

SPIRE/PACS (CEA-SBT)	Monthly Report – May 2005	Date:	May 31 st , 2005
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SPIRE-SBT-REP-002453

Work Package: Cooler

1. Subsystem Progress Since Project Inception		
FM SPIRE unit delivered. FM PACS unit : Second acceptance program in progress		
2. Subsystem Progress This Month		
<ul style="list-style-type: none"> - FM1 (SPIRE) : DRB held Nov. 18th 2004. No comments were provided on EIDP (is considered OK then). - FM2 (PACS) : HS#5 has been integrated in the cooler and the second acceptance program has been initiated. In accordance with SAp and CNES, the one week bake out test has been removed. The first set of thermal tests (HCR204) went fine; The performance are pretty much within specifications (a small extra load of 2 μW was spotted. Whether it is internal to the cooler or from the cryostat remains unknown). The cooler has been vibration tested at CSL on week 21; for the Y and Z axis, all signatures superimposed. For the last axis (X at 10 Grms) the signature on the evaporator switch I/F is slightly shifted (resonance by \approx 20%). No visible defects were spotted. The tension, leaktightness, electrical integrity and isolation were successfully checked. The cooler is currently undergoing the last set of thermal test (HCR205). The preliminary results do not revealed any problem so far (at least to better than 5 μW extra). HS#5 on the pump operates as it should : no degraded position. “Banging” on the cryostat has no effect on any of the switch. The autonomy tests are being carried out. - Heat switches : New brazing process may be OK : the soldering went fine and the sample piece is leak tight. However we are going to cut the piece and do some investigation on the brazing penetration, etc.... At the output of this phase the complete manufacturing of the new set of heat switches will be initiated. - PACS – Level 0 Interface : The proto strap and new level 0 interface, integrated in the titanium STM, have been vibration tested at MPE. The unit has just been returned to SBT and will be looked at soon. In particular the heat switch will be thermally characterized. As for the mechanical performance of the level 0 interface, although the measured displacements are consistent with the simulation (and consequently the expected constraint should be acceptable), the vespel parts will be mechanically reinforced (design change). - FS : Instrumentation continues. 		
3. Problem Areas	Remedial Action	
Heat switch brazing process	New process to be validated. Plus current process slightly updated.	
4. Engineering Activities		
5. Design Changes		
If confirmed, minor modifications on heat switch parts (play). New interface for level 0 strap : pending validation		
6. PA/QA Activities		
General QA management.		
7. Subsystem Management Issues		
None		
8. Actions Requiring Immediate Attention		
SBT documents approval by SPIRE and PACS projects		
9. Status of Previous Actions		
None		
10. Activities Yet to be Achieved		
11. Milestones		
Mid 2004	FM assembling	Completed
Fall 2004	FM Acceptance program	Completed
Fall 2004	FM1 SPIRE Delivery	Completed
Summer 2005	FM2 PACS Delivery	Cooler updated – New acceptance program
2005	FS program	On going
12. Schedule Changes		