photons (50 microns and above) at the entrance to HIFI. This will form a "cloud" of long wavelength photons inside the optical bench shield. Industry's position is that this has been modelled and shown to be negligible at the detectors of SPIRE and PACS. ESA/RALs position is that this cannot be modelled accurately enough to make such a statement.</p> <p>2) ESA noted that the approach of Industry was not consistent. Why is industry making such an effort to tape off the small holes caused by the cryo-harness feeding through the optical bench plate when we have such a big open hole from the LOU actually feeding in long wavelength photons.</p> <p>Response and clarification by ASED: The heat load identified in Item 1) refers to the Ground Test Case in ambient conditions. (T=295K).</p>	