EADS astrium

Minutes of Meeting

Date:	23.04.08	**Herschel**	
Doc.-No.:	HP-2-ASED-MN-1541		
Meeting place:	ESTEC / FL	Chairman:	Langfermann
Date/Time:	23.01.08 09:30	Secretary	Langfermann
Agenda dated:		Close of Meeting:	23.04.08 12:30

Subject: Cryo conditions for FPU testing in He-II

Participants:	B. Collaudin, TASF M. Langfermann, ASED B. Demolder, TAS-F C. Jewell, ESA C.Scharmberg, ESA	Additional Distribution:	ESA TAS-F PACS SPIRE HIFI

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☐ Brief-Minutes (except following sheets) ☐ Summary of Results of Sheets 2 till

Conclusion:
The following requirements for the cryostat's thermal environment have been agreed for each FPU test planned in He-II. Some of them are not in line with the FPU requirements acc to IID-A. This has to be clarified.

Reference	Results	Remarks
	The following temperature fields specified are in the same sequence as the tests itself as currently planned. **1. HIFI SFT, SPT and commissioning** Planned currently during He-II top –up No constraint for He-II conditions from any FPU, if temperatures are in the following range Level 0: (HTT upper bulkhead, T107): 1.8 – 2.0 K gradient (Pods are inside liquid) Level 1: (vent line, T231 – 237): < 5 K; (if it is not performed during top-up, < 7K) Level 2: (OBP, T254 T207): < 12 K; Level 3: N/A **Stability: <50 mK/h on L2, L1 and L0.** No constraint on thermal shield and CVV Cryo cover: 220 -260 K S/C vertical and no movement during test. (He-pumps are running) **2. SPIRE SFT** Planned currently during He-II top –up (He-pumps are running) No constraint for He-II conditions from any FPU, if temperatures are in the following range Level 0: (HTT upper bulkhead, T107): 1.8 – 2.0 K gradient (Pods are inside liquid) Level 1: (vent line, T231 – 237): < 5 K; (if it is not performed during top-up, < 7K) Level 2: (OBP, T254 T207): < 12 K; Level 3: N/A No constraint on thermal shield and CVV Cryo cover: 220 -260 K **Stability: <50 mK/h on L2, L1 and L0.** S/C vertical and no movement during test. (He-pumps are running)	

Reference	Results	Remarks
	3. PACS SFT Planned currently during He-II top –up (He-pumps are running) No constraint for He-II conditions from any FPU, if temperatures are in the following range Level 0: (HTT upper bulkhead, T107): 1.75 – 1.85 K (Pods are inside liquid) Level 1: (vent line, T231 – 237): < 5 K; (if it is not performed during top-up, < 7K) Level 2: (OBP, T254 T207): < 12 K; Level 3: N/A No constraint on thermal shield and CVV Cryo cover: 220 -260 K **Stability: <50 mK/h on L2, L1 and L0.** S/C vertical and no movement during test. (He-pumps are running) **4. PACS commissioning** HTT closed, shield cooling via Dewar No constraint for He-II conditions from any FPU, if temperatures are in the following range Level 0: (HTT upper bulkhead, T107): 1.75 – 1.80 K (Pods are inside liquid) Level 1: (vent line, T231 – 237): < 7 K; Level 2: (OBP, T254 T207): < 12 K; Level 3: N/A No constraint on thermal shield and CVV Cryo cover: 220 -260 K **Stability: L0 drifting 15 mK/ day; <100 mK/h on L2, L1 .** S/C 20° tilted and no movement during test. **5. SPIRE commissioning** HTT closed, shield cooling via Dewar No constraint for He-II conditions from any FPU, if temperatures are in the following range	

Reference	Results	Remarks
	Level 0: (HTT upper bulkhead, T107): 1.75 – 1.80 K (Pods are inside liquid) Level 1: (vent line, T231 – 237): < 7 K; Level 2: (OBP, T254 T207): < 12 K; Level 3: 10 -15 K No constraint on thermal shield and CVV Cryo cover: 220 -260 K **Stability: L0 drifting 15 mK/ day; <100 mK/h on L2, L1, L3 .** S/C 20° tilted and no movement during test. **6. PACS SPT Part 1** HTT closed, shield and cover cooling via Dewar No constraint for He-II conditions from any FPU, if temperatures are in the following range Level 0: (HTT upper bulkhead, T107): 1.75 – 1.82 K (Pods are inside liquid) Level 1: (vent line, T231 – 237): < 7 K; Level 2: (OBP, T254 T207): < 12 K; Level 3: N/A No constraint on thermal shield and CVV Cryo cover cooling: <20 K **Stability: L0 drifting 15 mK/ day; <100 mK/h on L2, L1 .** S/C 20° tilted and no movement during test. **7. SPIRE SPT** HTT closed, shield and cover cooling via Dewar No constraint for He-II conditions from any FPU, if temperatures are in the following range Level 0: (HTT upper bulkhead, T107): 1.8 – 1.9 K (Pods are inside liquid) Level 1: (vent line, T231 – 237): < 7 K; Level 2: (OBP, T254 T207): < 12 K; Level 3: 10 -15 K	

Reference	Results	Remarks
	No constraint on thermal shield and CVV Cryo cover cooling: <20 K (tbc by SPIRE) **Stability: L0 drifting 15 mK/ day; <100 mK/h on L2, L1.** S/C 20° tilted and no movement during test. **8. PACS SPT part 2 (H-field)** HTT closed, shield and cover cooling via Dewar (after HTT re-conditioning) No constraint for He-II conditions from any FPU, if temperatures are in the following range Level 0: (HTT upper bulkhead, T107): 1.75 – 1.77 K (Pods are inside liquid) Level 1: (vent line, T231 – 237): < 7 K; Level 2: (OBP, T254 T207): < 12 K; Level 3: 10 -15 K No constraint on thermal shield and CVV Cryo cover cooling: <20 K **Stability: L0 drifting 15 mK/ day; <100 mK/h on L2, L1.** S/C 20° tilted and no movement during test. **9. PACS EMC part 2** HTT closed, shield and cover cooling via Dewar No constraint for He-II conditions from any FPU, if temperatures are in the following range Level 0: (HTT upper bulkhead, T107): 1.75 – 1.80 K (Pods are inside liquid) Level 1: (vent line, T231 – 237): < 7 K; Level 2: (OBP, T254 T207): < 12 K; Level 3: 10 -15 K No constraint on thermal shield and CVV Cryo cover cooling: <20 K **Stability: L0 drifting 15 mK/ day; <100 mK/h on L2, L1.** S/C 20° tilted and no movement during test.	

Reference	Results	Remarks
	10. SPIRE EMC part 2 HTT closed, shield and cover cooling via Dewar (after HTT re-conditioning) No constraint for He-II conditions from any FPU, if temperatures are in the following range Level 0: (HTT upper bulkhead, T107): 1.75 – 1.90 K (Pods are inside liquid) Level 1: (vent line, T231 – 237): < 7 K; Level 2: (OBP, T254 T207): < 12 K; Level 3: 10 -15 K No constraint on thermal shield and CVV Cryo cover cooling: <20 K (tbc by SPIRE) **Stability: L0 drifting 15 mK/ day; <100 mK/h on L2, L1.** S/C 20° tilted and no movement during test. **11. HIFI EMC part 2** HTT closed, shield and cover cooling via Dewar (after HTT re-conditioning) No constraint for He-II conditions from any FPU, if temperatures are in the following range Level 0: (HTT upper bulkhead, T107): 1.75 – 1.90 K (Pods are inside liquid) Level 1: (vent line, T231 – 237): < 7 K; Level 2: (OBP, T254 T207): < 12 K; Level 3: 10 -15 K No constraint on thermal shield and CVV Cryo cover cooling: N/A **Stability: L0 drifting 15 mK/ day; <100 mK/h on L2, L1.** S/C 20° tilted and no movement during test. **12. IST 1 RMS and for SOVT 1 in He-II** HTT closed, shield and cover cooling via Dewar (after HTT re-conditioning) No constraint for He-II conditions from any FPU, if temperatures are in the following range	

Reference	Results	Remarks
	Level 0: (HTT upper bulkhead, T107): 1.75 – 1.90 K (Pods are inside liquid) Level 1: (vent line, T231 – 237): < 7 K; Level 2: (OBP, T254 T207): < 12 K; Level 3: 10 -15 K No constraint on thermal shield and CVV Cryo cover cooling: N/A (tbc by PACS) **Stability: L0 drifting 15 mK/ day; <100 mK/h on L2, L1.** S/C 20° tilted and no movement during test.	

Action Items List

No.:	Description:	Due Date	Originator Comp./Pers.	Actionee Comp./Pers.	Source	Completion