

Title: Test Report for Herschel Integrated Satellite Test –
Mode Transitions

CI-No: 1000000

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Issue	Date	Sheet	Description of Change	Release
1	16.06.08	All	Formal Issue	

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1 Scope

This document reports on the S/C IST test block "Mode Transitions" performed on the FM S/C at ESTEC to check correct operation, after electrical integration of FM SVM with the FM Instruments HIFI, PACS and SPIRE using the Herschel CCS.

1.1 Objective

The objective of this sequence was to test the satellite (manual) mode transitions, and specifically the modes concerning the instrument command in STAND-BY mode. The test sequence was performed in accordance with the test flow diagram for Mode Transitions 5.8.5 in AD1.

2 Documents / Drawings

2.1 Applicable Documents

AD-1	Herschel S/C IST specification, Issue 6, 20/12/07	H-P-2-ASP-SP-0939
AD-2	Herschel IST Test Case 'Leading Procedure', Issue 4 , 24/04/08	HP-2-ASED-TP-0134
AD-3	Herschel IST Test Case 'Mode Transitions', Issue 2, 22/01/08	HP-2-ASED-TP-0189
AD-4	Herschel Instrument Power ON-OFF and Mode Switching for Functional Testing, Issue 1.2, 25/04/08	HP-2-ASED-TP-0206

2.2 Reference Documents

None

2.3 Other Documents

OD-1	Minutes of Meeting IST Test Readiness Review, part 2, 23/01/08	H-P-TASF-MN-9960
OD-2	Minutes of Meeting Mode Transitions Checkpoint 19/04/08	H-P-TASF-MN-10349
OD-3	Minutes of Meeting Mode Transitions PTS 3/06/08	H-P-TASF-MN-10418

2.4 Acronyms & Abbreviations

See "as-run" Leading procedure and Mode Transitions procedure.

3 Test characteristics

3.1 Title

Herschel Integrated Satellite Test (IST) - Test block "Mode Transitions"

3.2 Unit tested

The purpose of this test was to command the satellite into its different possible modes.

3.3 Description

The objective of this test was to demonstrate that the satellite can be commanded into different possible modes. This kind of operation in flight is expected to be nominally run from ground or at least in "visibility".

3.4 Applied procedures

[AD-2] & [AD-3] & [AD-4]

3.5 Requirements to be verified

[AD-1]

- chapter 1 - 4 (where applicable)
- subchapter 5.1 – 5.7 (where applicable)
- subchapter 5.8, 5.8.5 Mode Transitions
- chapter 6 - 20 (where applicable)

3.6 Corresponding minutes of meetings

[OD-1] & [OD-2] & [OD-3]

3.7 General test flow

The test was executed in the following order

Specification	Test Procedure
5.8.5.3. Test Start Configuration	<i>H-P-2-ASED-PR-0134, all steps</i>
5.8.5.4. Launch to Launch	<i>H-P-2-ASED-PR-0189, section 7, step 1 - 10</i>
5.8.5.5. Launch to SAM	<i>Step 11 - 23</i>
5.8.5.6. SAM to SAM	<i>Step 24 - 30</i>
5.8.5.7. SAM to NOM	<i>Step 31 - 50</i>
5.8.5.8. NOM to NOM	<i>Step 51 - 61</i>
5.8.5.9. NOM to EAM	<i>Step 62 - 71</i>
5.8.5.10. EAM to EAM	<i>Step 72 - 79</i>
5.8.5.11. EAM to NOM	<i>Step 80 - 88</i>
5.8.5.12. NOM to SM	<i>Step 89 - 98</i>
5.8.5.13. SM to SM	<i>Step 99 - 109</i>
5.8.5.14. SM to SAM	<i>Step 110 - 116</i>
5.8.5.17. EAM to SAM	<i>Step 141 - 144</i>
5.8.5.18. NOM to SAM	<i>Step 159 - 165</i>

4 Test execution

4.1 Date and time

Test start: 30/04/08; 03:32

Test end: 03/05/08; 01:00

4.2 Tag / session reference

4.2.1 Session 1

Tag: IST_1_PART_2_TP_0189_iss3_MODE_TRANSITIONS_END_002

Session: 2008_04_30_03_32_hercdmu_hpws22_REALTIME_MODE_TRAN

(ACMS SCOE configuration error, no meaningful testing was performed during this session)

4.2.2 Session 2

Tag: IST_1_PART_2_TP_0189_iss3_MODE_TRANSITIONS_END_003

Session: 2008_04_30_16_50_hercdmu_hpws22_REALTIME_MODE_TRA_2

4.2.3 Session 3

Tag: IST_1_PART_2_TP_0189_iss3_MODE_TRANSITIONS_END_003

Session: 2008_05_03_08_07_hercdmu_hpws22_REALTIME_MODE_TRA_3

(New session as a result of CCS reboot)

4.3 Personal

Test Director: S. Mooney

Test Conductor : C. Much

PA: J. Hall

HPCCS Operator : See As-Run

AIT QA: See As-Run

4.4 Detailed test timeline

4.4.1 Start of test / end of test

Session 1

Power ON and initial S/C configuration:

30/04/2008 03:32 – 05:11 UTC

Test configuration and actual test:

30/04/2008 05:11 UTC – 30/04/2008 14:33 UTC

Power OFF:

30/04/2008 14:34 – 15:32 UTC

Session 2

Power ON and initial S/C configuration:

30/04/2008 16:56 – 18:30 UTC

Test configuration and actual test:

30/04/2008 18:30 UTC – 03/05/2008 20:15 UTC

Power OFF:

03/05/2008 20:15 – 23:00 UTC

Additional details are provided in the as-run procedures annexed to this test report. The AIT logbooks covering the test are also attached for information.

See test log book below

4.4.2 Time of event as deviation

Details are provided in the as-run procedures annexed to this test report. The AIT logbooks covering the test are also attached for information.

See test log book below

4.4.3 Time zone to be ignored in case of deviation

Details are provided in the as-run procedures annexed to this test report. The AIT logbooks covering the test are also attached for information.

See test log book below

4.4.4 Time of SPR / NCR

Details are provided in the as-run procedures annexed to this test report. The AIT logbooks covering the test are also attached for information.

See test log book below

4.4.5 Time of mile stone in test

Details are provided in the as-run procedures annexed to this test report. The AIT logbooks covering the test are also attached for information.

See test log book below

Date	30/04/2008		
Operator	S. Elsley		
QA	B. Hogg		
EGSE	E. Hanka		
Test Case	Mode Transitions		
OBSW	CDMS 3.4.0.9, ACMS 3.7		
HPADB	H-P-2-ASP-LI-1441 issue 10		
HPCCS Release	Hpccs_2.0-1219		
Test Environment / Version	IST1_PART_2_TP_0189_iss3_MODE_TRANSITIONS_END_002		
Session ID	2008_04_30_03_32_hercdmu_hpws22_REALTIME_MODE_TRAN		
Purpose of test	Debugging		
	NCR investigation		
	Calibration		
	Unit integration testing		
	FORMAL		X

	Test Procedure / Step / Script / Command / Event / Anomaly	Remarks / Cause of anomaly / Corrective action	C/A type (T/P)	NCR ref. (PA)
03:32	Session started			
	Start-up of S/C			Time (UTC)
05:11	Start Up Completed			
05:11	Start Mode Transition Dry Run			
	IST_STATUS 5.8.5.3 9in step 3 asked twice to: "Do you want to stop at eache faiolure?"	TO BE SPR'ed ?? NOTE: ALL IST_STUATUS AND ASAT MIMs ARE printed and added to the AS-RUN at the steps performed		

5:32	STEP 6 transition Launch 2 Launch; BSW does not put XPND in 125 Kbps but puts into 5Kbps	Known issue, NCR to be raised SPR 464/SPR 66 PVS 1		
06:03	ACMS_get_RM_Status.tcl reported TEST FAILED – TimeOut occurred – Abort? Yes/No? Selecting no			
6:50	TM 5.4 FDIR RCS branch unhealthy	Recovery procedure: marking RCS healthy manually		
	Trying to recover Marking RCS healthy failed Found that STR-SIM sw was stuck, rebooted the sw Marking RCS healthy failed rebooted the ACSM SW failed in booting up the acms using ACMS_CONFIG25 rebooting the full ACMS SCOE successful retrying to mark RCS1 healthy, unsuccessful	PVS 2		
12:41	SPR 465 seen again			
12:45	Alarm 5.4 New TM 251004939			
14:33	After some debate on the spot decided to abort the test and switch-off	NCR to be issued and NRB to decide next activities		NCR-4176
14:34	Start IST_END			
15:32	IST_END finished; s/c switched off	Decision to do a full reboot of the ACMS SCOE and then a clean restart of the test. This session will be closed and a new session started.		

Date	30/04/2008	
Operator	O. Martin/ C.Much	
QA	R. Goossens	
EGSE	I. Luck	
Test Case	Mode Transitions 2 nd dry-run	
OBSW	CDMS 3.4.0.9, ACMS 3.7	
HPSDB	H-P-2-ASP-LI-1441 issue 10	
HPCCS Release	Hpccs_2.0-1219	
Test Environment / Version	IST1_PART_1_TP_0189_iss3_MODE_TRANSITIONS_END_003	
Session ID	2008_04_30_16_50_hercdmu_hpws22_REALTIME_MOD_TRA_2	
Purpose of test	Debugging	
	NCR investigation	
	Calibration	
	Unit integration testing	
	FORMAL	X

Time (UTC)	Test Procedure / Step / Script / Command / Event / Anomaly	Remarks / Cause of anomaly / Corrective action	C/A type (T/P)	NCR ref. (PA)
16:56	Start of IST_START	In accordance with NRB #1 from NCR-4176		
18:30	Start of IST Mode Transitions			
19:43	Spacecraft ready for a babysit night; No RWL's on			
06:43	Begin Memory dump	In accordance with PVS#3		
07:10	Memory dump completed			
	Problems again with ver_send			
	Test Step 38 unclear how to proceed	PVS#4 raised to clarify test step.		
09:29	HIFI start up, Script file halted & terminated (TP206)	PVS#5 raised to define steps required.		
10:10	During HIFI start up, further clarity required for step 6 (TP206)	PVS#6 raised to define steps required.		
10:40	HIFI cooling device was installed			
11:02	SPIRE in stby			

11:30	TM check failures cause a delay of the test			
11:30	Stop ACMS Thermistor Log. (running on CCS lite)	This doesn't help the TM check failure delay problem.		
11:33	CCU Log stopped (running on CCS lite)			
17:10	STR unhealthy again			
20:57				
20:58	PVS#14 to Disable thermal Control and to Dump pkt store	SPR raise due to the script unable to handle multiple param's. The script has been modified today but no SPR has been recorded for this change. And this script has been patched online. New SPR raised SPR 509 – Unable to perform multi dumps.		
	Dumped 0 1 2 3 80 81 82 83 (one at a time) Cannot do CEL_A and CEL_B	SPR 510 – Unable to perform dumps with Text strings		
6:30	Enable thermal control loop again PVS 15			
7:20	Declare str1 healthy PVS 16			
8:32	HPS switch over performed,			
8:33	Continue 5.8.5.17 with thermal control enabled			
10:30	RWL2 in stiction region.	Due to a backlog in the DFE the ACMS command were not executed quickly enough causing RWL2 in stiction region. Re-biased the RWS.		PVS #20
13:00	During HIFI switching to stby many problems related to CCS occur therefore switch on is delayed			
14:35	Not possible to switch on HIFI into stby			
14:48	Started to switch off HIFI			
16:51	HIFI off			
17:15	Started to switch on HIFI for the 2 nd time after given go ahead from S.Hamer			

18:24	As the same problems occurred when the tcl scripts trys to fetch raw values from IEGSE the descision was taken to switch off HIFI and the other instruments and leave the S/C on to continue on Saturday.			
18:38	Start switch-off HIFI (standby 1 to OFF)	Per Instr. Power-on/off procedure for FT ref TP-0206		
18:41	HIFI_OBS_runtime error (lots of these messages appear)	Ignored and continued with switch-off		
18:50	HIFI off			
18:52	Start switch-off PACS	Per Instr. Power-on/off procedure for FT ref TP-0206		
18:59	PACS switched-off			
19:01	Start switch-off SPIRE	Per Instr. Power-on/off procedure for FT ref TP-0206		
19:01:57	SPIRE_ALARM_LSMCU_DEAD	APID 1280 onboard events log		
19:05	SPIRE switched-off			
19:44	PVS#25 rasised to prepare the S/C for the alignment activities overnight; 1)Set Tm rate to High 2)Dump Pkt Stores 3)Disable Thermal Control 4)Preform Transition to OCM on the ACMS and spin down the RWLS			
	Baby sit SC for alignment	Standby to standby		

Date	03/05/2008		
Operator	J.Hendrikse		
QA	D.Lamonby		
EGSE	Luigi		
Test Case	Mode Transitions 2 nd dry-run		
OBSW	CDMS 3.4.0.9, ACMS 3.7		
HPSDB	H-P-2-ASP-LI-1441 issue 10		
HPCCS Release	Hpccs_2.0-1219		
Test Environment / Version	IST1_PART_1_TP_0189_iss3_MODE_TRANSITIONS_END_003		
Session ID	2008_04_30_16_50_hercedmu_hpws22_REALTIME_MOD_TRA_2		
Purpose of test	Debugging		
	NCR investigation		
	Calibration		
	Unit integration testing		
	FORMAL		X

Time (UTC)	Test Procedure / Step / Script / Command / Event / Anomaly	Remarks / Cause of anomaly / Corrective action	C/A type (T/P)	NCR ref. (P)
05:40	Power ON PACS i.a.w. TP-0206 Iss 1.2			
	Parameter check failed for DEFJ4160 DISABLED rxd when ENABLED expected. Not seen before. Repeat check is OK (as expected)	indicative of the day ahead?????		
05:56	PACS is powered up with one minor problem, on TM check as mentioned above.			
06:00	Cryostat Level 0 Temp: 5.59K			
06:00	Cryostat Level 1 Temp: 6.62K to 12.86K			
06:00	Cryostat Level 2 Temp: 24.2K			
06:07	HIFI IEGSE already connected			
	Test command to HIFI IEGSE sent but Command History not updated. Stop button the LIVE button pressed then displayed command execution OK			

06:14	Power ON HIFI started – fingers crossed			
	Again TM check fails – repeat OK			
	ALL_SubscribeParams TS sequence			
	Table Load struggling again – terminating and running manually			
	Same problem terminating Table Load			
	Agreed with to reboot CCS and restart session PVS26 & PVS27			
	CCS rebooted a new test session:			
08:40	2008_05_03_08_07_hercdmu_hpws22_REALTIME_MOD_TRA_3			
	When we tried to run the HIFI table load script, we still had problems with parameters not being fetched from the current packet	NCR 4181 Investigation into this problem was done from TOPE shell, which showed that the “fetch” command returned a null value when retrieving parameters from certain packets (e.g. Parameter YM004962 in packet SPID=250004962) yet fetch was successful in retrieving parameter YM000962 in packet SPID= 250000962. ALL_SubscribeParams was running at the time, however when the script HIFIST_nom_Startup_LCU_table_load_warm was stopped and restarted, it ran successfully and the fetch from TOPE shell also worked for parameter YM0004962. It appears that the fetch command does sometimes not work on certain parameter/packet combinations.		
09:36	No telemetry seen between DFE and CCS,	The command history display couldn't see the telemetry because of a time sync problem. Time sync problem after reboot of CCS.		
09:58	The link between CCS and TMTC DFE was re-synchronised.	We are now seeing the telemetry.		
10:17	HIFI power-ON to stby 1 completed successfully.			

10:35	Starting SPIRE switch-ON			
10:52	Spire is now powered ON in stby mode.			
11:32	The cooling for HIFI is being lowered from 16C to 14C			
13:02	Transition OCM to SCM fails			
14:02	Start again transition to SCM			
16:11	Transition NOM to EAM performed with HIFI in science mode	<p>Only triggering of the master OBCP is reported but HIFI has stopped to generate science data</p> <p>Checking bus monitor activity, no TC toward the instrument has been seen outside of MTL ping. Tc toward PCDU and tranponder is in turn properly observed.</p> <p>HIFI science has been interrupted about 20s after transition (no explanation, except that HIFI has reported "run time errors" (5,4).</p> <p>Later (step 148 to put PACS in burst mode), PACS has been found with TC routing disabled.</p>		
16:34	Switch HIFI to Standby1	PVS#32		
18:28	CIR was not correctly reset see SPR	To be investigated		
19:21	Eventreport vc1 queue full due to wrong TC			
20:15	Mode Transitions ended !!!!!!!!!!!			
20:16	Start IST_END to switch-off s/c			
20:56	IF MGR crashed	<p>This occurred during running of Packet Store Dump, at packet store 82.</p> <p>IFMGR restarted according to Op.Note</p> <p>Noticed that BS SCOE was not running (appl s/w)</p> <p>also ACMS SCOE disconnects after 60 secs when</p>		

		<p>reconnected. BS SCOE appl. Restarted. (0 amps) There is no indication in the BS log for the termination of the application. There was no crash, just a clean stop. The BS-log has noted the termination of the IFMGR so somewhere after that the application stopped. The connection was stopped somewhere between 20:38 and 20:56. NCR issued on BS anomaly</p> <p>==> DoD occurred acc. to GB</p> <p>A new session was started this morning !!!</p>		<p>New NCR-4182</p>
<p>21:32</p>	<p>PVS performed after DoD to recover from reconfiguration and save remaining Dump Stores</p>	<p>This appears to be problematic</p>		

4.4.6 Timeline of major events (excluding power on / off)

Date	Approx Time	Step / Event	PVSs raised
30.04.08	18:40	5.8.5.3. Test Start Configuration	PVS#1
	18:45	5.8.5.4. Launch to Launch	
	19:15	5.8.5.5. Launch to SAM	
	19:22	5.8.5.6. SAM to SAM	PVS#2
01.05.08	08:19	5.8.5.7. SAM to NOM	PVS#3, PVS#4
	12:48	5.8.5.8. NOM to NOM	PVS#5 to PVS#8
	14:20	5.8.5.9. NOM to EAM	PVS#9
	15:20	5.8.5.10. EAM to EAM	
	15:38	5.8.5.11. EAM to NOM	
	17:26	5.8.5.12. NOM to SM	PVS#10, PVS#11
	18:19	5.8.5.13. SM to SM	PVS#12
	20:10	5.8.5.14. SM to SAM	PVS#13 to PVS#17
03.05.08	17:26	5.8.5.17. EAM to SAM	PVS#18 to PVS#25, PVS#31 to PVS#33
	19:45	5.8.5.18. NOM to SAM	PVS#34 to PVS#36

4.5 Problems found during the test

4.5.1 Procedure Variations

4.5.1.1 Leading Procedure for Session 1 (TP-0134)

PVS No	Description and Impact on Test (If any)	Impacts Test Objectives (Y/N)
1.	Running of a standalone script for another activity (ACMS Thermistor Log)	N

4.5.1.2 IST Procedure for Mode Transitions Session 1 (TP-0189)

PVS	Description and Impact on Test (If any)	Impacts Test
------------	--	---------------------

No		Objectives (Y/N)
1.	Additional Step for Tm Rate	N
2.	Steps to recover ACMS SCOE	N
3.	PACS OBCP Recovery	N
4.	ACC in open loop, close loop expected	N

4.5.1.3 Leading Procedure for Session 2 & 3 (TP-0134)

PVS No	Description and Impact on Test (If any)	Impacts Test Objectives (Y/N)
1.	Running of a standalone script for another activity (ACMS Thermistor Log)	N

4.5.1.4 IST Procedure for Mode Transitions Session 2 & 3 (TP-0189)

PVS No	Description and Impact on Test (If any)	Impacts Test Objectives (Y/N)
1.	Additional Step for Tm Rate	N
2.	Additional step added for missing script prompt	N
3.	Downlink for SSMM over night shift	N
4.	Additional comment required in procedure	N
5.	Additional step required when using TP206	N
6.	Additional comments for operator	N
7.	Additional step added for missing script prompt	N
8.	Reconfiguration of STR	N
9.	NCR 4138, PACS commanded to Standby manually	N
10.	Downlink of SSMM	N
11.	Work around for RX2 Rate	N
12.	Tm Rate Change	N
13.	Update of Crome Register, to recover Timing problem	N
14.	Downlink of SSMM & disable Thermal Control	N
15.	Re-enable Thermal Control	N
16.	Set STR1 back to healthy state	N

17.	Procedure update to delete TCs in MTL with “overtime period”	N
18.	Procedure update to empty MTL from overdue TCs	N
19.	Procedure update, ACMS menu	N
20.	Re bias RWLs – RWL2 in stiction region	N
21.	Thermal Control active, FCCT update needed	N
22.	Check that all OBCPs are loaded	N
23.	Set DFE from 125 bps to 4K	N
24.	Switch HIFI to Standby	N
25.	Downlink of SSMM and RWLs OFF for parallel activity	N
26.	Actions in accordance with NCR 4181	N
27.	Actions in accordance with NCR 4181 continued	N
28.	Actions in accordance with NCR 4181 continued	N
29.	Actions to recover TMTC DFE	N
30.	Unclear MTL status, service restarted	N
31.	Transition to SCM failure	N
32.	Switching HIFI to Standby	N
33.	Configuration settings	N
34.	Upload of EAT, to be added to spec	N
35.	Reset CIR and Re-run ACMS IST FN	N
36.	Actions to recover from OBCP triggering	N

4.5.2 List of NCRs found (Opened, Reoccurred, Closed)

NCR No	Action taken	O/R/C
3787	FCV-Duty cycle too long – No impact on test	R
3958	OBCP actions to switch off SPIRE reported at HIFI OFF – No impact on test, SCOS error	R
4086	SPIRE PRIME needs to be booted with the secondary partition – No impact on test	R
4138	OBCPs not triggered correctly during Mode Transitions - Timing issue when reading the data pool. At the start of the OBCP 001 the check of the destination mode is checked and another OBCP if destination mode is EAM or SAM.	R

NCR No	Action taken	O/R/C
	During Test, this failed in 3 out of 4 attempts. Should not be seen in SAM-SAM and EAM-EAM. A delay shall be added into OBCP001 to delay the read of the data pool for 1 second. Redelivery of database required.	
4160	Inverse calibration curve of SREM TM – No impact on test	R
4176	IST Formal Run for Mode Transitions aborted	O
4181	CCS Reports no tm packets received (investigation performed)	O
4182	BS SCOE application found terminated during s/c switch off	O

4.5.3 Details of issues found, SPR list

SPR No	Remark
504	RCSA health status UNHEALTHY
505	IST_PACS_OBCP_recovery can not handle TM rate 500bps
507	2 TC not uploaded in MTL + TM fail check
508	Event 5-2 overdue TC executed
509	Unable to perform multi dumps
510	Unable to DUMP from text string location
511	DC82F170 does not delete all Tcs in MTL
512	Missing TCL proc H_OBDB_setup_for_SIT
513	Not possible to switch HIFI in STBY
514	Import new SPIRE test scripts for EMC RE tests – Not related to test
515	Unexpected behaviour of XPND
516	IST status 5.8.5.17 wrong TX configuration
517	Reset of CIR missing
518	Event Alarm during reconfiguration of PCDU

4.5.4 List of SPRs and what action was taken if any

SPR No	Action taken
504	Reboot of ACMS SCOE
509	Script adapted to allow multiple inputs
510	Script adapted to allow string integer
514	New scripts installed on system – Not related to test

4.5.5 Procedure changes

See As-Run Procedure red-markings and Procedure Variation sheets (chapter 8.1) of both Procedures TP-0134 & TP-0189 in chapter 6.1.1

4.6 Deviations from test requirements (delta to TRR, checkpoint meeting)

None

4.7 Test execution summary

The execution of the test case was deemed acceptable for a formal run.

4.8 Summary conclusion

The execution of the test case was deemed acceptable for a formal run. The information gathered so far is deemed acceptable, pending the results of the post-test analysis.

All mode transitions (apart from EAM-SAM) were considered successful with a small number of anomalies which require further evaluation but do not impact the success of the test.

4.9 Open issues

The EAM to SAM transition was deemed successful but this section should be re-executed with the new SW (CDMS v 3.6 + DB) to verify correct OBCP operation. This must be verified before thermal vacuum tests.

5 Post-test Data Retrieval

5.1 Archive complete test session

See in the corresponding subdirectory 'Session_Archive' on the CDs labelled with:

2008_04_30_03_32_hercdmu_hpws22_REALTIME_MODE_TRAN
2008_04_30_16_50_hercdmu_hpws22_REALTIME_MODE_TRA_2
2008_05_03_08_07_hercdmu_hpws22_REALTIME_MODE_TRA_3

5.2 Dump and save the TC history

5.2.1 Location of TC history files

See in the corresponding subdirectory 'TC_history' on the CDs labelled with:

2008_04_30_03_32_hercdmu_hpws22_REALTIME_MODE_TRAN
2008_04_30_16_50_hercdmu_hpws22_REALTIME_MODE_TRA_2
2008_05_03_08_07_hercdmu_hpws22_REALTIME_MODE_TRA_3

5.3 Save the SSMM data

See in the corresponding subdirectory 'SSMM_dump_data' on the CDs labelled with:

2008_04_30_03_32_hercdmu_hpws22_REALTIME_MODE_TRAN
2008_04_30_16_50_hercdmu_hpws22_REALTIME_MODE_TRA_2
2008_05_03_08_07_hercdmu_hpws22_REALTIME_MODE_TRA_3

5.4 Dump and save the TM history

See in the corresponding subdirectory 'TM_history' on the CDs labelled with:

2008_04_30_03_32_hercdmu_hpws22_REALTIME_MODE_TRAN
2008_04_30_16_50_hercdmu_hpws22_REALTIME_MODE_TRA_2
2008_05_03_08_07_hercdmu_hpws22_REALTIME_MODE_TRA_3

5.4.1 List of print specifications

Print specifications are compiled as per AD-3.

5.5 Dump DFE TM

See in the corresponding subdirectory 'TMTC_DFE_data' on the CDs labelled with:

2008_04_30_03_32_hercdmu_hpws22_REALTIME_MODE_TRAN

2008_04_30_16_50_hercdmu_hpws22_REALTIME_MODE_TRA_2

2008_05_03_08_07_hercdmu_hpws22_REALTIME_MODE_TRA_3

5.6 Dump the ACMS SCOE simulator data

See in the corresponding subdirectory 'ACMS_SCOE_data' on the CDs labelled with:

2008_04_30_03_32_hercdmu_hpws22_REALTIME_MODE_TRAN

2008_04_30_16_50_hercdmu_hpws22_REALTIME_MODE_TRA_2

2008_05_03_08_07_hercdmu_hpws22_REALTIME_MODE_TRA_3

5.7 Dump the CDMS Milbus data

See in the corresponding subdirectory 'MILBUS_data' on the CDs labelled with:

2008_04_30_03_32_hercdmu_hpws22_REALTIME_MODE_TRAN

2008_04_30_16_50_hercdmu_hpws22_REALTIME_MODE_TRA_2

2008_05_03_08_07_hercdmu_hpws22_REALTIME_MODE_TRA_3

5.8 Prepare CD to hand-over to TAS-F system engineering

See the CDs labelled with:

2008_04_30_03_32_hercdmu_hpws22_REALTIME_MODE_TRAN

2008_04_30_16_50_hercdmu_hpws22_REALTIME_MODE_TRA_2

2008_05_03_08_07_hercdmu_hpws22_REALTIME_MODE_TRA_3

6 Attachments

6.1 Supporting documentation

6.1.1 *As-Run Procedure*

As annexed

6.1.2 *Tag / session reference for the SSMM_A data replay*

See the CDs labelled with:

****2008_**_**_**_**_hercdmu_hpws54_RPL****

6.1.3 *List of data file provided with respect to TN1482*

- A copy of the section of the test log for the test session run, See Logbook in chapter 4.4.5
- A copy of the raised SPRs / NCRs. As annex
- A copy of any procedure deviations. See attached As-Run Procedures TP-0134 & TP-0189

6.1.4 *Contamination control report*

The test was performed in Hel in the Estec Hydra cleanroom 100000, at ambient temperature.

See in the corresponding subdirectory 'Contamination_control_data' on the CDs labelled with:

2008_04_30_03_32_hercdmu_hpws22_REALTIME_MODE_TRAN

2008_04_30_16_50_hercdmu_hpws22_REALTIME_MODE_TRA_2

2008_05_03_08_07_hercdmu_hpws22_REALTIME_MODE_TRA_3

6.1.5 *Logbook reporting all significant events about specimen*

See chapter 4.4.5

6.1.6 *Pictures taken on the specimen in test configuration*

N/A

6.1.7 Record (CD-ROM) of all acquired data during test

See separate CD delivery

6.1.8 Test measurements devices calibration reports

See table below

EGSE	UNIT NAME	Manufacturer	P/N or Model	S/N	TAS-I C.I	TAS-I ID & Calibration		
						Instrument n. (SSS)	Calibration performed	Calibration expires
BCE SCOE	DC electronic load simulator	Agilent	6050A	3620A04731	3A2140-23.1.06	6344	30.01.2008	30.01.2009
BCE SCOE	DC power supply	Agilent	6654A	MY40001318	3A2140-23.1.05	6819	30.01.2008	30.01.2009
BS SCOE	DC electronic load simulator	Agilent	6060B	US37350708	3A2140-22.1.11	4002	30.01.2008	30.01.2009
BS SCOE	DC power supply	Agilent	6674A	3637A01524	3A2140-22.1.10	301	30.01.2008	30.01.2009
TT&C SCOE	Signal generator 9KHz - 3.3GHz SML03	Rhode & Schwarz	1090.3000.13	101398	3A2150.1.13	6297	31.01.2008	31.01.2009
TT&C SCOE	Signal generator 9KHz - 3.3GHz SML03	Rhode & Schwarz	1090.3000.13	101399	3A2150.1.8	6295	31.01.2008	31.01.2009
TT&C SCOE	Signal generator 9KHz - 3.3GHz SML03	Rhode & Schwarz	1090.3000.13	101400	3A2150.1.14	6296	31.01.2008	31.01.2009
TT&C SCOE	ESG series signal generator 250MHz - 4GHZ	Agilent	E4422B	MY43350106	3A2150.1.12	6290	31.01.2008	31.01.2009
TT&C SCOE	Network analyser 10KHz-180MHz	Agilent	E5100A	MY40500710	3A2150.1.11	6288	01.02.2008	01.02.2009
TT&C SCOE	EPM Series Power Meter	Agilent	E4416B	GB43313104	3A2150.1.5	6287	01.02.2008	01.02.2009
TT&C SCOE	20MHz Function/Arbitrary Waveform Generator	Agilent	33220A	MY40500710	3A2150.1.6	6948	01.02.2008	01.02.2009
TT&C SCOE	FSP Spectrum analyser 9KHz - 13.6GHz	Rhode & Schwarz	1164.4391.13	100018	3A2150.1.4	6294	01.02.2008	01.02.2009



END OF DOCUMENT

Attachment 1 to Section 6.1.1:

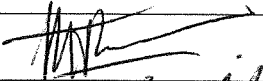
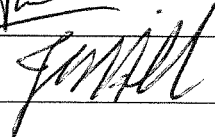
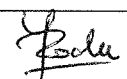

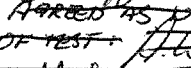


As-Run Procedure HP-2-ASED-TP-0134

Title: **Leading Procedure for Herschel Integrated Satellite Test**

AS RUN FOR DRY RUN OF

CI-No: **MODE TRANSITIONS 30/04/08**

**2008_04_30_03_32-herschelmu-
REALTIME_MODE-TRAN**

Prepared by:	Functional Team	Date:
Checked by:	C. Much 	25/4/2008
Product Assurance:	J. Hall 	25/4/2008.
Configuration Control:	W. Wietbrock	
TASF Engineering	G. Beaufils 	25 APR 08
TASF Test Director	S. Mooney 	25/4/2008.
Project Management:	Dr. W. Fricke  <small>APPROVED AS POINT MAN/DIRECTOR + SIGNATURE FOR START OF TEST + APPROVED FOR WITNESS</small>	
Project Management	Denis Montet 	28/4/08 

Distribution: See Distribution List (last page)

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Change Record:

Issue	Date	Sheet	Description of Change	Release
1	11.01.2008		Initial version	1
1.1	04.02.2008		- see change bar	
1.2	27.02.2008		Update IST START step description according to AS RUN procedures, Add Operator note in Annex D, Add IST_GUI pictures, Update Hierarchy Script	
2.0	11.03.2008		5.4.3.1 Add CCS Light in EGSE Hardware Configuration 7.1.2 change all RFDN SM values from BBBB to ABBB (See procedure variations) 7.1.2 change value of "Bat.SCOE in table for launch clean run 7.1.2 change value of "TTR in SM" in table for "FDIR" and "Nom mode Robustness" 7.1.2 Correct SSMM configuration for ACMS commissioning 7.1.3 Step 1 add script name 7.1.3 Step 2 describe how to open window 7.1.3 Step 4 additional remark N/A for "Launch Clean Run" 7.1.3 Step 5 additional remark N/A for "Launch Clean Run" 7.1.3 Step 7 additional remark N/A for "Launch Clean Run" 7.1.3 Move Step 7b as 9b 7.1.3 Step 8-9 appears always (not only for launch cases) 7.1.3 step 20 add Operator Note 11 reference 7.1.3 step 22 deleted 7.1.3 step 23 added "Satellite state displayed" 7.1.3 step 29 remark deleted 7.1.3 step 33-34 Remark moved from step 34 to step 33 7.1.3 step 39 additional remark 7.1.4.1 step 9 add SPR 282 7.1.4.2 step 4 correct script name 7.1.4.2 step 5-6-7 clarify N/A 7.1.4.2 step 8 move remark to step 10 7.1.4.2 step 10 add SPR and NCR and expected TM(5,1) 7.1.4.2 step 13 add PM_reset TC Not Acknowledged 7.3 step 2 change YES to Confirm	

			<p>7.3 step 2 add "RWL ON" condition 7.3 step 5 correct typo 7.3 step 7 add out of limit comment 7.3 add step 12a 7.3 remove step24 7.3 move step21 after WRITE_CROME step 23 7.3.1 4th Step 31 Add event TM(5,1) expected during ACC OFF Annex D add Operator Note 11</p> <p>Rename Chapter 7 as IST Test Create new subchapters 7.1 HPCCS configuration for IST Test 7.1.1 Apply Tag on test files</p>	
3	17.04.08		<p>Update IST START procedure according to the AS RUN procedure for Nominal Mode Robstness (minor changes),</p> <p>4.3.1 & 4.3.2 to include SCOE Sk01J04 and to correct hcu connector ident Typo's</p> <p>7.2.1 Insert IST Start overview test flow diagram</p> <p>7.2.2 update table 5.8.12 Nom Mode Robustness table to be i.a.w. the IST Specification</p>	
4	24.04.08		<p>Update IST START procedure according to the AS RUN procedure for minor updates,</p> <p>Include step 21 in Section 7.2.4 - start a CCU log file to monitor temperature TLM's</p>	

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1 Scope

This Test Procedure contains the overall IST start-up and shutdown procedures for the satellite covering all the defined test cases as well as being the entry point for calling the appropriate test configuration.

It also contains the supporting definition of the relevant supporting infrastructure and pre test conditions required for the IST tests to be performed correctly.

All pre-requisites for the Helium II procedures shall be incorporated into a future issue of this document.

1.1 Objective

This document is the entry point for the Integrated Satellite Test - IST - test cases to be executed as part of the overall IST campaign for the Herschel project.

This document shall act as the leading procedure, to become 'as run' procedure for each IST test case that is executed, and shall be identified on the front sheet in 'Red' before start of test. A new 'as run' copy of the procedure shall be used for each test run, and will become an accurate history of the test performed. All activities will be recorded, with results obtained. Any anomalies found will be noted in the step by step section as they arise, and where applicable an SPR (Software Problem reports) will be raised.

The identification of hazardous conditions associated with the test article and the operations, which might damage equipment, cause injury or invalidate test data, will be herein provided. Precautions to be observed, with correlation to the specific areas of applicability, will be provided as well in the descriptions of the test set-up to be adopted.

1.2 Flow

The test flow is divided into two main areas: IST1 pre-environmental testing and IST2 which will be performed post environmental testing. For IST1 the tests will be grouped into 3 main test groups: Warm Case, He I, and He II condition. (See list below). For IST2 all testing shall be performed in He II condition.

IST 1

➤ Warm case

- Launch clean run
- Launch phase, separation and post separation
- Satellite Commissioning warm case
- ACMS commissioning
- Launch sequence robustness
- Mode transitions Warm case

➤ He I

- Mode transitions He I or He II
- S/C reconfiguration
- NOM mode robustness
- Test of Instrument FDIR OBCP

➤ He II

- Instruments commissioning and performance verification
- CDMS management
- DTCP worst case scenario
- Satellite/ CCU Commissioning He II only
- Reference Mission Scenario

IST 2

All tests will be performed in He II

Tests may be run in any order



2 Documents

Doc. No: HP-2-ASED-TP-0134
Issue: 4.0
Date: 24.04.2008

Page **10**

File: HP-2-ASED-TP-0134_Herschel_IJT_Leading_Procedure__iss_4_0_24-04-08

2.1 Applicable Documents

This section contains the list of documents originator of the test procedure, the list of documents filled with the requirement applicable to the activities explained in this procedure, the list of documents used to define the activities on the items (like design reports)

AD 2.1.1 Herschel Integrated Satellite Test Specification H-P-2-ASP-0939

2.2 Reference Documents

This section contains a list of documents filled with statements necessary to organise and to detail the operative execution of the test activities

RD 2.2.1.a.	Herschel/Planck Reference Mission Scenario	SCI-PT-12759
RD 2.2.1.b.	H/P ACMS S/S AVM SIT Specification	H-P-SP-AI-0059
RD 2.2.1.c.	H CDMS SIT Specification	H-P-SP-AI-0065
RD 2.2.1.d.	H TT&C SIT Specification	H-P-SP-AI-0078
RD 2.2.1.e.	H PCS SIT Specification	H-P-SP-AI-0079
RD 2.2.1.f.	Packet Store Usage on H/P 6603	PT-CMOC-OPS-TN-
RD 2.2.1.g.	Software user's Manual	P-HPL-NOT-0029-SE
RD 2.2.1.h.	CDMU ASW Requirement Specification	H-P-SP-AI-0031
RD 2.2.1.i.	Basic Software Requirement Specification	H-P-SP-AI-0006
RD 2.2.1.m.	H/P ACMS Requirement Specification	H-P-SP-AI-0011
RD 2.2.1.n.	SVM FDIR Design Specification	H-P-TN-AI-0024
RD 2.2.1.o.	Herschel Planck PSICD	SCI-PT-ICD-07527
RD 2.2.1.p.	H-P-CDMU ASW User Manual	H-P-4-SSF-MA-0001
RD 2.2.1.q.	H-P ACMS Design Report	H-P-4-DS-TN-0011
RD 2.2.1.r.	H-P ACMS TC Definition	H-P-4-DS-TN-0024
RD 2.2.1.s.	ACMS FDIR Analysis Report	H-P-4-DS-TN-0010
RD 2.2.1.t.	CDMU HW User Manual	P-HPL-NOT-0009

2.3 Other Documents

Additional to the IST Leading procedure there are the Step by Step IST procedure for each test case and a separate Instrument Power ON/OFF Switching procedure (see the table below).

IST Step by Step Test Procedures	HP-2-ASED-	Test to be performed
Herschel IST Test Case 'Launch Phase, Separation and Post Separation'	TP-0185	
Herschel IST Test Case 'Satellite Commissioning'	TP-0186	
Herschel IST Test Case 'ACMS Commissioning'	TP-0187	
Herschel IST Test Case 'Instruments Commissioning and Performance Verification'	TP-0188	
Herschel IST Test Case 'Mode Transitions'	TP-0189	
Herschel IST Test Case 'S/C Reconfiguration'	TP-0190	
Herschel IST Test Case 'CDMS Management'	TP-0191	
Herschel IST Test Case 'DTCP Worst Case Scenario'	TP-0192	
Herschel IST Test Case 'REFERENCE Mission Scenario'	TP-0193	
Herschel IST Test Case 'Launch Clean Run'	TP-0194	
Herschel IST Test Case 'Launch Sequence Robustness'	TP-0195	
Herschel IST Test Case 'NOM Mode Robustness'	TP-0196	
Herschel IST Test Case 'Test of Instrument FDIR OBCP'	TP-0197	
Herschel Instrument Power On/Off and Mode Switching Procedure for Functional Testing	TP-0206	

3 Requirements to be verified

See AD 2.1.1 "Herschel Integrated Satellite Test Specification" section 9



4 Configuration

4.1 Hardware Configuration

The activities described in this test procedure require the complete system configuration according to the hardware matrix here below reported.

S/S	Unit	Configuration	SCOE simulated equipments	Remarks
		<i>Herschel</i>		
EGSE	CCS	1		
	CCS lite	1		
	TM/TC DFE	1		
	CDMU SCOE	1		
	ACMS SCOE	1		
	TT&C SCOE	1		
	POWER SCOE	1		
	CCU SCOE			
IGSE	HIFI IGSE	1		
	PACS IGSE	1		
	SPIRE IGSE	1		
PCS	PCDU	1+1		
	Battery	1 Installed. Only connected for Launch clean run	1	Battery Simulation for other tests
	Solar Array	30 nom sections not required for IST	1	Power SCOE
CDMS	CDMU	1+1		
ACMS	ACC	1+1		
	RWA	3+1		
	GYRO	3+1		
	STR	2		
	CRS	2		
	AAD	1+1 internal red		
	SAS	2+2 internal red		
TT&C	XPND	2		
	TWT	2		
	EPC	2		
	LGA	2 (not used during the IST)		

S/S	Unit	Configuration	SCOE simulated equipments	Remarks
	MGA	1 (not used during the IST)		
RCS		1+1 (not used during the IST)		ACMS SCOE
TCS		1 (partially installed)		
VMC		1		
SREM		1		
HIFI		1		
PACS		1		
SPIRE		1		
Telescope		1		
HSS		1		

Table 1: Satellite configuration required for IST

4.2 SW Configuration

The Satellite IST will be run with the on-board software configuration as detailed in the IST TRR.

The actual configuration of the software should be noted here to ensure correct system status

- CDMS OBSW: _____
- ACMS OBSW: _____
- STR PROM SW: _____
- STR EEPROM SW: _____
- PACS DPU SW: _____
- PACS SPU SW: _____
- PACS DMC SW: _____
- HIFI ICU SW: _____
- SPIRE DPU SW: _____

} SEE MOM
H-P-TASF-MN-
10392
JDL. 30/04/08

4.3 SCOE Cables Connection

For the IST there are four different SCOE cables configuration.

- Configuration 1 for "Nominal Launch" and "RMS" see 4.3.1
- Configuration 2 for " Instrument Commissioning", "Mode Transitions", "S/C Reconfiguration", "Launch Mode Robustness", "CDMS management", "ACMS Commissioning", "Satellite commissioning" and "DTCP Worst Case Scenario" " NOM Mode Robustness" 4.3.2
- Configuration 3 for " Launch Clean Run" 4.3.3

4.3.1 SCOE cable connection for "RMS"

SCOE CABLES CONNECTION to HERSCHEL S/C					
SKIN-01	PWR Panel (PCDU)				
	Connector Function	Skin Connector	S/C unit	SCOE CABLE	Flight Connector
	BS Nom Power	SK01BJ09	PCDU		PCDU Flight Plug SK01BP09 Plugged
	BS Red Power	SK01BJ10	PCDU		PCDU Flight Plug SK01BP09 Plugged
	BDR1 AIT	SK01BJ11	PCDU	LPS SCOE Cable Plugged	
	BDR2 AIT	SK01BJ12	PCDU	LPS SCOE Cable Plugged	
	SA Nom Power	SK01AJ01	PCDU	POWER SCOE Cable Plugged	
	SA Nom Power	SK01AJ02	PCDU	POWER SCOE Cable Plugged	
	SA Nom Power	SK01AJ03	PCDU	POWER SCOE Cable Plugged	
	SA Red Power	SK01AJ04	PCDU	Connector Cover	
	SA Red Power	SK01AJ05	PCDU	POWER SCOE Cable Plugged	
	SA Red Power	SK01AJ06	PCDU	POWER SCOE Cable Plugged	
	SA Red Power	SK01AJ07	PCDU	POWER SCOE Cable Plugged	
SKIN-02	PWR Panel (ACC, CDMU, RCS, 1553 & Thruster)				
	Connector Function	Skin Connector	S/C unit	SCOE CABLE	Flight Connector
	DMS 1553 Bus_A	J01	CDMU	Bus Monitor Cable Plugged	
	DMS 1553 Bus_B	J02	CDMU	Bus Monitor Cable Plugged	
	ACMS 1553 Bus_A	J03	ACC	ACMS SCOE Cable Plugged	
	ACMS 1553 Bus_B	J04	ACC	ACMS SCOE Cable Plugged	
	LV1/FCV 20N CMD S/A M	J05	ACC/RCS	ACMS SCOE Cable Plugged	
	LV2/FCV 20N CMD S/A R	J06	ACC/RCS	ACMS SCOE Cable Plugged	

SKIN-02	RCS Press/Tank Temp/PT Pwr	J07	ACC/PT&TH	ACMS SCOE Cable Plugged	
SKIN-02	Thruster Temp M/LV1 Sts	J08	ACC/RCS	ACMS SCOE Cable Plugged	
SKIN-02	CDMU and ACC EEPROM reprogramming input	J09	ACC/CDMU		Flight Cap SK02P09 Plugged
SKIN-02	CDMU and ACC EEPROM reprogramming input	J10	ACC/CDMU		Flight Cap SK02P10 Plugged
SKIN-02	Thruster Temp R/LV2 Sts	J11	ACC/RCS	ACMS SCOE Cable Plugged	
SKIN-02	Thruster C/B Heaters M	J12	ACC/CBH	ACMS SCOE Cable Plugged	
SKIN-02	Thruster C/B Heaters R	J13	ACC/CBH	ACMS SCOE Cable Plugged	
SKIN-02	Str1/2 On/Off Cmd M/Str1 Sts	J14	ACC/STR-1		ACMS Flight Cap SK02P14 Plugged
SKIN-02	Str1/2 On/Off Cmd R/Str2 Sts	J15	ACC/STR-2		ACMS Flight Cap SK02P15 Plugged
SKIN-02	Gyro A On/Off Cmd	J16	ACC/GYRO-E1		ACMS Flight Cap SK02P16 Plugged
SKIN-02	Gyro B On/Off Cmd	J17	ACC/GYRO-E2		ACMS Flight Cap SK02P17 Plugged
SKIN-03	TTC Panel				
	Connector Function	Skin Connector	S/C unit	SCOE CABLE	Flight Connector
SKIN-03	Test point TC + protection jumper EPC1	SK03J01	XPND1/EPC1		Plastic cap (See note1)
SKIN-03	Test point TC + protection jumper EPC2	SK03J02	XPND2/EPC2		Plastic cap (See note1)
	RF LINK				
	Connector Function	Skin Connector	S/C unit	SCOE CABLE	Flight Connector
	RF link for antenna LGA1	N/A	LGA1	RF SCOE LGA1 Plugged	LGA1 Anechoic Cap
	RF link for antenna LGA2	N/A	LGA2	RF SCOE LGA2 Plugged	LGA2 Anechoic Cap
	RF link for antenna MGA	N/A	MGA	RF SCOE MGA Plugged	MGA Anechoic Cap
SKIN-04	ACMS Panel (RWE)				
	Connector Function	Skin Connector	S/C unit	SCOE CABLE	Flight Connector
SKIN-04	RWL1 Sgn	J01	ACC/RWL-1		ACMS Flight Cap SK04P01 Plugged
SKIN-04	RWL2 Sgn	J02	ACC/RWL-2		ACMS Flight Cap SK04P02 Plugged
SKIN-04	RWL3 Sgn	J03	ACC/RWL-3		ACMS Flight Cap SK04P03 Plugged

SKIN-04	RWL4 Sgn	J04	ACC/RWL-4		ACMS Flight Cap SK04P04 Plugged
SKIN-05	GYR/QRS Panel				
	Connector Function	Skin Connector	S/C unit	SCOE CABLE	Flight Connector
SKIN-05	CRS1 AOCs Sgn	J01	CRS-1/ACC		ACMS Flight Cap
SKIN-05	CRS2 AOCs Sgn	J02	CRS-2/ACC		ACMS Flight Cap
SKIN-05	GYRO RS422 / Test	J03	GYRO	ACMS SCOE Cable Plugged	
SKIN-05	CRS 1/2 Stimuli	J04	CRS-1,2	ACMS SCOE Cable Plugged	
SKIN-05	AAD Sgn M	J05	AAD/ACC	ACMS SCOE Cable Plugged	
SKIN-05	SAS1/2 Sgn M	J06	SAS/ACC	ACMS SCOE Cable Plugged	
SKIN-05	SAS1/2 Sgn R	J07	SAS/ACC	ACMS SCOE Cable Plugged	
SKIN-05	AAD Sgn R	J08	AAD/ACC	ACMS SCOE Cable Plugged	
SKIN-06	STR Panel				
	Connector Function	Skin Connector	S/C unit	SCOE CABLE	Flight Connector
SKIN-06	STR1 Stimuli	J01	STR1	ACMS SCOE Cable Plugged	
SKIN-06	STR2 Stimuli	J02	STR2	ACMS SCOE Cable Plugged	
	UMBILICAL				
	Connector Function	Connector	S/C unit	SCOE CABLE	
	Power/Data	HU1 J01	SYSTEM	SCOE's cable Plugged	
	Power/Data	HU2 J01	SYSTEM	SCOE's cable Plugged	

CryoSCOE harness setup for ACS/PR/TP No.:						
Annex No.:						
315 100	on top of					
	Connector Function	Connector	S/C unit	SCOE	CryoSCOE connected	CCU Flight connected
	Temperature Sensors	315100-J01	T117, T118, T207, T211, T238, T239, T249, T251, T253, T255, T423, T443, T463, T851, T852, T853, T861	Cryo SCOE J07 & J15		no flight
	Temperature & pressure Sensors	315100-J03	T702, T872, P101, T103, T115, T116, T704, T802, T803, T805, T806, T871	Cryo SCOE J01 & J17		no flight
	Temperature Sensors	315100-J05	T331, T333, T335, T337, T339, T341 (Telescope)	Cryo SCOE J14		X
Temperature Sensors	315100-J06	T332, T334, T336, T338, T340, T342 (Telescope)	Cryo SCOE J10		X	
316 100	on top of					
	Connector Function	Connector	S/C unit	SCOE	CryoSCOE connected	CCU Flight connected
	Valve Sensor	316100-J01	VS501, VS504			X
Valve Sensor	316100-J02	VS503, VS505			X	
321 100	on top of					
	Connector Function	Connector	S/C unit	SCOE	CryoSCOE connected	CCU Flight connected
		321100-J01	L701, H701	Cryo SCOE J11		no flight
		321100-J02	LL702, H702	Cryo SCOE J03		no flight
		321100-J03	H502, H503	Cryo SCOE J06		no flight
	321100-J04	P501	Cryo SCOE J01		no flight	

			H103, H701, L102, VT102, VT103, VT105, VT701, VH102, VH103, VH105, VH701, VS102, VS105, VS701	Cryo SCOE J11		no flight
			H104, H702, L101, VT104, VT106, VT702, VH104, VH106, VH702, VS104, VS702	Cryo SCOE J03		no flight
			H501	Cryo SCOE J06		no flight
			T502	Cryo SCOE J01		no flight
321 200	on top of					
	Connector Function	Connector	S/C unit	SCOE	CryoSCOE connected	CCU Flight connected
			T202, T212, T221, T223, T227, T228, T232, T234, T236, T242, T244, T246, T250, T254, T258, T424, T464	Cryo SCOE J08		X
			T102, T105, T106, T111, PR_P701, T421, T442, T461, H101	Cryo SCOE J04		X
			T321, T323, T501, T505, T651, T901, T903, T907, T911	Cryo SCOE J09		X
			T312, T314, T316, T905, T909, T931, T933, T935	Cryo SCOE J09		X
			VS103, H102	Cryo SCOE J04		X
321 300	on top of					
	Connector Function	Skin Connector	S/C unit	SCOE	SCOE Cable connected	Flight Cap connected

			T208, T213, T222, T224, T225, T226, T231, T233, T235, T237, T247, T248, T252, T256, T862, T444	Cryo SCOE J02		X
		321300-J02	T101, T104, T107, T112, T703, T422, T441, T462, T701, H102	Cryo SCOE J04		X
		321300-J03	P502, T322, T324, T504, T506, T507, T652, T902, T908, T912	Cryo SCOE J18		X
		321300-J04	T311, T313, T315, T904, T906, T910, T932, T934	Cryo SCOE J14		X
		321300-J05	VS106, H102	Cryo SCOE J04		X
CVSE I/F	on top of					
	Connector Function	Skin Connector	S/C unit	SCOE	SCOE Cable connected	Flight Cap connected
				Cryo SCOE J18		X
to be approved & released before start of ACS/PR/TP by Floor-Manager		Date:		Sign:		

SAFE / ARM plug setup for ACS/PR/TP No.:						
Annex No.:						
314 200	on top of					
	Connector Function	Connector	S/C unit	SAFE	ARM	Sign
	SAFE / ARM plug	314 200-J03	NED (601)	X		
	SAFE / ARM plug	314 200-J04	NED (602)	X		
	SAFE / ARM plug	314 200-J05	SI 601	X		
	SAFE / ARM plug	314 200-J06	SI 602	X		
to be approved & released before start of ACS/PR/TP by Floor-Manager		Date:		Sign:		

4.3.2 SCOE cable connection for "Nominal Launch", "Satellite Commissioning", "Instrument Commissioning", "ACMS Commissioning", "Mode Transitions", S/C Reconfiguration", "CDMS management", DTCP Worst Case Scenario", "Launch Mode Robustness", "NOM Mode Robustness" and "Instrument FDIR"

SCOE CABLES CONNECTION to HERSCHEL S/C					
SKIN-01	PWR Panel (PCDU)				
	Connector Function	Skin Connector	S/C unit	SCOE CABLE	Flight Connector
	BS Nom Power	SK01BJ09	PCDU	BS SCOE Cable Plugged ✓	
	BS Red Power	SK01BJ10	PCDU	BS SCOE Cable Plugged ✓	
	BDR1 AIT	SK01BJ11	PCDU	LPS SCOE Cable Plugged ✓	
	BDR2 AIT	SK01BJ12	PCDU	LPS SCOE Cable Plugged ✓	
	SA Nom Power	SK01AJ01	PCDU	POWER SCOE Cable Plugged ✓	
	SA Nom Power	SK01AJ02	PCDU	POWER SCOE Cable Plugged ✓	
	SA Nom Power	SK01AJ03	PCDU	POWER SCOE Cable Plugged ✓	
	SA Red Power	SK01AJ04	PCDU	Connector Cover ✓	
	SA Red Power	SK01AJ05	PCDU	POWER SCOE Cable Plugged ✓	
	SA Red Power	SK01AJ06	PCDU	POWER SCOE Cable Plugged ✓	
	SA Red Power	SK01AJ07	PCDU	POWER SCOE Cable Plugged ✓	
SKIN-02	PWR Panel (ACC, CDMU, RCS, 1553 & Thruster)				
	Connector Function	Skin Connector	S/C unit	SCOE CABLE	Flight Connector
	SKIN-02 DMS 1553 Bus_A	J01	CDMU	Bus Monitor Cable Plugged ✓	
	SKIN-02 DMS 1553 Bus_B	J02	CDMU	Bus Monitor Cable Plugged ✓	
	SKIN-02 ACMS 1553 Bus_A	J03	ACC	ACMS SCOE Cable Plugged ✓	
	SKIN-02 ACMS 1553 Bus_B	J04	ACC	ACMS SCOE Cable Plugged ✓	
SKIN-02 LV1/FCV 20N CMD S/A M	J05	ACC/RCS	ACMS SCOE ✓		

28.4.08 ✓

AS SAT COMM & FDIR ORCP
SKINS HAVE NOT CHANGED
30/04/08

				Cable Plugged	
SKIN-02	LV2/FCV 20N CMD S/A R	J06	ACC/RCS	ACMS SCOE Cable Plugged	
SKIN-02	RCS Press/Tank Temp/PT Pwr	J07	ACC/PT&TH	ACMS SCOE Cable Plugged	
SKIN-02	Thruster Temp M/LV1 Sts	J08	ACC/RCS	ACMS SCOE Cable Plugged	
SKIN-02	CDMU and ACC EEPROM reprogramming input	J09	ACC/CDMU		Flight Cap SK02P09 Plugged
SKIN-02	CDMU and ACC EEPROM reprogramming input	J10	ACC/CDMU		Flight Cap SK02P10 Plugged
SKIN-02	Thruster Temp R/LV2 Sts	J11	ACC/RCS	ACMS SCOE Cable Plugged	
SKIN-02	Thruster C/B Heaters M	J12	ACC/CBH	ACMS SCOE Cable Plugged	
SKIN-02	Thruster C/B Heaters R	J13	ACC/CBH	ACMS SCOE Cable Plugged	
SKIN-02	Str1/2 On/Off Cmd M/Str1 Sts	J14	ACC/STR-1		ACMS Flight Cap SK02P14 Plugged
SKIN-02	Str1/2 On/Off Cmd R/Str2 Sts	J15	ACC/STR-2		ACMS Flight Cap SK02P15 Plugged
SKIN-02	Gyro A On/Off Cmd	J16	ACC/GYRO-E1		ACMS Flight Cap SK02P16 Plugged
SKIN-02	Gyro B On/Off Cmd	J17	ACC/GYRO-E2		ACMS Flight Cap SK02P17 Plugged
SKIN-03	TTC Panel				
	Connector Function	Skin Connector	S/C unit	SCOPE CABLE	Flight Connector
SKIN-03	Test point TC + protection jumper EPC1	SK03J01	XPND1/EPC1		Plastic cap (See note1)
SKIN-03	Test point TC + protection jumper EPC2	SK03J02	XPND2/EPC2		Plastic cap (See note1)
	RF LINK				
	Connector Function	Skin Connector	S/C unit	SCOPE CABLE	Flight Connector
	RF link for antenna LGA1	N/A	LGA1	RF SCOPE LGA1 Plugged	LGA1 Anechoic Cap
	RF link for antenna LGA2	N/A	LGA2	RF SCOPE LGA2 Plugged	LGA2 Anechoic Cap
	RF link for antenna MGA	N/A	MGA	RF SCOPE MGA Plugged	MGA Anechoic Cap
SKIN-04	ACMS Panel (RWE)				
	Connector Function	Skin Connector	S/C unit	SCOPE CABLE	Flight Connector
SKIN-04	RWL1 Sgn	J01	ACC/RWL-1		ACMS Flight Cap SK04P01 Plugged
SKIN-04	RWL2 Sgn	J02	ACC/RWL-2		ACMS Flight Cap

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SKIN-04					SK04P02 Plugged
SKIN-04	RWL3 Sgn	J03	ACC/RWL-3		ACMS Flight Cap. SK04P03 Plugged ✓
SKIN-04	RWL4 Sgn	J04	ACC/RWL-4		ACMS Flight Cap. SK04P04 Plugged ✓
SKIN-05	GYR/QRS Panel				
	Connector Function	Skin Connector	S/C unit	SCOE CABLE	Flight Connector
SKIN-05	CRS1 AOCs Sgn	J01	CRS-1/ACC		ACMS Flight Cap. ✓
SKIN-05	CRS2 AOCs Sgn	J02	CRS-2/ACC		ACMS Flight Cap. ✓
SKIN-05	GYRO RS422 / Test	J03	GYRO	ACMS SCOE Cable Plugged ✓	
SKIN-05	CRS 1/2 Stimuli	J04	CRS-1,2	ACMS SCOE Cable Plugged ✓	
SKIN-05	AAD Sgn M	J05	AAD/ACC	ACMS SCOE Cable Plugged ✓	
SKIN-05	SAS1/2 Sgn M	J06	SAS/ACC	ACMS SCOE Cable Plugged ✓	
SKIN-05	SAS1/2 Sgn R	J07	SAS/ACC	ACMS SCOE Cable Plugged ✓	
SKIN-05	AAD Sgn R	J08	AAD/ACC	ACMS SCOE Cable Plugged ✓	
SKIN-06	STR Panel				
	Connector Function	Skin Connector	S/C unit	SCOE CABLE	Flight Connector
SKIN-06	STR1 Stimuli	J01	STR1	ACMS SCOE Cable Plugged ✓	
SKIN-06	STR2 Stimuli	J02	STR2	ACMS SCOE Cable Plugged ✓	
	UMBILICAL				
	Connector Function	Connector	S/C unit	SCOE CABLE	
	Power/Data	HU1 J01	SYSTEM	SCOE's cable Plugged ✓	
	Power/Data	HU2 J01	SYSTEM	SCOE's cable Plugged ✓	


28.4.08 ✓


CryoSCOE harness setup for ACS/PR/TP No.:						
Annex No.:						
315 100	on top of					
	Connector Function	Connector	S/C unit	SCOE	CryoSCOE connected	CCU Flight connected
	Temperature Sensors	315100-J01	T117, T118, T207, T211, T238, T239, T249, T251, T253, T255, T423, T443, T463, T851, T852, T853, T861	Cryo SCOE J07 & J15	X ✓	no flight
	Temperature & pressure Sensors	315100-J03	T702, T872, P101, T103, T115, T116, T704, T802, T803, T805, T806, T871	Cryo SCOE J01 & J17	X ✓	no flight
	Temperature Sensors	315100-J05	T331, T333, T335, T337, T339, T341 (Telescope)	Cryo SCOE J14		X ✓
	Temperature Sensors	315100-J06	T332, T334, T336, T338, T340, T342 (Telescope)	Cryo SCOE J10		X ✓
316 100	on top of					
	Connector Function	Connector	S/C unit	SCOE	CryoSCOE connected	CCU Flight connected
	Valve Sensor	316100-J01	VS501, VS504			X ✓
Valve Sensor	316100-J02	VS503, VS505			X ✓	
321 100	on top of					
	Connector Function	Connector	S/C unit	SCOE	CryoSCOE connected	CCU Flight connected
		321100-J01	L701, H701	Cryo SCOE J11	X ✓	no flight
		321100-J02	LL702, H702	Cryo SCOE J03	X ✓	no flight
	321100-J03	H502, H503	Cryo SCOE J06	X ✓	no flight	

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	321100-J04	P501	Cryo SCOE J01	X ✓	no flight	
	321100-J05	H103, H701, L102, VT102, VT103, VT105, VT701, VH102, VH103, VH105, VH701, VS102, VS105, VS701	Cryo SCOE J11	X ✓	no flight	
	321100-J06	H104, H702, L101, VT104, VT106, VT702, VH104, VH106, VH702, VS104, VS702	Cryo SCOE J03	X ✓	no flight	
	321100-J07	H501	Cryo SCOE J06	X ✓	no flight	
	321100-J08	T502	Cryo SCOE J01	X ✓	no flight	
321 200	on top of					
	Connector Function	Connector	S/C unit	SCOE	CryoSCOE connected	CCU Flight connected
		321200-J01	T202, T212, T221, T223, T227, T228, T232, T234, T236, T242, T244, T246, T250, T254, T258, T424, T464	Cryo SCOE J08		X ✓
		321200-J02	T102, T105, T106, T111, PR_P701, T421, T442, T461, H101	Cryo SCOE J04		X ✓
		321200-J03	T321, T323, T501, T505, T651, T901, T903, T907, T911	Cryo SCOE J09		X ✓
		321200-J04	T312, T314, T316, T905, T909, T931, T933, T935	Cryo SCOE J09		X ✓
		321200-J05	VS103, H102	Cryo SCOE J04		X ✓

28.4.08 *[Signature]*

321 300	on top of					
	Connector Function	Skin Connector	S/C unit	SCOE	SCOE Cable connected	Flight Cap connected
		321300-J01	T208, T213, T222, T224, T225, T226, T231, T233, T235, T237, T247, T248, T252, T256, T862, T444	Cryo SCOE J02		X ✓
		321300-J02	T101, T104, T107, T112, T703, T422, T441, T462, T701, H102	Cryo SCOE J04		X ✓
		321300-J03	P502, T322, T324, T504, T506, T507, T652, T902, T908, T912	Cryo SCOE J18		X ✓
		321300-J04	T311, T313, T315, T904, T906, T910, T932, T934	Cryo SCOE J14		X ✓
	321300-J05	VS106, H102	Cryo SCOE J04		X ✓	
CVSE I/F	on top of					
	Connector Function	Skin Connector	S/C unit	SCOE	SCOE Cable connected	Flight Cap connected
				Cryo SCOE J18		X ✓
to be approved & released before start of ACS/PR/TP by Floor-Manager		Date: 28.4.08 7 30		Sign: 		

SAFE / ARM plug setup for ACS/PR/TP No.:						
Annex No.:						
314 200	on top of					
	Connector Function	Connector	S/C unit	SAFE	ARM	Sign
	SAFE / ARM plug	314 200-J03	NED (601)	X ✓		
	SAFE / ARM plug	314 200-J04	NED (602)	X ✓		
	SAFE / ARM plug	314 200-J05	SI 601	X ✓		
	SAFE / ARM plug	314 200-J06	SI 602	X ✓		
to be approved & released before start of ACS/PR/TP by Floor-Manager			Date:	Sign:		
			28.7.06			

4.3.2 SCOE cable connection for "Nominal Launch", "Satellite Commissioning", "Instrument Commissioning", "ACMS Commissioning", "Mode Transitions", S/C Reconfiguration", "CDMS management", DTCP Worst Case Scenario", "Launch Mode Robustness", "NOM Mode Robustness" and "Instrument FDIR"

SCOE CABLES CONNECTION to HERSCHEL S/C					
SKIN-01	PWR Panel (PCDU)				
	Connector Function	Skin Connector	S/C unit	SCOE CABLE	Flight Connector
	BS Nom Power	SK01BJ09	PCDU	BS SCOE Cable Plugged	
	BS Red Power	SK01BJ10	PCDU	BS SCOE Cable Plugged	
	BDR1 AIT	SK01BJ11	PCDU	LPS SCOE Cable Plugged	
	BDR2 AIT	SK01BJ12	PCDU	LPS SCOE Cable Plugged	
	SA Nom Power	SK01AJ01	PCDU	POWER SCOE Cable Plugged	
	SA Nom Power	SK01AJ02	PCDU	POWER SCOE Cable Plugged	
	SA Nom Power	SK01AJ03	PCDU	POWER SCOE Cable Plugged	
	SA Red Power	SK01AJ04	PCDU	Connector Cover	
	SA Red Power	SK01AJ05	PCDU	POWER SCOE Cable Plugged	
	SA Red Power	SK01AJ06	PCDU	POWER SCOE Cable Plugged	
	SA Red Power	SK01AJ07	PCDU	POWER SCOE Cable Plugged	
	SKIN-02	PWR Panel (ACC, CDMU, RCS, 1553 & Thruster)			
Connector Function		Skin Connector	S/C unit	SCOE CABLE	Flight Connector
DMS 1553 Bus_A		J01	CDMU	Bus Monitor Cable Plugged	
DMS 1553 Bus_B		J02	CDMU	Bus Monitor Cable Plugged	
ACMS 1553 Bus_A		J03	ACC	ACMS SCOE Cable Plugged	
ACMS 1553 Bus_B		J04	ACC	ACMS SCOE Cable Plugged	
LV1/FCV 20N CMD S/A M		J05	ACC/RCS	ACMS SCOE	

				Cable Plugged	
SKIN-02	LV2/FCV 20N CMD S/A R	J06	ACC/RCS	ACMS SCOE Cable Plugged	
SKIN-02	RCS Press/Tank Temp/PT Pwr	J07	ACC/PT&TH	ACMS SCOE Cable Plugged	
SKIN-02	Thruster Temp M/LV1 Sts	J08	ACC/RCS	ACMS SCOE Cable Plugged	
SKIN-02	CDMU and ACC EEPROM reprogramming input	J09	ACC/CDMU		Flight Cap SK02P09 Plugged
SKIN-02	CDMU and ACC EEPROM reprogramming input	J10	ACC/CDMU		Flight Cap SK02P10 Plugged
SKIN-02	Thruster Temp R/LV2 Sts	J11	ACC/RCS	ACMS SCOE Cable Plugged	
SKIN-02	Thruster C/B Heaters M	J12	ACC/CBH	ACMS SCOE Cable Plugged	
SKIN-02	Thruster C/B Heaters R	J13	ACC/CBH	ACMS SCOE Cable Plugged	
SKIN-02	Str1/2 On/Off Cmd M/Str1 Sts	J14	ACC/STR-1		ACMS Flight Cap SK02P14 Plugged
SKIN-02	Str1/2 On/Off Cmd R/Str2 Sts	J15	ACC/STR-2		ACMS Flight Cap SK02P15 Plugged
SKIN-02	Gyro A On/Off Cmd	J16	ACC/GYRO-E1		ACMS Flight Cap SK02P16 Plugged
SKIN-02	Gyro B On/Off Cmd	J17	ACC/GYRO-E2		ACMS Flight Cap SK02P17 Plugged
SKIN-03	TTC Panel				
	Connector Function	Skin Connector	S/C unit	SCOE CABLE	Flight Connector
SKIN-03	Test point TC + protection jumper EPC1	SK03J01	XPND1/EPC1		Plastic cap (See note1)
SKIN-03	Test point TC + protection jumper EPC2	SK03J02	XPND2/EPC2		Plastic cap (See note1)
	RF LINK				
	Connector Function	Skin Connector	S/C unit	SCOE CABLE	Flight Connector
	RF link for antenna LGA1	N/A	LGA1	RF SCOE LGA1 Plugged	LGA1 Anechoic Cap
	RF link for antenna LGA2	N/A	LGA2	RF SCOE LGA2 Plugged	LGA2 Anechoic Cap
	RF link for antenna MGA	N/A	MGA	RF SCOE MGA Plugged	MGA Anechoic Cap
SKIN-04	ACMS Panel (RWE)				
	Connector Function	Skin Connector	S/C unit	SCOE CABLE	Flight Connector
SKIN-04	RWL1 Sgn	J01	ACC/RWL-1		ACMS Flight Cap SK04P01 Plugged
SKIN-04	RWL2 Sgn	J02	ACC/RWL-2		ACMS Flight Cap

SKIN-04					SK04P02 Plugged
SKIN-04	RWL3 Sgn	J03	ACC/RWL-3		ACMS Flight Cap SK04P03 Plugged
SKIN-04	RWL4 Sgn	J04	ACC/RWL-4		ACMS Flight Cap SK04P04 Plugged
SKIN-05	GYR/QRS Panel				
	Connector Function	Skin Connector	S/C unit	SCOE CABLE	Flight Connector
SKIN-05	CRS1 AOCs Sgn	J01	CRS-1/ACC		ACMS Flight Cap
SKIN-05	CRS2 AOCs Sgn	J02	CRS-2/ACC		ACMS Flight Cap
SKIN-05	GYRO RS422 / Test	J03	GYRO	ACMS SCOE Cable Plugged	
SKIN-05	CRS 1/2 Stimuli	J04	CRS-1,2	ACMS SCOE Cable Plugged	
SKIN-05	AAD Sgn M	J05	AAD/ACC	ACMS SCOE Cable Plugged	
SKIN-05	SAS1/2 Sgn M	J06	SAS/ACC	ACMS SCOE Cable Plugged	
SKIN-05	SAS1/2 Sgn R	J07	SAS/ACC	ACMS SCOE Cable Plugged	
SKIN-05	AAD Sgn R	J08	AAD/ACC	ACMS SCOE Cable Plugged	
SKIN-06	STR Panel				
	Connector Function	Skin Connector	S/C unit	SCOE CABLE	Flight Connector
SKIN-06	STR1 Stimuli	J01	STR1	ACMS SCOE Cable Plugged	
SKIN-06	STR2 Stimuli	J02	STR2	ACMS SCOE Cable Plugged	
	UMBILICAL				
	Connector Function	Connector	S/C unit	SCOE CABLE	
	Power/Data	HU1 J01	SYSTEM	SCOE's cable Plugged	
	Power/Data	HU2 J01	SYSTEM	SCOE's cable Plugged	

CryoSCOE harness setup for ACS/PR/TP No.:						
Annex No.:						
315 100	on top of					
	Connector Function	Connector	S/C unit	SCOE	CryoSCOE connected	CCU Flight connected
	Temperature Sensors	315100-J01	T117, T118, T207, T211, T238, T239, T249, T251, T253, T255, T423, T443, T463, T851, T852, T853, T861	Cryo SCOE J07 & J15		no flight
	Temperature & pressure Sensors	315100-J03	T702, T872, P101, T103, T115, T116, T704, T802, T803, T805, T806, T871	Cryo SCOE J01 & J17		no flight
	Temperature Sensors	315100-J05	T331, T333, T335, T337, T339, T341 (Telescope)	Cryo SCOE J14		X
Temperature Sensors	315100-J06	T332, T334, T336, T338, T340, T342 (Telescope)	Cryo SCOE J10		X	
316 100	on top of					
	Connector Function	Connector	S/C unit	SCOE	CryoSCOE connected	CCU Flight connected
	Valve Sensor	316100-J01	VS501, VS504			X
Valve Sensor	316100-J02	VS503, VS505			X	
321 100	on top of					
	Connector Function	Connector	S/C unit	SCOE	CryoSCOE connected	CCU Flight connected
		321100-J01	L701, H701	Cryo SCOE J11		no flight
		321100-J02	LL702, H702	Cryo SCOE J03		no flight
	321100-J03	H502, H503	Cryo SCOE J06		no flight	

		321100-J04	P501	Cryo SCOE J01		no flight
		321100-J05	H103, H701, L102, VT102, VT103, VT105, VT701, VH102, VH103, VH105, VH701, VS102, VS105, VS701	Cryo SCOE J11		no flight
		321100-J06	H104, H702, L101, VT104, VT106, VT702, VH104, VH106, VH702, VS104, VS702	Cryo SCOE J03		no flight
		321100-J07	H501	Cryo SCOE J06		no flight
		321100-J08	T502	Cryo SCOE J01		no flight
321 200	on top of					
	Connector Function	Connector	S/C unit	SCOE	CryoSCOE connected	CCU Flight connected
		321200-J01	T202, T212, T221, T223, T227, T228, T232, T234, T236, T242, T244, T246, T250, T254, T258, T424, T464	Cryo SCOE J08		X
		321200-J02	T102, T105, T106, T111, PR_P701, T421, T442, T461, H101	Cryo SCOE J04		X
		321200-J03	T321, T323, T501, T505, T651, T901, T903, T907, T911	Cryo SCOE J09		X
		321200-J04	T312, T314, T316, T905, T909, T931, T933, T935	Cryo SCOE J09		X
	321200-J05	VS103, H102	Cryo SCOE J04		X	

321 300	on top of					
	Connector Function	Skin Connector	S/C unit	SCOE	SCOE Cable connected	Flight Cap connected
		321300-J01	T208, T213, T222, T224, T225, T226, T231, T233, T235, T237, T247, T248, T252, T256, T862, T444	Cryo SCOE J02		X
		321300-J02	T101, T104, T107, T112, T703, T422, T441, T462, T701, H102	Cryo SCOE J04		X
		321300-J03	P502, T322, T324, T504, T506, T507, T652, T902, T908, T912	Cryo SCOE J18		X
		321300-J04	T311, T313, T315, T904, T906, T910, T932, T934	Cryo SCOE J14		X
CVSE I/F	on top of					
	Connector Function	Skin Connector	S/C unit	SCOE	SCOE Cable connected	Flight Cap connected
				Cryo SCOE J18		X
to be approved & released before start of ACS/PR/TP by Floor-Manager		Date:		Sign:		

SAFE / ARM plug setup for ACS/PR/TP No.:						
Annex No.:						
314 200	on top of					
	Connector Function	Connector	S/C unit	SAFE	ARM	Sign
	SAFE / ARM plug	314 200-J03	NED (601)	X		
	SAFE / ARM plug	314 200-J04	NED (602)	X		
	SAFE / ARM plug	314 200-J05	SI 601	X		
	SAFE / ARM plug	314 200-J06	SI 602	X		
to be approved & released before start of ACS/PR/TP by Floor-Manager		Date:		Sign:		

4.3.3 SCOE cable connection for "Launch Clean Run"

SVM / EGSE harness setup for ACS/PR/TP No.:						
Annex No.:						
SKIN-01	PWR Panel (PCDU)					
	Connector Function	SCOE	S/C unit	Skin Connector	Connection	Sign
	SA Nom Power	SAS SCOE	PCDU	SK01A J/P01	disconnected	
	SA Nom Power	SAS SCOE	PCDU	SK01A J/P02	disconnected	
	SA Nom Power	SAS SCOE	PCDU	SK01A J/P03	disconnected	
			Battery	SK01A J/P04	EMC cover	
	SA Red Power	SAS SCOE	PCDU	SK01A J/P05	disconnected	
	SA Red Power	SAS SCOE	PCDU	SK01A J/P06	disconnected	
	SA Red Power	SAS SCOE	PCDU	SK01A J/P07	disconnected	
	BS Nom Power	BS SCOE	PCDU	SK01B J/P09	Flight	
	BS Red Power	BS SCOE	PCDU	SK01B J/P10	Flight	
	BDR1 AIT	SAS SCOE	PCDU	SK01B J/P11	LPS SCOE Cable Plugged	
	BDR2 AIT	SAS SCOE	PCDU	SK01B J/P12	LPS SCOE Cable Plugged	
SKIN-02	PWR Panel (ACC, CDMU, RCS, 1553 & Thruster)					
	Connector Function	SCOE	S/C unit	Skin Connector	Connection	Sign
	DMS 1553 Bus_A	CDMU SCOE	CDMU	SK02 J/P01	Flight	
	DMS 1553 Bus_B	CDMU SCOE	CDMU	SK02 J/P02	Flight	
	ACMS 1553 Bus_A	ACMS SCOE	ACC	SK02 J/P03	Flight	
	ACMS 1553 Bus_B	ACMS SCOE	ACC	SK02 J/P04	Flight	
	LV1/FCV 20N CMD S/A M	ACMS SCOE	ACC/RCS	SK02 J/P05	disconnected	
	LV2/FCV 20N CMD S/A R	ACMS SCOE	ACC/RCS	SK02 J/P06	disconnected	
	RCS Press/Tank Temp/PT Pwr	ACMS SCOE	ACC/PT&TH	SK02 J/P07	Flight	
	Thruster Temp M/LV1 Sts	ACMS SCOE	ACC/RCS	SK02 J/P08	Flight	

	Quick S/W load	grey ACMS	black CDMS	SK02 J/P09	disconnected		
	Quick S/W load	grey ACMS	black CDMS	SK02 J/P10	disconnected		
	Thruster Temp R/LV2 Sts	ACMS SCOE	ACC/RCS	SK02 J/P11	Flight		
	Thruster C/B Heaters M	ACMS SCOE	ACC/CBH	SK02 J/P12	disconnected		
	Thruster C/B Heaters R	ACMS SCOE	ACC/CBH	SK02 J/P13	disconnected		
	Str1/2 On/Off Cmd M/Str1 Sts	ACMS SCOE	ACC/STR-1	SK02 J/P14	Flight		
	Str1/2 On/Off Cmd R/Str2 Sts	ACMS SCOE	ACC/STR-2	SK02 J/P15	Flight		
	Gyro A On/Off Cmd		ACC/GYRO-E1	SK02 J/P16	Flight		
	Gyro B On/Off Cmd		ACC/GYRO-E2	SK02 J/P17	Flight		
SKIN-03	TTC Panel						
	Connector Function	SCOE	S/C unit	Skin Connector	Connection		Sign
	Test point TC + protection jumper EPC1	Plastic Cap	XPND1/EPC1	SK03 J/P01	Flight		
	Test point TC + protection jumper EPC2	Plastic Cap	XPND2/EPC2	SK03 J/P02	Flight		
	RF LINK						
	Connector Function	SCOE	S/C unit	Skin Connector	Connection		Sign
	RF link for antenna LGA1	TT&C SCOE	LGA1	LGA1 Anechoic Cap	RF-SCOE		
	RF link for antenna LGA2	TT&C SCOE	LGA2	LGA2 Anechoic Cap	RF-SCOE		
	RF link for antenna MGA	TT&C SCOE	MGA	MGA Anechoic Cap	RF-SCOE		
SKIN-04	ACMS Panel (RWE)						
	Connector Function	SCOE	S/C unit	Skin Connector	Connection		Sign
	RWL1 Sgn		ACC/RWL-1	SK04 J/P01	Flight		
	RWL2 Sgn		ACC/RWL-2	SK04 J/P02	Flight		
	RWL3 Sgn		ACC/RWL-3	SK04 J/P03	Flight		
	RWL4 Sgn		ACC/RWL-4	SK04 J/P04	Flight		

SKIN-05	GYR/QRS Panel					
	Connector Function	SCOE	S/C unit	Skin Connector	Connection	Sign
	CRS1 AOCs Sgn		CRS-1/ACC	SK05 J/P01	Flight	
	CRS2 AOCs Sgn		CRS-2/ACC	SK05 J/P02	Flight	
	GYRO RS422 / Test	ACMS SCOE	GYRO	SK05 J/P03	disconnected	
	CRS 1/2 Stimuli	ACMS SCOE	CRS-1,2	SK05 J/P04	disconnected	
	AAD Sgn M	ACMS SCOE	AAD/ACC	SK05 J/P05	Flight	
	SAS1/2 Sgn M	ACMS SCOE	SAS/ACC	SK05 J/P06	Flight	
	SAS1/2 Sgn R	ACMS SCOE	SAS/ACC	SK05 J/P07	Flight	
AAD Sgn R	ACMS SCOE	AAD/ACC	SK05 J/P08	Flight		
SKIN-06	STR Panel					
	Connector Function	SCOE	S/C unit	Skin Connector	Connection	Sign
	STR1 Stimuli	STR1	STR1	SK06 J/P01	disconnected	
	STR2 Stimuli	STR2	STR2	SK06 J/P02	disconnected	
UMBILICAL						
	Connector Function	SCOE	S/C unit	Connector	Connection	Sign
	Power/Data	System	SYSTEM	HUJ01	SCOE	
	Power/Data	System	SYSTEM	HUJ02	SCOE	
approved SE		approved AIT		approved PA/Safety	approved Floor-Manger	
sign off:						

CryoSCOE harness setup for ACS/PR/TP No.:						
Annex No.:						
315 100	on top of					
	Connector Function	Connector	S/C unit	SCOE	CryoSCOE connected	CCU Flight connected
	Temperature Sensors	315100-J01	T117, T118, T207, T211, T238, T239, T249, T251, T253, T255, T423, T443, T463, T851, T852, T853, T861	Cryo SCOE J07 & J15		no flight
	Temperature & pressure Sensors	315100-J03	T702, T872, P101, T103, T115, T116, T704, T802, T803, T805, T806, T871	Cryo SCOE J01 & J17		no flight
	Temperature Sensors	315100-J05	T331, T333, T335, T337, T339, T341 (Telescope)	Cryo SCOE J14		X
Temperature Sensors	315100-J06	T332, T334, T336, T338, T340, T342 (Telescope)	Cryo SCOE J10		X	
316 100	on top of					
	Connector Function	Connector	S/C unit	SCOE	CryoSCOE connected	CCU Flight connected
	Valve Sensor	316100-J01	VS501, VS504			X
Valve Sensor	316100-J02	VS503, VS505			X	
321 100	on top of					
	Connector Function	Connector	S/C unit	SCOE	CryoSCOE connected	CCU Flight connected
		321100-J01	L701, H701	Cryo SCOE J11		no flight
		321100-J02	LL702, H702	Cryo SCOE J03		no flight
		321100-J03	H502, H503	Cryo SCOE J06		no flight
	321100-J04	P501	Cryo SCOE J01		no flight	

			H103, H701, L102, VT102, VT103, VT105, VT701, VH102, VH103, VH105, VH701, VS102, VS105, VS701	Cryo SCOE J11		no flight
		321100-J06	H104, H702, L101, VT104, VT106, VT702, VH104, VH106, VH702, VS104, VS702	Cryo SCOE J03		no flight
		321100-J07	H501	Cryo SCOE J06		no flight
		321100-J08	T502	Cryo SCOE J01		no flight
321 200	on top of					
	Connector Function	Connector	S/C unit	SCOE	CryoSCOE connected	CCU Flight connected
		321200-J01	T202, T212, T221, T223, T227, T228, T232, T234, T236, T242, T244, T246, T250, T254, T258, T424, T464	Cryo SCOE J08		X
		321200-J02	T102, T105, T106, T111, PR_P701, T421, T442, T461, H101	Cryo SCOE J04		X
		321200-J03	T321, T323, T501, T505, T651, T901, T903, T907, T911	Cryo SCOE J09		X
		321200-J04	T312, T314, T316, T905, T909, T931, T933, T935	Cryo SCOE J09		X
		321200-J05	VS103, H102	Cryo SCOE J04		X
	321 300	on top of				
Connector Function		Skin Connector	S/C unit	SCOE	SCOE Cable connected	Flight Cap connected

			T208, T213, T222, T224, T225, T226, T231, T233, T235, T237, T247, T248, T252, T256, T862, T444	Cryo SCOE J02		X
			T101, T104, T107, T112, T703, T422, T441, T462, T701, H102	Cryo SCOE J04		X
			P502, T322, T324, T504, T506, T507, T652, T902, T908, T912	Cryo SCOE J18		X
			T311, T313, T315, T904, T906, T910, T932, T934	Cryo SCOE J14		X
			VS106, H102	Cryo SCOE J04		X
CVSE I/F	on top of					
	Connector Function	Skin Connector	S/C unit	SCOE	SCOE Cable connected	Flight Cap connected
				Cryo SCOE J18		X
to be approved & released before start of ACS/PR/TP by Floor- Manager		Date:		Sign:		

SAFE / ARM plug setup for ACS/PR/TP No.:						
Annex No.:						
314 200	on top of					
	Connector Function	Connector	S/C unit	SAFE	ARM	Sign
	SAFE / ARM plug	314 200-J03	NED (601)	X		
	SAFE / ARM plug	314 200-J04	NED (602)	X		
	SAFE / ARM plug	314 200-J05	SI 601	X		
	SAFE / ARM plug	314 200-J06	SI 602	X		
to be approved & released before start of ACS/PR/TP by Floor-Manager		Date:		Sign:		



5 Conditions

5.1 Personnel

The following table shall be filled in detailing which personnel are required to be present for the test. The signature of the appropriate responsible is classified as agreement to start the test as stated in the TRR.

Responsibility	Required for Test (Y/N)	Name / Organization	Signature
Floor Manager	Y		
Test Director	Y	S. MOONEY	
Test Conductor	Y	C. MUCH G. HENDRIKSE	
EGSE Operator			
SVM Support Engineer			
Cryo Support Engineer			
HIFI Instrument Support Engineer			
PACS Instrument Support Engineer			
Spire Instrument Support Engineer			
PA Responsible	Y	D. LAMONBY	D. Lamonby
Customer Representative			

Table 2: List of IST test attendants

Persons, other than test personal as mentioned in the test team organization and participants of the TRR, are allowed to observe the test at the discretion of the Test Director and Test Conductor.

5.2 Environmental

During all the phases of the test the HERSCHEL Satellite shall be maintained in a controlled environment in order to prevent degradation or contamination of the satellite equipment and surface, which could result in operational failures.

ESTEC site clean room will be used.

Ambient conditions shall comply with ISO14644-1 for cleanliness requirement.

The characteristic shall be:

- Temperature = $22C \pm 3C$
- Relative Humidity = 50 % +/- 10%
- Delta Pressure = above 0.6 mm H₂O
- Clean Conditions = Class 100 000

The following table defines the S/C conditions for each IST test sequence with respect to Cryostat He I/He II status, tilting angle and usage of the real battery.

IST 1 Part 1 Warm preferred

Chapter of IST Spec Issue 4		Instr. Mode	Real Battery required	Satellite X- Axis tilting	Ambient or cool down (deviating from IST Spec !!!)	He I HTT venting >20mg/sec	He II HTT venting >20mg/sec
		3 shift	4 shift	5 shift	6 shift	7 shift	8 shift
5.8.2	Launch phase, separation and post separation						
5.8.2.3	Initial configuration	OFF	Y	n.a	Preferred	alternative	alternative
5.8.2.4.2	Satellite power ON	OFF	Y	n.a	Preferred	alternative	alternative
5.8.2.4.4	Configuration for launch	OFF	Y	n.a	Preferred	alternative	alternative
5.8.2.4.5	Launch	OFF	Y	n.a	Preferred	alternative	alternative
5.8.2.4.6	Separation	OFF	Y	n.a	Preferred	alternative	alternative
5.8.2.4.7	Post separation	OFF	Y	n.a	Preferred	alternative	alternative
5.8.2.4.8	Initial check out in SAM mode	OFF	Y	n.a	Preferred	alternative	alternative
5.8.2.4.9	CDMS transition to NOM mode	OFF	Y	n.a	Preferred	alternative	alternative
5.8.2.4.10	Orbit Control Manoeuvre	OFF	Y	n.a	Preferred	alternative	alternative
5.8.2.4.11	End of the sequence	OFF	Y	n.a	Preferred	alternative	alternative
5.8.3	Satellite Commissioning						
5.8.3.3	Test start configuration	OFF	N	n.a	Preferred	alternative	alternative
5.8.3.4	TTC commissioning	OFF	N	n.a	Preferred	alternative	alternative
5.8.3.5	CDMS commissioning	OFF	N	n.a	Preferred	alternative	alternative
	TCS commissioning	OFF	N	n.a	Preferred	alternative	alternative
5.8.3.7	PCS commissioning	OFF	N	n.a	Preferred	alternative	alternative
5.8.3.10	SREM commissioning	OFF	N	n.a	Preferred	alternative	alternative
5.8.3.11	TCS commissioning	OFF	N	n.a	Preferred	alternative	alternative
5.8.3.12	Telescope decontamination	OFF	N	n.a	Preferred	alternative	alternative
5.8.3.13	Cryo Cover opening	OFF	N	n.a	Preferred	alternative	alternative
5.8.3.14	Test end	OFF	N	n.a	Preferred	alternative	alternative
5.8.3.9	ACMS commissioning						
5.8.3.9.1	AAD, SAS, CRS, STR, GYR, RCS unit check	OFF	N	n.a	Preferred	alternative	alternative
5.8.3.9.2	RWLs health check	OFF	N	n.a	Preferred	alternative	alternative
5.8.3.9.3	STR functional verification	OFF	N	n.a	Preferred	alternative	alternative
5.8.3.9.4	ACC health check	OFF	N	n.a	Preferred	alternative	alternative
5.8.3.9.5	ACMS dynamic verification	OFF	N	n.a	Preferred	alternative	alternative
5.8.5	Mode transitions						
5.8.5.3	Test start configuration	OFF	N	n.a	Preferred	alternative	alternative
5.8.5.4	Launch to Launch	OFF	N	n.a	Preferred	alternative	alternative
5.8.5.5	Launch to SAM	OFF	N	n.a	Preferred	alternative	alternative
5.8.5.6	SAM to SAM	OFF	N	n.a	Preferred	alternative	alternative
5.8.5.7	SAM to NOM	OFF	N	n.a	Preferred	alternative	alternative
5.8.10	Launch clean run	OFF	Y	n.a	Preferred	alternative	alternative
5.8.11	Launch sequence robustness						
5.8.11.3.2	Satellite power on	OFF	N	n.a	Preferred	alternative	alternative
5.8.11.3.4	Configuration for launch (status)	OFF	N	n.a	Preferred	alternative	alternative
5.8.11.3.5	Configuration for launch	OFF	N	n.a	Preferred	alternative	alternative
5.8.11.3.6	Separation	OFF	N	n.a	Preferred	alternative	alternative
5.8.11.3.7	S/C acquisition	OFF	N	n.a	Preferred	alternative	alternative
5.8.11.3.8	Initial checkout in SAM mode	OFF	N	n.a	Preferred	alternative	alternative
5.8.11.3.9	Transition to NOM mode	OFF	N	n.a	Preferred	alternative	alternative
5.8.11.3.10	Orbit control manoeuvre	OFF	N	n.a	Preferred	alternative	alternative

IST 1 Part 2 He I or He II						
Chapter of IST Spec Issue 4	Instr. Mode	Real Battery required	Satellite X- Axis tilting	Ambient or cool down (deviating from IST Spec !!!)	He I HTT venting >20mg/sec	He II HTT venting >20mg/sec
5.8.5	Mode transitions					
5.8.5.8	NOM to NOM	PAC S spectro SPIRE STBY HIFI STBY	N	0.23	alternative	Preferred
5.8.5.9	NOM to EAM	PAC S STBY SPIRE STBY HIFI STBY	N	0.23	alternative	Preferred
5.8.5.10	EAM to EAM	PAC S STBY SPIRE STBY-> Photo->STBY HIFI STBY	N	0.23	alternative	Preferred
5.8.5.11	EAM to NOM	PAC S STBY SPIRE STBY-> Photo	N	0.23	alternative	Preferred
5.8.5.12	NOM to SM	PAC S STBY->OFF SPIRE Photo->OFF HIFI STBY->OFF	N	0.23	alternative	Preferred
5.8.5.13	SM to SM	OFF	N	0.23	alternative	Preferred
5.8.5.14	SM to SAM	OFF	N	0.23	alternative	Preferred
5.8.5.17	EAM to SAM (needs new SAM to NOM and NOM to EAM)	PAC S STBY SPIRE STBY HIFI Science -> STBY	N	0.23	alternative	Preferred
5.8.5.18	NOM to SAM (needs new SAM to NOM)	PAC S Burst-> STBY SPIRE STBY	N	0.23	alternative	Preferred
5.8.5.19	Test end	OFF	N	0.23	alternative	Preferred
5.8.6	S/C reconfiguration					
5.8.6.2	Test start configuration	PAC S STBY SPIRE STBY HIFI STBY	N	0.23	alternative	Preferred
5.8.6.3	CDMS level 3a	PAC S STBY SPIRE STBY HIFI Prime-	N	0.23	alternative	Preferred
5.8.6.4	CDMS level 3b	PAC S STBY SPIRE STBY HIFI STBY	N	0.23	alternative	Preferred
5.8.6.5	ACMS level 4	PAC S Prime->OFF SPIRE STBY->OFF HIFI STBY->OFF	N	0.23	alternative	Preferred
5.8.6.6	ACMS recovery from Survival Mode (ACMS SASM to SAM)	OFF	N	0.23	alternative	Preferred
5.8.6.7	CDMS level 4	PAC S Prime->OFF SPIRE STBY->OFF HIFI STBY->OFF	N	0.23	alternative	Preferred
5.8.6.8	Test end	OFF	N	0.23	alternative	Preferred
5.8.12	NOM mode robustness					
5.8.12.3.1	Initial State	PAC S STBY SPIRE Photo HIFI STBY	N	0.23	alternative	Preferred
5.8.12.3.2	CDMS PM 1553 BC failure simulation	PAC S STBY SPIRE Photo-> STBY	N	0.23	alternative	Preferred
5.8.12.3.3	CDMS PM 1553 BC failure recovery	PAC S Photo SPIRE STBY HIFI STBY	N	0.23	alternative	Preferred
5.8.12.3.4	Initial state second test	PAC S Photo SPIRE STBY HIFI STBY	N	0.23	alternative	Preferred
5.8.12.3.5	ACMS 1553 RT failure simulation	PAC S Photo -> STBY SPIRE STBY	N	0.23	alternative	Preferred
5.8.12.3.6	ACMS 1553 RT failure recovery	PAC S STBY->OFF SPIRE STBY->OFF HIFI STBY->OFF	N	0.23	alternative	Preferred
5.8.13	Test of Instrument FDIR OBCP					
5.8.13.4	SPIRE FDIR OBCP	SPIRE	N	0.23	alternative	Preferred
5.8.13.5	PACS FDIR OBCP	PACS	N	0.23	alternative	Preferred
5.8.13.6	HIFI FDIR OBCP	HIFI	N	0.23	alternative	Preferred
5.9	DEGRADED CASES					
5.9.1	S/C ability to be operated in degraded modes				alternative	Preferred

IST 1 Part 3 He II only						
Chapter of IST Spec Issue 4	Instr. Mode	Real Battery required	Satellite X- Axis tilting	Ambient or cool down (deviating from IST Spec !!!)	He I HTT venting >20mg/sec	He II HTT venting >20mg/sec
Satellite Commissioning						
CCU (cryostat) commissioning	OFF	N	23			Required
Instruments commissioning and performance verification						
Test start (restart) configuration	OFF	N	23			Required
SPIRE commissioning test	Spire	N	23 > 90			Required
PACS commissioning test	PACS	N	23			Required
HIFI commissioning test	HIFI	N	0-23			Required
SPIRE and PACS parallel mode	SPIRE/PACS	N	23			Required
Test end or interruption	OFF	N				Required
CDMS management						
General Sequence (Integration with RMS DTCP number 2)	PACS Prime STBY → Burst → X SPIRE STBY HIFI STBY	N	0-23		alternatively if MTL is compatible with instrument operations	Preferred
MTL management	PACS Prime STBY → Burst → X SPIRE STBY HIFI STBY	N	0-23		alternatively if MTL is compatible with instrument operations	Preferred
OBCP management	PACS Prime STBY → Burst → X SPIRE STBY HIFI STBY	N	0-23		alternatively if MTL is compatible with instrument operations	Preferred
SSMM management	PACS Prime STBY → Burst → X SPIRE STBY HIFI STBY	N	0-23		alternatively if MTL is compatible with instrument operations	Preferred
FDIR level 1 & 2	PACS Prime STBY → Burst → X SPIRE STBY HIFI STBY	N	0-23		alternatively if MTL is compatible with instrument operations	Preferred
OBT management	PACS Prime STBY → Burst → X SPIRE STBY HIFI STBY	N	0-23		alternatively if MTL is compatible with instrument operations	Preferred
DTCP worst case scenario						
	PACS (Burst) SPIRE STBY HIFI Prime	N	0-23		TBC	Preferred
REFERENCE Mission Scenario						
Test start configuration		Y				Required
Test steps		Y				Required
HIFI OD	HIFI OD	Y	0-23			Required
PACS OD	PACS OD	Y	0-23			Required
SPIRE OD	SPIRE OD	Y	0-23			Required
Test end		Y				Required

Table 3: S/C conditions for each IST test sequence

5.3 General Precautions and Safety

5.3.1 General Safety Requirements, Precautions

Special condition and hazards

The following Operational restrictions shall be carefully taken into account:

1. Before any test article modification the relevant power sources shall be switched OFF
2. Protective caps shall be installed on each harness or unit connector when these are not linked to their equipment
3. All the test data shall be recorded
4. Before starting the test sequence, care must be taken in verifying that all hardware links are correctly connected.
5. to avoid possible damages, no signal shall be applied in no powered units, except where otherwise specified
6. During testing the step by step procedure shall be followed. Changes will be possible and will be managed by a Procedure Variation Sheet approved by the AIV and PA.
7. In case of any failure, the activities shall be stopped until troubleshooting plan is generated and approved.
8. In case of non-conformance, the procedure addressed in [AD 2.1.2.b] shall be applied.
9. The time of usage (ON/OFF cycles and ON duration) of each limited life equipment (FPGAs', etc?) shall be noted and recorded by the QA.
10. No stimulus has to be applied to any CRS switched-OFF
11. The EPC cannot be switched-ON for more than 5 minutes without any TWT turned-ON.
12. Care must be exercised when working around the S/C; in particular, if real IMU(s) or CRS rate sensors are involved, which may register any mechanical vibration affecting the responses of the ACC and/or invalidating the overall test results.
13. In case of AC failure, when the AC power will be again available, preliminary checks will be performed to verify that no damage has be caused to EGSE, SLE and S/L. The test conductor can decide to restart or to continue the test depending on the point where the failure happened.
14. Considering the SVM NCR affecting the XPND FM4, the transponder will be continuously flushed with Nitrogen during the tests.
15. Due to the use of liquid Helium during the Herschel mechanical test campaign, particular safety precautions need to be taken. The cryostat operations which require handling of liquid Helium are described in a dedicated procedure.
16. It shall be ensured that, for the beginning of each IST_START, the BDR's have been switched offi in order that skin plug reconfiguration can be carried out safely in presence of the flight battery. Note : During IST End the power down sequence, commands to turn the BDR's off (to isolate the battery)are issued via the CDMU. If it is suspected for any reason the battery has not been isolated by

switching the BDR's off then the stand alone procedure "BDR Isolation" from HP-2-ASED-TP-0215 shall be executed, startup from the power down state.

17. The maximum continuous battery discharge limit of 36 A shall be respected at all times.

5.3.1.1 Instrument specific safety requirements and precautions

HIFI

LOU being at ambient temperature, IMT objectives on HIFI will be limited. Specifically, the LO power should be limited and higher frequency channel should not used (IID-B). The bias range to the mixers and electromagnets should also be restricted

PACS

Whenever PACS FPU is at HEII conditions:

Prior to any PACS instrument switch-on within this procedure, the FDIR mechanisms as described in "PACS Failure Detection Isolation and Recovery"(PACS-ME-GP-002, Issue 1.2) must be in place and have to be up and running on the CDMU. This shall remain activate during all modes of the PACS instrument, except the off mode.

5.3.2 ESD constraints

- The spacecraft must be grounded
- All connectors have to be covered with ESD dust caps when not mated
- All AIT personnel have to wear antistatic shoes and clothes
- The clean room floor around and under the item under test shall be covered with an antistatic carpet, which is grounded to facility ground.

5.3.3 Grounding Configuration

A distributed single point grounding (DSPG) approach is used between the facility GSE and the satellite for electrical integration and performance tests.

Instrument signal ground isolation to the EGSE data processing electronics will be ensured.

5.3.5 Special QA Requirements

The QA/PA representative shall be present during all test activities. All documentation shall be inspected and approved before start and end of each test activity. The responsible PA engineer shall ensure that all 'as run' procedures have all the relevant information correctly recorded.

5.4 GSE

Test Equipment List					
Item	Manuf.	Model No.	SN No.	Invent No.	Next Calib.

5.4.1 MGSE

No additional mechanical GSE is required to perform the test described in this test procedure.

5.4.2 CVSE

The set-up of the CVSE will be performed according to HP-2-ASED-0095

Helium operations will be performed according

The cool down and filling procedure: HP-2-ASED-PR-0082 for Helium I

The Helium II top-up procedure: HP-2-ASED-TP-0083 for Helium II

The cover cooling procedure: HP-2-ASED-PR-0048 for special instrument stimulation

A list of the CVSE hardware which might be used is given below.

Qty.	Designation/Manufacturer	Provided by	Drawing/Ident. NR:	Calibr. Date
2	LHe Service Vacuum Pumping Unit I	BOCE	CI No. 142 310-01	
2	LHe Service Vacuum Pumping Unit II	BOCE	CI No. 142 310-02	
1	Main High Vacuum Pumping Unit	BOCE	CI No. 142 310-03	
1	Mobile High Vacuum Pumping Unit	BOCE	CI No. 142 310-03	
3	Molecular Turbo pumps	BOCE	CI No. 142 310-03	
1	Laboratory Vacuum Pump in safety unit	BOCE	CI No. 142 310-04	
1	Laboratory Vacuum Pump in scaffolding	BOCE	CI No. 142 310-04	
1	Laboratory Vacuum Pump in scaffolding (Ex proof.)	BOCE	CI No. 142 310-05	
2	CVSE Monitoring Rack	BOCE	CI No. 142 310-06	
2	Leak Detector Spectron 5000	BOCE	CI No. 142 310-07	
3	He I transfer lines (Y0211/Y0221/Y0231)	DeMaCo	CI No. 142 310-08	
3	He II transfer lines (Y0201-1, -2, -3)	De MaCo	CI No. 142 310-08	
2	Dewar to dewar transfer lines (Y0241 - Y0242)	De MaCo	CI No. 142 310-08	
1	Cover flushing line inlet (L1 + L2, separable)	AAE	CI No. 155 210	
1	Cover flushing line outlet (L3 + L4, separable)	AAE	CI No. 155 210	
1	Heater unit for cover inlet line	DeMaCo		
3	Venting line (Y0601/Y0602/Y0601-3)	DeMaCo	CI No. 142 310-09	
2	Pumping lines (Y0611-1 / Y0611-2)	DeMaCo	CI No. 142 310-09	
Set	Bake out lines (Y0633)	ASED	CI No. 142 310-09	
Set	HiVac Pumping lines (Y0673)	ASED	CI No. 142 310-09	

Qty.	Designation/Manufacturer	Provided by	Drawing/Ident. NR:	Calibr. Date
Set	Helium I lines (Y0612)	ASED	CI No. 142 310-09	
Set	Helium II Pumping lines (Y0602)	ASED	CI No. 142 310-09	
2	Scaffolding for He lines	ASED	CI No. 142 310-10	
10	450 l LHe Dewars type HDS 450 -EIPS	Linde		
1	Spiro pump DryTel 1025	ASED		
2	Liquid level sensor	ASED		
2	Helium depth indicator	ASED		
3	Pressure indicator (Keller)	ASED		
1	Laminar flow meter (0-10 mg/s / 0-70 mg/s)	ASED		
1	Standard flow meter (0-5 g/s)	ASED		
2	Gas flow counter	ASED		
Set	Vacuum houses	ASED		
Set	Miscellaneous vacuum seals	ASED		
Set	Vacuum parts	ASED		
Set	Special tools	ASED		
1	Scale	ASED		
1	Pressure Control unit (0-1500 mbar, Ziegler)	ASED		
Set	Plastic pipes (Diameter 20-40 mm, different length)	ASED		
1	HEXA He heating unit	CryoVac	S-21-7021	
Set	Stands	ASED		
Set	Trip tray	ASED		
Set	Special adapters	ASED		
1	Gate valve DN160	ASED		
1	He II bypass valve	ASED		

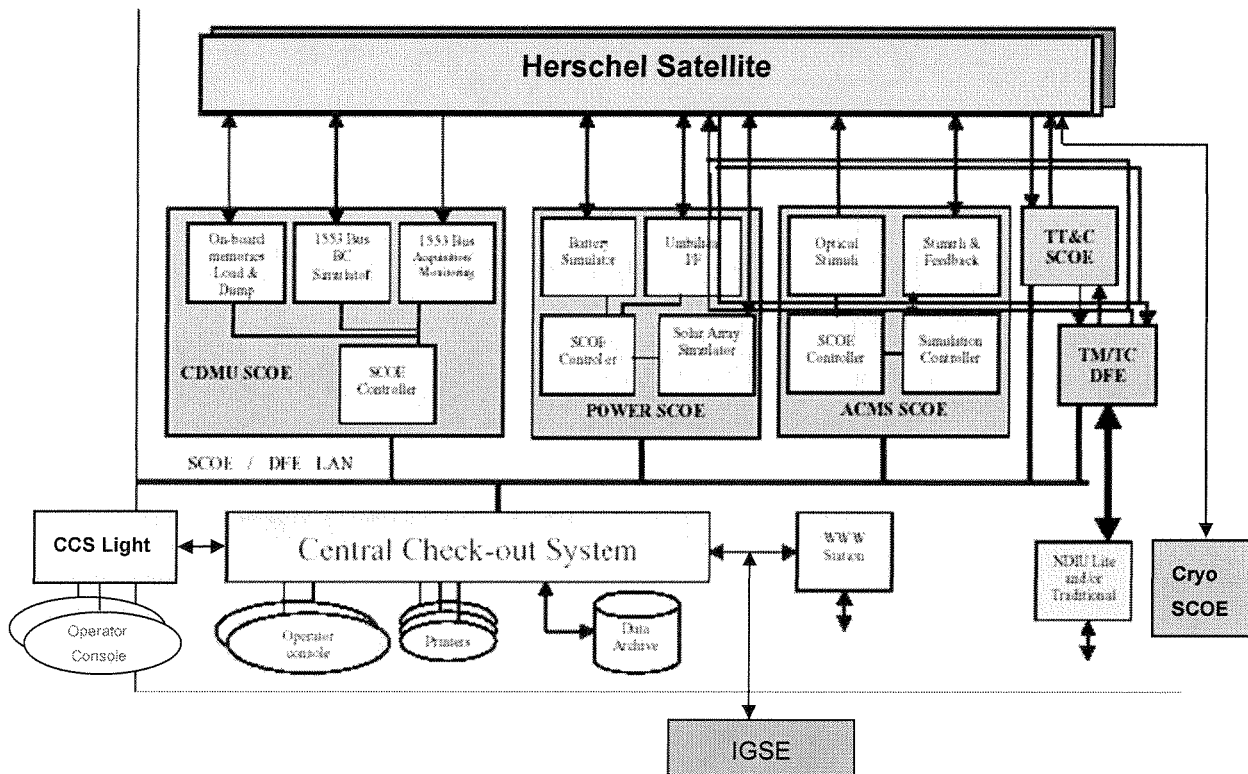


5.4.3 EGSE

5.4.3.1 EGSE Hardware Configuration

The EGSE configuration, when completed, is shown in the figure below

S/S	Unit	Configuration			SCOE simulated equipments	Remarks
		<i>Herschel</i>				
EGSE	CCS	1				
	CCS Light	1				
	TM/TC DFE	1				
	CDMU SCOE	1				
	ACMS SCOE	1				
	TT&C SCOE	1				
	POWER SCOE	1				
	Cryo SCOE					
	NDIU					



The Herschel/ EGSE will be built with the following equipment:

- Central Check Out System (CCS)

- Central Check Out System Light (CCS Lite)
- The Power Control Subsystem SCOE (Power SCOE)
- The Telemetry, Tracking and Command SCOE (TT&C SCOE)
- The Telemetry and Telecommand Data Front End Equipment (TM/TC DFE)
- The Attitude and Control Measurement Subsystem SCOE (ACMS SCOE)
- The Central Data Management Unit SCOE (CDMU SCOE)
- The Cryo SCOE which performs four general tasks
 - Control and monitoring the Cryostat Instrumentation either directly by the Cryo SCOE, i.e. locally or initiated by the CCS, i.e. remotely.
 - Substitution of the real CCU if the CCU is not available
 - Monitoring of several parameters of the Cryo Vacuum Support Equipment (CVSE).
 - Simulate the launcher interface by providing "dry loop commands" to be sent to the CCU.

All the above items are interconnected through an Ethernet Local Area Network (LAN) used to exchange both data and command & control information.

The CCS Lite will be used and configured in order to have a hot TM/TC backup in case of main CCS crashes.

The NDIU will be configured to put ESOC in listening mode.

5.4.3.2 EGSE User Software

Most of the Test Software will be developed on the CCS, based on SCOS 2k, and will interface the HPSDB. It will consist mainly of:

- Test Sequences
- Synoptic Displays
- Data Evaluation and Test Analysis Software
- Simulation Software Master sequences (mainly for ACMS S/S).

On the contrary, on the SCOE's/DFE only a very peculiar type of software will be developed; it will mainly consist of:

- Configuration/set-up files for SCOE's/DFE instrumentation
- Sequence of commands
- Simulation files for Dynamic control and ACMS Sensors simulation
- Telemetry Simulation file for Missing Unit (Experiments).

A complete list of EGSE SW version (particularly CCS and HPSDB) shall be provided before start of test and attached to this procedure.

5.4.4 OGSE

No OGSE is required to carry out the test activities of the IST.

5.4.5 Special Equipment

5.4.5.1 Cooling device

The HIFI units when equipped with MLI (WEV, WEH, HRV, HRH) exceed their maximum operating temperature, WEV 35,5°C vs 30°C, HRV 40,1°C vs 40°C, WEH 35,3°C vs 30°C, HRH 41,9°C vs 40°C.

Therefore the implementation of a cooling system for the two HIFI panels (forced convection directed in these areas) is mandatory.

All the units stay in their operating temperature range with comfortable margins, except:

- GYRO baseplate 63,5°C vs 55°C, due to use of flight thermal control parameters, covered by RFD HP-300000-AI-RD-0011 issue 03.
- CRS1 and CRS2 around 50°C, due to use of flight thermal control parameters, covered by RFD H-P-300000-AI-RD-0014 issue 03.

6 Verification Requirements and Test Criteria

PASS/FAIL CRITERIA

At each test stage completion, the test success is determined comparing the results obtained against the expected values.

If the compliance between obtained and expected values has been met, and authorisation to proceed with the next stage of the test is given, then the actual test stage must be considered satisfactory completed.

The success of the overall testing activities is determined from the satisfactory completion of all test stages.

Successful criteria to be satisfied in each test stage shall be:

- Test conditions according to specification requirement;
- Complete verification of the requirement aspects according to the test specifications
- Fulfilment of test results with respect to required data;
- Verification that all the TM parameters used to monitor the SAT do not exceed the limit thresholds loaded in the HPSDB (OOL display);
- Verification that the TM (5,2), TM (5,4) and TM (1,8) received event reports are only those ones expected to fulfil the pass test criteria.

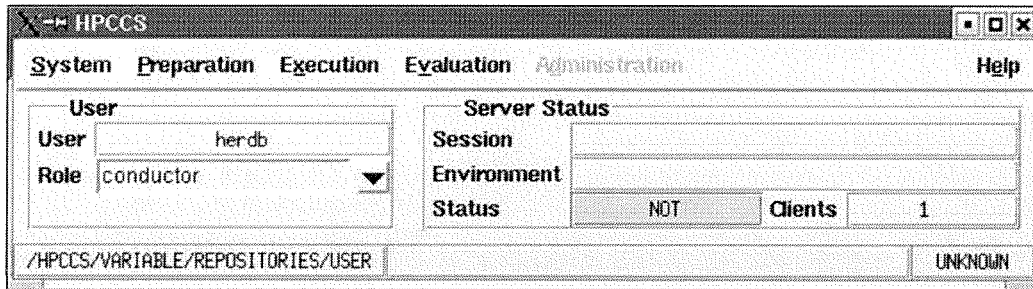
7 IST Test

7.1 HPCCS Configuration for IST Test

7.1.1 Apply Tag on test files

The **EGSE operator** has to perform the following steps **before starting IST test**:

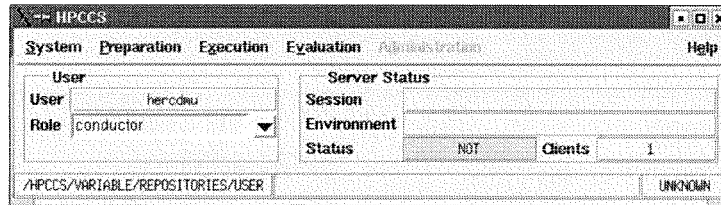
1. On a Workstation login as **herdb** (password **heratest**), being this user dedicated to DB operations for Herschel FM Checkout System, and open a shell (xterm).
2. Logged as herdb, run Startmmi and the following window will occur



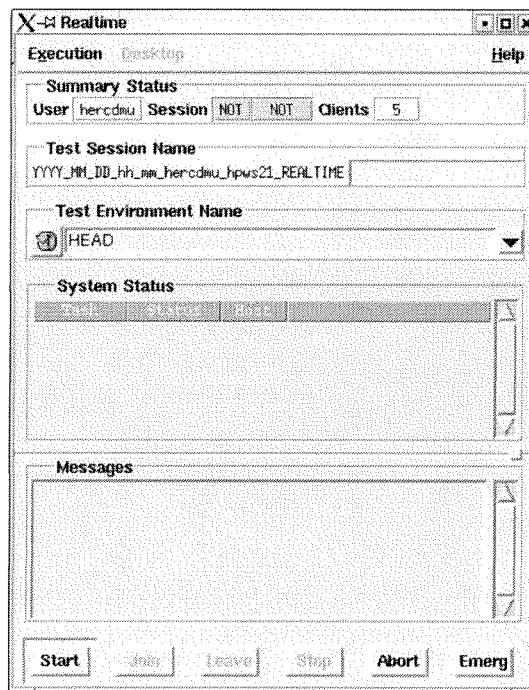
3. Logged as herdb, in HPCCS window, select menu "**Preparation → Prepare**"
4. Logged as herdb, In **PREP** window, select menu "**Preparation → Discard all**"
5. Logged as herdb, In **Confirm Discard** window, click the button **Discard**
6. Logged as herdb, in **PREP** window, select menu "**Preparation → Update**"
7. Logged as herdb, in **Check out environment** window, click the button **Check out** and then **Close**
8. Logged as herdb, in **PREP** window, select menu "**Tag → Apply**"
9. Logged as herdb, in the window **Apply Tag → New Tag**, insert TAG name
Currently, TAG name for IST has the format:
IST_x_PART_x_TP_xxxx_x_x_BEGIN_xxx
10. Logged as herdb, push **Apply → Apply**
11. Logged as herdb, confirm Tag Application Push Apply button
12. Logged as herdb, open a new **shell** window (xterm)
13. Logged as herdb, execute the command **update_tag**
14. Logged as herdb, insert the name of **TAG**
IST_x_PART_x_TP_xxxx_x_x_BEGIN_xxx
15. Logged as herdb, in **PREP** window, select menu "**Tag → Apply**"
16. Logged as herdb, in **Apply tag** window, select in the list the TAG
IST_x_PART_x_TP_xxxx_x_x_BEGIN_xxx
17. Logged as herdb, push **Copy selected tag**
18. Logged as herdb, modify the TAG name with **IST_x_PART_x_TP_xxxx_x_x_END_xxx**
19. Logged as herdb, push **Apply → Apply**
20. Logged as herdb, confirm Tag Application Push Apply button

7.1.2 Start test session on HPCCS

Logged as **hercdmu** or **heracms** run "startmmi"



On **HPCCS** window, select menu "**Execution** → **Start**" in order to open the following window. In the "**Test Session Name**" field, insert an abbreviation describing which IST test will be performed and click the button "**Start**" to proceed.



Once the real time session initialized, the button "**Join**" is enabled and shall be clicked. Then configure desktop of different CCS stations through the menu "**Desktop**" and the following menus:

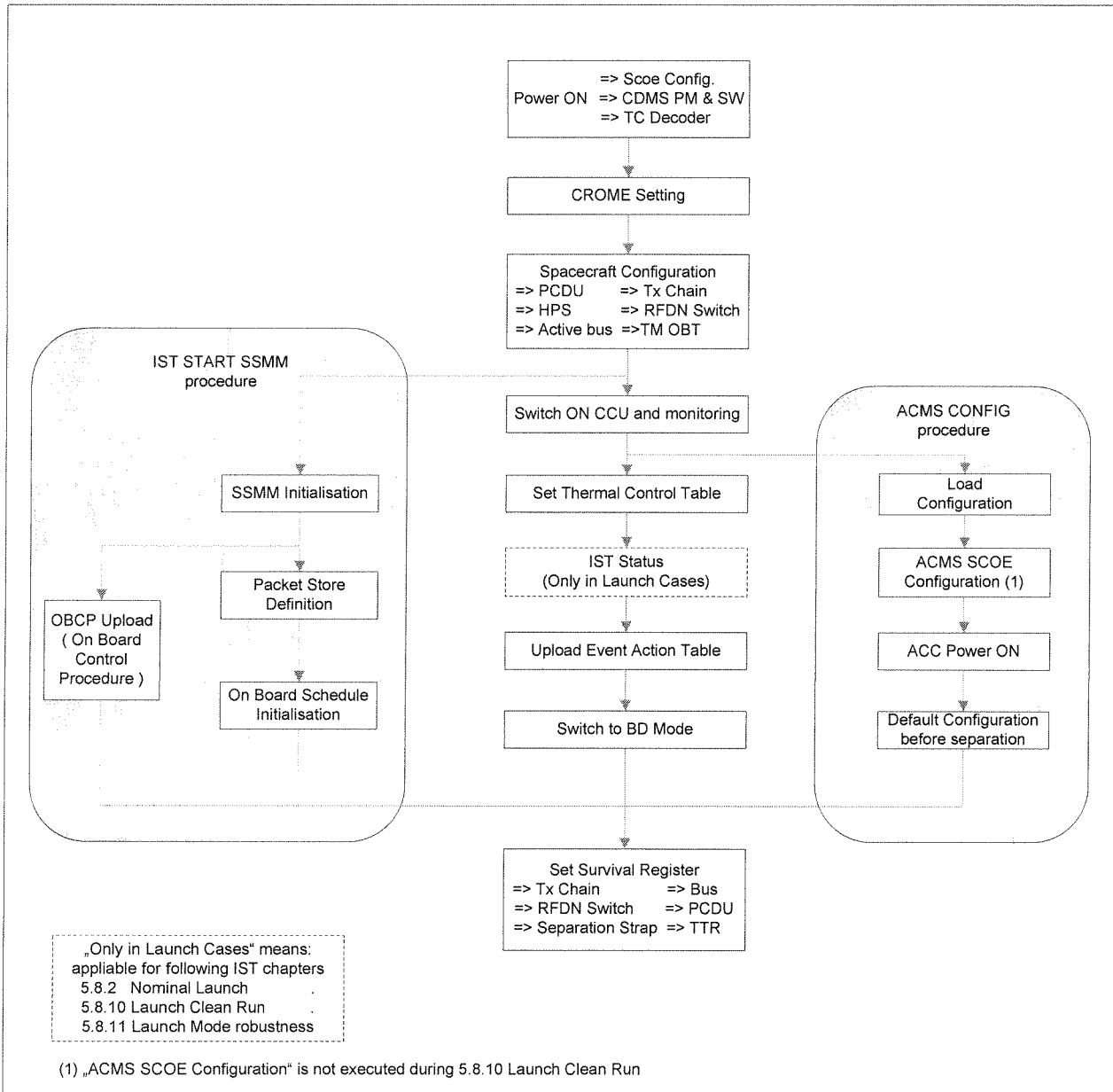
- Monitoring → Telemetry Desktop
- Monitoring → Telemetry Packet history
- Monitoring → Out of limit
- Monitoring → On Board Event History
- Test Sequences → Test Conductor Console
- Command → Telecommand History

7.2 IST START for Spacecraft configuration

7.2.1 Diagram Overview

The flow of the "IST START" sequence is depicted in the diagram below. To save time during the satellite power on, the SSMM initialising and the ACMS switch on is performed in parallel.

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Herschel Integrated Satellite Test Procedure: Leading Procedure

Herschel

7.2.2 IST Configuration Table

The Herschel Satellite configuration for each IST test case is listed in the table below.

SASLPS	Bat.	Crome	Sep. Strap	TTR	TM	TC	PM	SSMM	Bus	PCDU	HPS	TxChain	RFDN	CCU		ACMS				
SCOE	SCOE	PAP/CCS	SM	SM	OBT	Dec.	SW		SM	SM		SM	SM	ON	Mode	Config. File				
5.8.2 NOMINAL LAUNCH																				
SAS	Sim. Charged + Launch	PM A Nominal	Not Separated	B	A	A	A1	A 0-1-2 B 0-1-2	A	B	A	B	A	A	B	1&3	ABBB	A&B	2	IST_FN
5.8.3a ACMS Commissioning																				
SAS	Sim. Charged	PM A Nominal	Separated	B	A	B	A1	A 0-1-2 B 0-1-2	A	B	A	B	A	A	B	1&3	ABBB	A&B	1	IST_SCA1
5.8.3b S/C Commissioning																				
SAS	Sim. Charged	PM A Nominal	Separated	B	A	A	A1	A 0-1-2 B 0-1-2	A	B	A	B	A	A	B	1&3	ABBB	A&B	1	IST_MOD
5.8.4.5.1 SPIRE Commissioning																				
SAS	Sim. Charged	PM A Nominal	Separated	B	A	A	A1	A 1 B 1	B	A	A	B	A	A	B	1&3	ABBB	A&B	1	
5.8.4.5.2 SPIRE Spectrometer Complementary Test																				
SAS	Sim. Charged	PM B Nominal	Separated	A	B	B	B1	A 3 B 3	B	A	B	A	B	B	A	2&4	AABB	A&B	1	



Herschel Integrated Satellite Test Procedure: Leading Procedure

Herschel

SASLPS	Bat.	Crome	Sep. Strap	TTR	TM	TC	PM	SSMM	Bus	PCDU	HPS	TxChain	RFDN	CCU	ACMS
SCOE	SCOE	PAP/CCS	SM	SM	OBT	Dec.	SW		SM	SM		SM	SM	ON Mode	Config. File

5.8.4.6 PACS Commissioning																				
SAS	Sim. Charged	PM A Nominal	Separated	A	A	B	A1	A2 B2	B	A	B	A	B	B	A	2&4	AABB	A&B	1	
5.8.4.7 HIFI Commissioning																				
SAS	Sim. Charged	PM B Nominal	Separated	B	A	A	B1	A3 B3	A	B	A	B	A	A	B	1&3	ABBB	A&B	1	
5.8.4.8 Parallel Mode Commissioning																				
SAS	Sim. Charged	PM B Nominal	Separated	A	B	B	B1	A0 B0	A	B	B	A	B	B	A	2&4	AABB	A&B	1	
5.8.5 Mode Transition																				
SAS	Sim. Charged	PM A Nominal	Separated	B	A	A	A1	A1 B1	A	B	A	B	A	A	B	1&3	ABBB	A&B	2	IST_MOD
5.8.6 SC Reconfiguration																				
SAS	Sim. Charged	PM A Nominal	Separated	A	B	B	A1	A2 B2	B	A	B	A	B	B	A	2&4	AABB	A&B	1	IST_FD_B
5.8.7 CDMS Management																				
SAS	Sim. Charged	PM A Nominal	Separated	B	A	A	A2	A1 B1	A	B	A	B	A	A	B	1&3	ABBB	A&B	2	IST_CDMS
5.8.8 DTCP Worst Case Scenario																				
SAS	Sim. Charged	PM B Nominal	Separated	A	B	B	B2	A2 B2	B	A	B	A	B	B	A	2&4	AABB	A&B	2	IST_WCS

SASL PS Bat. SCOE Crome PAPICCS Sep. SM Strap SM TTR TTR TM OB T Dec. TC Dec. PM SW SSMM Bus SM PCDU SM HPS TxChain SM RFDN SM CCU ON Mode ACMS Config. File

5.8.9 RMS Reference Mission Scenario																				
SAS	Sim. Charged	PM A Nominal	Separated	B	A	A	A1	A 0-1-2 B 0	A	B	A	B	A	A	B	1&3	ABBB	A&B	1	IST_RMS
5.8.9 Launch Clean Run																				
LPS	REAL	PM A Nominal	Not Separated	B	A	A	A1	A 0-1-2 B 0-1-2	A	B	A	B	A	A	B	1&3	ABBB	A&B	2	IST_CLN
5.8.11 Launch Mode Robustness																				
SAS	Sim. Charged +Launch	PM A Nominal	Not Separated	B	A	A	A1	A 0 B 0	A	B	A	B	A	A	B	1&3	ABBB	A&B	2	IST_LSR
5.8.12 NOM Mode Robustness																				
SAS	Sim. Charged	PM A Nominal	Separated	A	B	B	A1	A 3 B 3	B	A	B	A	B	B	A	2&4	AABB	A&B	1	IST_NMR
5.8.13 Instrument FDIR																				
SAS	Sim. Charged	PM A Nominal	Separated	B	A	A	A2	A 1 B 1	A	B	A	B	A	A	B	1&3	ABBB	A&B	1	IST_CDMS

7.2.3 Initialisation

Step-No.	Initialisation-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
<u>TT&C SCOE initialisation</u>							
1	Verify that TT&C SCOE application SW is running Otherwise go on TTC SCOE or access remotely (command "startCMD ttcvnc" on shell window") and click "TTC SCOE Herschel" icon on TT&C SCOE desktop controller and wait for self test completion.					✓	
2	On TT& SCOE application, in window ":: CONF namespace" (that can be open by menu "windows/SCOE config"), select menu "Config/Load", load the file "Herschel.conf" then click "open" button.					✓	
<u>SPACECRAFT SKIN CONNECTORS CONFIGURATION</u>							
3	Verify that all the SCOE skin connectors cables are installed <ul style="list-style-type: none"> • Goto chapter 4.3 • Choose according to the IST Test case the related skin configuration table • Check the list and sign off (together with PA and Floor Manager). 					✓	

Test location: <i>ESTR</i>	Operator <i>S. EISLEY</i>	Product-Assurance: <i>SHOGG</i> <i>SDX</i>	Date: <i>30/4/08</i>	Time <i>03:36</i>
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Herschel Integrated Satellite Test Procedure: Leading Procedure

Herschel

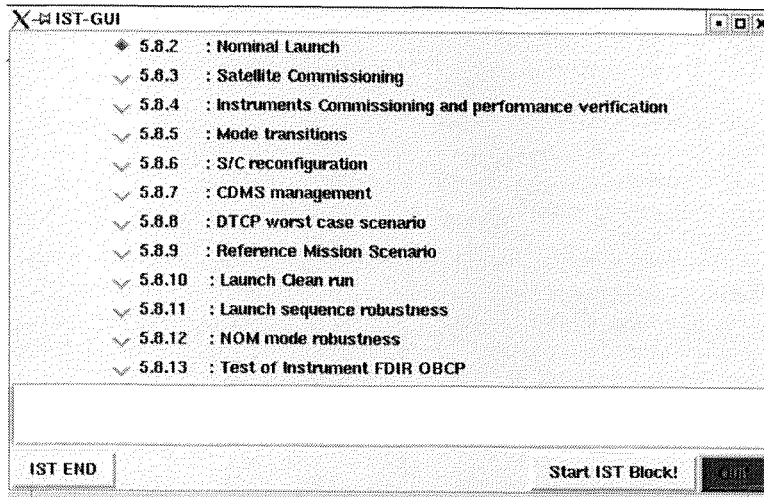
Step- No.	Initialisation-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
ACMS SCOE CHECK							
4 N/A for "Launch Clean Run"	Verify that the ACMS SCOE is ON and operational					✓	
5 N/A for "Launch Clean Run"	In the Clean Room, check on the ACMS SCOE that STR UCE Electrical Stimuli program on PC2 and PC3 are enabled (i.e. double click on "scroll lock" and check "01-02 & 01-03" that mouse pointer can be moved). Otherwise execute Annex D Operator Note 3					✓	

Test location: <i>ESTEL</i>	Operator <i>S. ELSLEY</i>	Product-Assurance: <i>B. HOGG</i> <i>EDH.</i>	Date: <i>30/4/08</i>	Time <i>03:36</i>
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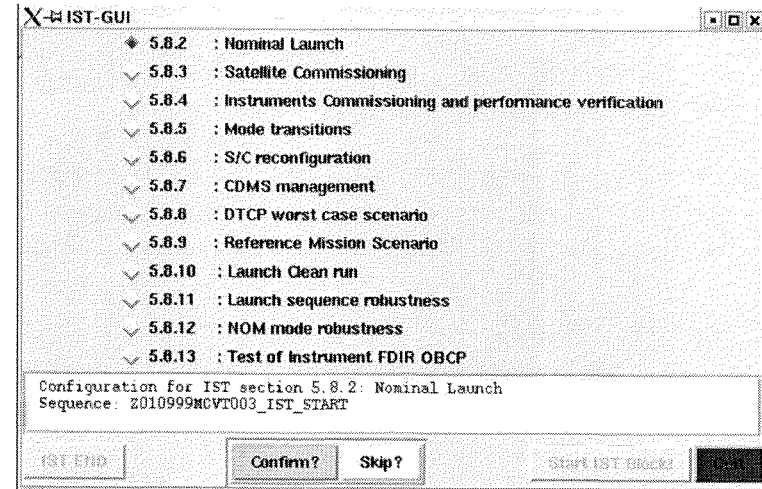
Doc. No: HP-2-ASED-TP-0134
 Issue: 4.0
 Date: 24.04.2008

7.2.4 IST Start Step by Step Procedure

At the CCS test sequence console call the sequence "Z010999MCVT201_IST_GUI " to start an IST test. When the Graphical User Interface (see Picture 1) occurs, select the appropriate test case (and note it down in this Test Procedure) followed by a click on the "Start IST Block".



Picture 1



Picture 2

Then configuring the spacecraft for the selected IST Test is proposed to be run or skipped (see Picture 2). If the button "Confirm" has been clicked, continue with step 1 of the following IST START step description. Otherwise pressing the button "Skip" will lead to chapter 7.2

Test location: <i>ESTEE</i>	Operator <i>S. ELSUM</i>	Product-Assurance: <i>BHOGE</i>	Date: <i>2014/08</i>	Time <i>03:38</i>
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Step-No.	IST_START-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
1	Z010999MCVT003_IST_START At the bottom of the window, the IST_START configuration panel displays all parameters applied during the IST_START. ⇒ Click the button "Continue" to proceed	To Check in Config. Table (Page 73)		CONTINUE		✓	

Configuration of "IST START"

Power SAS/LPS SCOE: SAS Bat. SCOE: Simulated PCDU: A HPS: A	CDMS TM OBT: A Bus: A PM: A1 PapCcs: PMAnominal Survival Register Bus: B Launch Straps: Not Separated PCDU: B TTR: B Tx Chain: B RFDN Switches Position: ABBB	Rx and Tx Chain Tx Chain (Xpnd, Tx, EPC, TWT): A TC decoder: A TM Rate: Medium (150Kbps) RFDN Switches in use: 1&3 SSMM Mass Memory: A0 and B0
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Continue?

IST_START Configuration Panel

Test location: <i>ESTEC</i>	Operator: <i>S. Euseby</i>	Product-Assurance: <i>R. Hogg</i>	Date: <i>30/4/08</i>	Time: <i>03:39</i>
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Step- No.	IST_START-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
2	<p>Z010999MCVT003_IST_START</p> <p>Note the execution diagram, resuming each configuration steps and check all parameters are set as previously (particularly if any modification has been done on configuration panel)</p> <p>"START Satellite HERSCHEL "IST_START"</p> <p>⇒ Choose "Yes" or "No"</p>	YES		YES		✓	
3	<p>Z010999MCVT097_ASDGEN_CRIT_PARS_CHECK</p> <p>This script will run during the whole session to monitor critical parameters.</p> <p>As soon as wrong value will be detected. A popup window will occur alerting the operator about incorrect TM checks</p> <p>⇒ Minimise this window by clicking the corresponding button (on corner top right, first button from left)</p>					✓	

Test location: <i>ESTR</i>	Operator <i>S. ELSLEY</i>	Product-Assurance: <i>R. HOGG</i>	Date: <i>30/4/08</i>	Time <i>03:40</i>
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Herschel Integrated Satellite Test Procedure: Leading Procedure

Herschel

Step-No.	IST_START-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
4	Z010999MCVT003_IST_START Reply to the prompt: "SPACECRAFT POWER_ON" ⇒ Click the button "Confirm" to proceed			CONFIRM		✓	
5	Z010999MCVT001_POWER_ON_HER_IST Set Battery ?????????? Set TCDecoder to ? Set PM_SW ?? Do you want to continue with the upper configuration: If these parameter values are in accordance with the IST Configuration Table (Page 73), ⇒ click the button "OK" to proceed	To Check in Config. Table (Page 73) Bat.SCOE TCDec. PM/SW		OK		✓	

Test location: <i>ESTR</i>	Operator <i>S. EISEN</i>	Product-Assurance: <i>B. HOGG</i>	Date: <i>30/4/07</i>	Time <i>03:40</i>
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Doc. No: HP-2-ASED-TP-0134
 Issue: 4.0
 Date: 24.04.2008

File: HP-2-ASED-TP-0134_Herschel_IST_Leading_Procedure_iss_4_0_24-04-08

Step-No.	IST_START-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
6	<p>Z010999MCVT001_POWER_ON_HER_IST A Popup window occurs asking to verify data reception on TM/TC Data Front End workstation: In window "System Status", check following panels</p> <ul style="list-style-type: none"> → TM chain / TM Acquisition synchronised and locked Status expected → View / TM Transfer Frame Monitor TM frame data should be received before few minutes <p>⇒ click the button "OK" to proceed</p>			OK		✓	
7	<p>Z010999MCVT001_POWER_ON_HER_IST A Popup Window occurs asking to start a new acquisition in Bus Monitor with name IST on the CDMU SCOE: - start a new acquisition by clicking "Menu Mode/Start new Acquisition" If an acquisition is already started, please stop and restart</p> <p>⇒ click the button "OK" to proceed</p> <p>After few minutes Data transfer should be visible on the Bus Monitor.</p>			OK	N/A for "Launch Clean Run" as the cables for CDMU BUS monitor are disconnected	✓	

Test location: <i>ESTR</i>	Operator <i>S. ELSLEY</i>	Product-Assurance: <i>B. HOGG</i>	Date: <i>30/4/08</i>	Time <i>03:49</i>
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Herschel Integrated Satellite Test Procedure: Leading Procedure

Herschel

Step-No.	IST_START-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
8	<p>D102159SCVT001_GET_ALARM_STATUS Check that both DOD ext1 and ext2 are "Not Asserted". Otherwise execute Annex D – Operator Note 8</p> <p>⇒ Click the button "End TS!" to proceed</p>			END TS	NO DOD	✓	
9	<p>D102159SCVT001_GET_ALARM_STATUS Check that both DOD ext1 and ext2 are "Not Asserted". Otherwise execute Annex D – Operator Note 8</p> <p>⇒ Click the button "End TS!" to proceed</p>			END TS	NO DOD	✓	
9b when BCR OCP are detected ACTIVE	<p>Z010999MCVT001_POWER_ON_HER_IST</p> <p>Temporary workaround until SPR-107 / NCR-3312 are solved</p> <p>⇒ click the button "YES" to proceed the workaround</p> <p>See SPR 107 / NCR 3312</p>	YES		YES	<p>NCR 3492: TTRMMemCorEr_A 1 := 0 SPR 244: OutOfLimit for SA_Pan?_Temp_N/R (WMB0?569) SPR 284: WARNING about missing TC SPR 285: many TCs not acknowleged For launch clean run with real Battery fully charged, parameters BCR1, BCR2 are expected active.</p>	✓	

Test location: <i>ESTEC</i>	Operator: <i>S. ELSLEY</i>	Product-Assurance: <i>BHOGE B.M.</i>	Date: <i>30/4/08</i>	Time: <i>03:54</i>
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Herschel Integrated Satellite Test Procedure: Leading Procedure

Herschel

Step-No.	IST_START-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
10	D102159SCVT032TIMESYNCRO Wait until the synchronization between CDMS On-board Time and CCS is finished ⇒ Click the button "End TS!" to proceed			END TS	TM parameter ZE00999 out of limits and back in limits again at synchronisation to be expected.	✓	
11	Z010999MCVT001_POWER_ON_HER_IST ⇒ Click the button "End TS!" to proceed			END TS		✓	
12	D102159SCVT001_GET_ALARM_STATUS Check that both DOD ext1 and ext2 are "Not Asserted". Otherwise execute Annex D – Operator Note 8 ⇒ Click the button "End TS!" to proceed			END TS	NO DOD	✓	
13	Z010999MCVT003_IST_START Reply to the prompt: "CDMS Configuration:" "CROME settings PM?????" If the CROME settings is in accordance with the CROME PAP/CCS of IST Configuration Table (Page73), ⇒ Click the button "Confirm" to proceed	To Check in Config. Table (Page 73) CROME PAP/CCS		CONFIRM		✓	

Test location: <i>ESTEC</i>	Operator <i>S. Eisen</i>	Product-Assurance: <i>B. HOGG</i>	Date: <i>30/4/08</i>	Time <i>04:30</i>
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Step-No.	IST_START-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
14	D102159SCVT176_WRITE_CROME ⇒ Click the button "End TS!" to proceed			END TS		✓	
15	Z010999MCVT003_IST_START Reply to the prompt: "CDMS Configuration:" "Set configuration" "Bus ? PCDU ? HPS ? TxChain ? RFDN ???" "TM-OBT ? TMrate Medium (150Kbps)" If all these parameter value are in accordance with the IST Configuration Table (Page 73), ⇒ Click the button "Confirm" to proceed	To Check in Config. Table (Page 73) BUS PCDU HPS TxCh. RFDN TM-Obt		CONFIRM	Please note that the TMrate Medium (150 Kbps) is not specified in IST Config. Table on page 73.	✓	
16 Only if Encoder B is req.	D102159SCVT104_ENCODER_SELECT ⇒ Click the button "End TS!" to proceed				SPR 286: TM check needs repeat N/A		

Test location: ESTEC	Operator: S. ELSLEY	Product-Assurance: B HOGG	Date: 30/04/08	Time: 04:04
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Step-No.	IST_START-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
17	D102159SCVT174_IST_REDUNDANT_CONF ⇒ Click the button "End TS!" to proceed			ENDTS		✓	
18	Z010999MCVT003_IST_START Reply to the prompt: "SSMM Configuration" ?????????? ⇒ Click the button "Confirm" to proceed	To Check in Config. Table (Page 73) SSMM		CONFIRM		✓	
19	Z010999MCVT005_IST_START_SSMM Start initialising with Steps 1-2 of IST START SSMM Procedure (see Page 96). Then continue with the next test step of IST_START. NOTE: After completion of Mass Memory initialisation (roughly 12 minutes per bank), i.e. when ALL affected mass memory banks are ON, continue with step 3 of IST START SSMM Procedure (see Page 96).				In Launch cases, IST_START_SSMM shall be completely performed before next step	✓	

Test location: <i>ESTEL</i>	Operator <i>S. EISEN</i>	Product-Assurance: <i>J. HOGG</i>	Date: <i>30/4/08</i>	Time <i>04:04</i>
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Step-No.	IST_START-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
20	<p>Z010999MCVT003_IST_START</p> <p>Reply to the prompt: "SWITCH ON CCU ??? and" "START MONITORING in MODE ?"</p> <p>⇒ Click the button "Confirm" to proceed</p> <p>In case that TM checks for CCU valves are failed, see Annex D Operator note 11 and perform actions if required.</p>	To Check in Config. Table (Page 73) CCU On Mode		CONFIRM	<p>NCR-3119: Alarms for TMs</p> <ul style="list-style-type: none"> o KM130300 o KM120300 o KM110300 <p>fails status consistency check during CCU A on</p> <p>And for TMs</p> <ul style="list-style-type: none"> o KM130301 o KM120301 o KM110301 <p>fails status consistency check</p> <p>The following is expected until TC DCT53170 is sent:</p> <ul style="list-style-type: none"> o Events 28417 CCU A monitoring discarded o Events 28418 CCU B monitoring discarded 	✓	

Test location: <i>ESTC</i>	Operator: <i>J. KUSCH</i>	Product-Assurance: <i>B. MOGG BDI</i>	Date: <i>30/4/08</i>	Time: <i>04:05</i>
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Step-No.	IST_START-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
21	<p>Z010999MCVT003_IST_START</p> <p>Reply to the prompt: "Record CCU Temp In Background"</p> <p>⇒ Click the button "Confirm" to proceed</p>			CONFIRM	Minimise Log file after starting	✓	
22 applicable only in launch (IST spec. 5.8.2 5.8.10 5.8.11)	<p>Z010999MCVT003_IST_START</p> <p>Reply to the prompt : "STATUS SPACECRAFT and EGSE (Power ON)"</p> <p>⇒ Click the button "Confirm" to proceed</p> <p>Reply to the next prompt: "Do you want to stop and notice each failure?"</p> <p>⇒ Choose "YES" to proceed</p>				N/A		

Test location: <i>ESTEC</i>	Operator <i>S. EISEN</i>	Product-Assurance: <i>B. HOOG</i> <i>18/01</i>	Date: <i>30/4/08</i>	Time <i>04:14</i>
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Herschel Integrated Satellite Test Procedure: Leading Procedure

Herschel

Step-No.	IST_START-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
23 applicable only in launch (IST spec. 5.8.2 5.8.10 5.8.11)	Z010999MCVT1533_IST_STATUS Check the Satellite status displayed and ⇒ Click the button "OK" to proceed				N/A		
24	Z010999MCVT003_IST_START Reply to the prompt: ACMS SCOE Configuration – ACMS Power ON ⇒ Click the button "Confirm" to proceed Execute ACMS CONFIG procedure (Page 100) in parallel to the IST_START master			CONFIRM			/

Test location: <i>ESTR</i>	Operator <i>S. Eason</i>	Product-Assurance: <i>B. HOGG</i>	Date: <i>30/4/08</i>	Time <i>04:15</i>
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Step-No.	IST_START-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
25	Z010999MCVT003_IST_START Reply to the prompt: "SET TCT Table for Ambient Temperature" ⇒ Click the button "Confirm" to proceed			CONFIRM		✓	
26	D102159SCVT032EnNomTCSLoops ⇒ Click the button "End TS!" to proceed			END TS		✓	
27	D102159SCVT115_CHECK_HCS_OFF ⇒ Click the button "End TS!" to proceed			END TS		✓	
28	Z010999MCVT003_IST_START Reply to the prompt: "EAT UPLOADING" ⇒ Click the button "Confirm" to proceed			CONFIRM		✓	

Test location: <i>ESTEL</i>	Operator <i>S. ELSLEY</i>	Product-Assurance: <i>B. HOGG</i>	Date: <i>30/4/08</i>	Time <i>04:22</i>
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Herschel Integrated Satellite Test Procedure: Leading Procedure

Herschel

Step-No.	IST_START-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
29	<p>D102159SCVT192_GET_EAT_REPORT</p> <p>Check that every initial entries of the Event Action Table are successfully checked</p> <p>⇒ Click the button "End TS!" to proceed</p>			END TS		✓	
30	<p>D102159SCVT192_GET_EAT_REPORT</p> <p>Check that every initial entries of the Event Action Table are correctly set</p> <p>⇒ Click the button "End TS!" to proceed</p>			END TS		✓	
31	<p>D102159SCVT192_IST_UPLOAD_EAT</p> <p>⇒ Click the button "End TS!" to proceed</p>			END TS		✓	
32	<p>Z010999MCVT003_IST_START</p> <p>Ckeck that ACC is running on TM Packet history with filter on APID 512 (set on Step 1 of ACMS Configuration Procedure 7.2.4.2 Page 100) and checking packets reception.</p>					✓	

Test location: <i>CSIL</i>	Operator <i>S. ESIUEN</i>	Product-Assurance: <i>R. HOGE</i>	Date: <i>30/4/08</i>	Time <i>04:36</i>
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* →

PJS #1 ✓

Step-No.	IST_START-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
33	<p>Z010999MCVT003_IST_START Do not perform before the completion of the procedures: - IST START SSMM and - ACMS Configuration Cannot be run in parallel with other "active" sequences or TCs send in parallel Reply to the prompt: "CDMS CONFIGURATION:" "SURVIVAL REGISTER SETTING" "(Bus <input type="checkbox"/>, PCDU <input type="checkbox"/>, RFDN <input type="checkbox"/>, TxChain <input type="checkbox"/>, TTR <input type="checkbox"/>, Sep Strap <input type="checkbox"/>)"</p> <p>⇒ Click the button "Confirm" to proceed</p>	To Check in Config. Table (Page 73) Bus PCDU RFDN TxCh. TTR Sep Strap		CONFIRM		✓	
34	<p>D102159SCVT175_SET_SURV_REG ⇒ Click the button "End TS!" to proceed</p>			END TS	SPR 289 No TM return for TM check	✓	
35 (only in launch test cases)	<p>Z010999MCVT003_IST_START Prompt: "Check CDMS Tables" ⇒ Click the button "Confirm" to proceed</p>				N/A		

Test location: ESTRUM	Operator S. EISEN	Product-Assurance: B. HOGG	Date: 30/4/08	Time 05:02
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Herschel Integrated Satellite Test Procedure: Leading Procedure

Herschel

Step-No.	IST_START-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
36 (only in launch test cases)	D102159SCVT219_GET_BSW_HEALTH_UIU ⇒ Click the button "End TS!" to proceed				N/A		
37 (only in launch test cases)	D102159SCVT204_GET_MOT ⇒ Click the button "End TS!" to proceed				N/A		
38 (only in launch test cases)	D102159SCVT192_GET_EAT_REPORT Check that every uploaded entries of the Event Action Table are correctly set ⇒ Click the button "End TS!" to proceed				N/A		
39 (only in launch test cases)	D102159SCVT205_SAT_COM_TCT ⇒ Click the button "End TS!" to proceed				Expected that checks will fail as the uploaded TCT is for ambient but the checks are performed against the N/A		

Test location: <i>Esca</i>	Operator <i>S. Euseby</i>	Product-Assurance: <i>B. HOGGE</i>	Date: <i>30/4/08</i>	Time <i>05:02</i>
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Step-No.	IST_START-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
40 (only in launch test cases)	D102159SCVT207_SAT_COM_FCCT ⇒ Click the button "End TS!" to proceed				N/A		
41	Z010999MCVT003_IST_START Reply to the prompt: "DOWNLINK SSMM PACKET STORE and CEL A&B" ⇒ Click the button "Confirm" to proceed			CONFIRM		✓	
42	D102159SCVT188_IST_DUMP_PKT_STORE ⇒ Click the button " End TS!" to proceed			End TS	With parameters: 0 80 1 81 2 82 3 83	✓	
43	D102159SCVT188_IST_DUMP_PKT_STORE ⇒ Click the button " End TS!" to proceed			End TS	With parameters: CEL_A CEL_B All events, warnings and alarms recorded before the dump, are re-occurring during this step	✓	

Test location: <i>BSTE</i>	Operator: <i>S. EISEN</i>	Product-Assurance: <i>B. HORG</i>	Date: <i>30/4/08</i>	Time: <i>05:08</i>
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Herschel Integrated Satellite Test Procedure: Leading Procedure

Herschel

Step-No.	IST_START-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
44	Z010999MCVT003_IST_START ⇒ Click the button "End TS!" to proceed			End TS		✓	

Test location: <i>ESTEL</i>	Operator <i>S. ELSLEY</i>	Product-Assurance: <i>B. HOGG</i>	Date: <i>30/4/08</i>	Time <i>05:08</i>
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Doc. No: HP-2-ASED-TP-0134
Issue: 4.0
Date: 24.04.2008

7.2.4.1 IST_START_SSMM Procedure

Step-No.	IST_START_SSMM-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
1	<p>Z010999MCVT005_IST_START_SSMM</p> <p>Reply to the prompt: "SSMM CONFIGURATION ??????"</p> <p>⇒ Click the button "Confirm" to proceed</p>	<p>To Check in Config. Table (Page 73)</p> <p>SSMM</p>		CONFIRM		✓	
2	<p>D102159SCVT186_IST_SSMM_ON</p> <p>Reply to the prompt "Do you want to continue" "with such configuration?"</p> <p>Check the SSMM configuration and then ⇒ Click the button "Continue" to proceed</p>			CONTINUE	<p>Mass Memory config. takes about 12 minutes per bank. Therefore, the next step in IST_START procedure can be executed.</p>	✓	
3	<p>D102159SCVT186_IST_SSMM_ON</p> <p>⇒ Click the button "End TS!" to proceed</p>			END TS		✓	

Test location: <i>ESTEL</i>	Operator <i>SEBASTIAN</i>	Product-Assurance: <i>S. HOGGE B.H.</i>	Date: <i>30/4/08</i>	Time <i>04:35</i>
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Step-No.	IST_START_SSMM-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
4	<p>Z010999MCVT005_IST_START_SSMM</p> <p>Reply to the prompt: "OBCP UPLOADING"</p> <p>⇒ Click the button "Confirm" to proceed</p> <p>Let run in parallel the sequence D102159SCVT193_IST_UPLOAD_OBCP and continue with next step "Packet Store Definition"</p>			CONFIRM	occurrence of 2 BSW problems EvtID 30738	/	
5	<p>Z010999MCVT005_IST_START_SSMM</p> <p>Reply to the prompt: "Definition of the Packet Store"</p> <p>⇒ Click the button "Confirm" to proceed</p>			CONFIRM		/	
6	<p>If only 1 Bank (bank 0, 1, 2 or 3) is initialised on each SSMM D102159SCVT185_IST_PACKET_STORE_DEF</p> <p>If 3 banks (banks 0, 1 and 2) are initialised on each SSMM D102159SCVT189_IST_PACKET_STORE_DEF2</p> <p>If SSMM A banks 0, 1 and 2 and only SSMM B bank 0 are initialised D102159SCVT178_RMS_PKT_STORE_DEF</p> <p>When the requested SSMM bank are initialised ⇒ Click the button "Yes" to proceed</p>			YES		/	

Test location: <i>ESMA</i>	Operator <i>S. ESTER</i>	Product-Assurance: <i>B. HOGG BJA.</i>	Date: <i>30/4/08</i>	Time <i>04:36</i>
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Step-No.	IST_START_SSMM-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
7	<p>If only 1 Bank is initialised on SSMM A & B D102159SCVT185_IST_PACKET_STORE_DEF If 3 banks are initialised on SSMM A & B D102159SCVT189_IST_PACKET_STORE_DEF2 If 3 banks on SSMM A and only 1 on SSMM B are initialised D102159SCVT178_RMS_PKT_STORE_DEF</p> <p>⇒ Click the button "End TS!" to proceed</p>			END TS	NCR-3492 occurs: (TTRMMemCorEr_A 2 := 1)!	✓	
8	<p>Z010999MCVT005_IST_START_SSMM Reply to the prompt: "Initialise MTL Service Buffers"</p> <p>⇒ Click the button "Confirm" to proceed</p>			CONFIRM	TM(5,4) alarms expected: o Evt_MTLBufADel (ID:26914) o Evt_MTLBufBDel (ID 26915)	✓	
9	<p>D102159SCVT209_START_ON_BOARD_SCHEDULE</p> <p>⇒ Click the button "End TS!" to proceed</p>			END TS	SPR 282 TM failure: too quick check	✓	
10	<p>D102159SCVT193_IST_UPLOAD_OBCP</p> <p>⇒ Click the button "End TS!" to proceed</p>			END TS		✓	

Test location: <i>ESTEL</i>	Operator <i>SEISEN</i>	Product-Assurance: <i>BHOGE</i>	Date: <i>30/4/08</i>	Time <i>04:58</i>
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Herschel Integrated Satellite Test Procedure: Leading Procedure

Herschel

Step-No.	IST_START_SSMM-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
11	Z010999MCVT005_IST_START_SSMM ⇒ Click the button "End TS!" to proceed			END TS		✓	

Test location: <i>ESTU</i>	Operator <i>S. Eisen</i>	Product-Assurance: <i>B. HOGG</i>	Date: <i>30/4/08</i>	Time <i>04:58</i>
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Doc. No: HP-2-ASED-TP-0134
Issue: 4.0
Date: 24.04.2008

7.2.4.2 ACMS Configuration Procedure

Step-No.	ACMS_CONFIG-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
1	Open the ACMS_H_BLOC MIM Display to verify the telemetry status updating. Configure a "Telemetry Packet History" window set with filter APID = 512					✓	
2	A102109SPVT003_ACMS_CONFIG25 At the prompt "Enter your choice", insert "1" to select "Select/Load ACMS_CONFIG Input File" ⇒ Click the button "OK" to proceed	1		1		✓	
3	A102109SPVT003_ACMS_CONFIG25 ⇒ Click the button "Continue" to proceed			CONTINUE		✓	
4	A102109SPVT004_ACMS_LOADCONFIG1 At the prompt, "Enter your choice:" ⇒ Click the button "OK" to proceed	To Check in Config. Table (Page 73) ACMS Config. File			IST_MOD	✓	

Test location: <i>ESTEL</i>	Operator: <i>S. ELSLEY</i>	Product-Assurance: <i>B HOGG</i>	Date: <i>30/4/08</i>	Time: <i>04:15</i>
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Herschel Integrated Satellite Test Procedure: Leading Procedure

Herschel

Step-No.	ACMS_CONFIG-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
5 N/A for "Launch Clean Run"	A102109SPVT003_ACMS_CONFIG25 At the prompt "Enter your choice", insert "6" to select "ACMS SCOE Configuration" ⇒ Click the button "OK" to proceed	6		6		✓	
6 N/A for "Launch Clean Run"	A102109SPVT003_ACMS_CONFIG25 ⇒ Click the button "Continue" to proceed			CONTINUE		✓	
7 N/A for "Launch Clean Run"	A102109SPVT003_ACMS_CONFIG25 Verify on AND YA001939 AMCS SCOE - AS_PSEUDO 1 of 1 the parameters YMACT939 (ACMS SCOE state) YMASE939 (Simulator stata) YMAMS939 (MILFE state) YMAUS939 (UIFE state)	executing executing executing executing			Alarms are expected for TM with APID 2018 and EVID 4 when the parameters on the left have not reached the executing stage yet.	✓	

Test location: <i>ESTEL</i>	Operator <i>S. EDZET</i>	Product-Assurance: <i>BHOOG RA.</i>	Date: <i>30/4/08</i>	Time <i>04:23</i>
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Herschel Integrated Satellite Test Procedure: Leading Procedure

Herschel

Step-No.	ACMS_CONFIG-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
8	<p>A102109SPVT003_ACMS_CONFIG25</p> <p>At the prompt "Enter your choice", insert "4" to select "ACMS Power ON (in Pre-Sep configuration)"</p> <p>⇒ click the button "OK" to proceed</p>	4		4		✓	
9	<p>A102109SPVT003_ACMS_CONFIG25</p> <p>⇒ Click the button "CONTINUE" to proceed</p>			CONTINUE		✓	
10	<p>A102109SPVT011_ACMS_ON</p> <p>During this sequence, following events are expected:</p> <ul style="list-style-type: none"> - TM(5,4) Event Report and Reconfiguration Log - TM(5,2) APID:2018 (ACMS_SCOE) indicates ACMS "TestDataWord" needs to be switched ON. A few seconds later when the corresponding TC is sent, this TM(5,2) must disappear. - Multiple other events TM(5,1), such as "Fdir Task Overrun" or "Fdir Rm Parity Error" 				<p>Expected Out of Limit of AEYYY109 (synchronisation) ACC may become INVALID for a short time</p> <p>SPR 245 NCR 2862: Out of Limit of HKA_ANTH?_Data</p> <p>SPR 334 OutOfLimit of Gyro Calib Curve in LCR</p>	✓	

Test location: <i>ESTEL</i>	Operator <i>S. ELISZYN</i>	Product-Assurance: <i>B. HOGG</i> <i>IBD.</i>	Date: <i>30/4/08</i>	Time <i>04:32</i>
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Step-No.	ACMS_CONFIG-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
11	<p>A102109SPVT003_ACMS_CONFIG25</p> <p>At the prompt "Enter your choice", Insert to select "Modify ACC SGM/RM content" "5"</p> <p>⇒ Click the button "OK" to proceed</p>	5		5		✓	
12	<p>A102109SPVT003_ACMS_CONFIG25</p> <p>⇒ Click the button "Continue" to proceed</p>			CONTINUE		✓	
13	<p>A102109SPVT003_ACMS_CONFIG25</p> <p>At the prompt "Enter your choice", Insert for "Default configuration for separation" "20"</p> <p>⇒ Click the button "OK" to proceed</p>	20		20	Expected Out of Limit of AEYYY109 (synchronisation) ACC may become INVALID for a short time TC PM_Reset (ACY42109) not acknowledge expected	✓	
14	<p>A102109SPVT003_ACMS_CONFIG25</p> <p>⇒ Click the button "Continue" to proceed</p>			CONTINUE		✓	

Test location: <i>ESTR</i>	Operator <i>S. Eisen</i>	Product-Assurance: <i>S. Hoge</i>	Date: <i>30/4/08</i>	Time <i>04:33</i>
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Herschel Integrated Satellite Test Procedure: Leading Procedure

Herschel

Step-No.	ACMS_CONFIG-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
15	A102109SPVT003_ACMS_CONFIG25 After about 10 min verify that ACMS Sequences are correctly terminated and ACMS CONFIG MAIN MENU 1.0 is available.					✓	
16	A102109SPVT003_ACMS_CONFIG25 At the prompt "Enter your choice", Insert "99" to select "Return to Main Menu 1.0" ⇒ Click the button "OK" to proceed	99		99		✓	
17	A102109SPVT003_ACMS_CONFIG25 ⇒ Click the button "Continue" to proceed			CONTINUE		✓	

Test location: <i>ESPEC</i>	Operator: <i>S. EISEN</i>	Product-Assurance: <i>B. HOGG</i>	Date: <i>30/4/08</i>	Time: <i>04:47</i>
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7.3 IST Test Case

According to the actual IST Test Case, IST_GUI will prompt with following window(see Figure 1) to execute the relevant test sequence / procedure as listed below.

Click the button “Confirm” to call the appropriate sequence displayed in the message box.

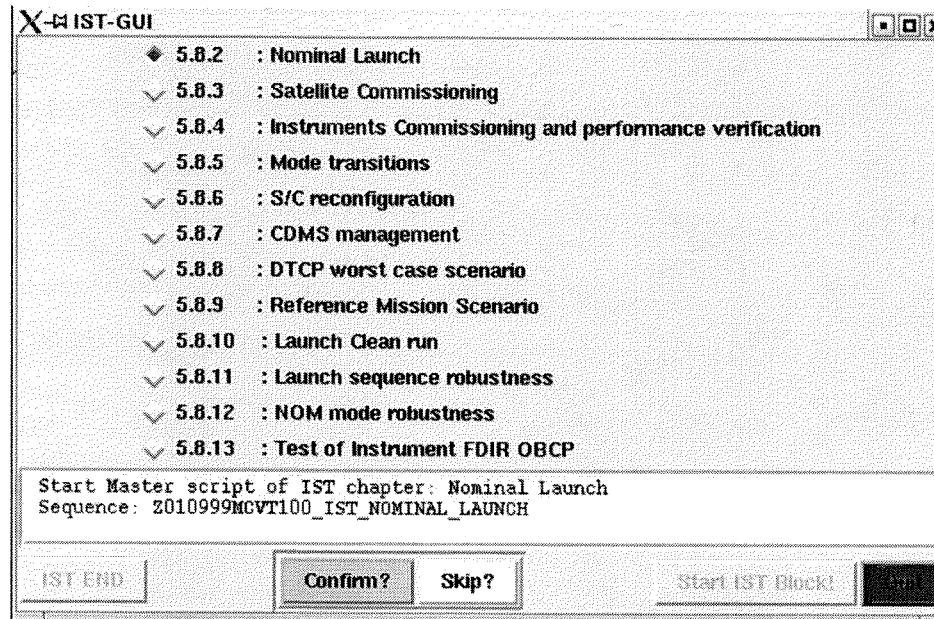


Figure 1: IST_GUI calling Master sequence, for instance “Nominal Launch”

Test location: <i>ESTC</i>	Operator <i>J. E. S. J. E. Y.</i>	Product-Assurance: <i>S. HOGG</i>	Date: <i>30/4/08</i>	Time <i>05:09</i>
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Herschel Integrated Satellite Test Procedure: Leading Procedure

Herschel

Important Note: After execution of the IST Test Case, S/C has to be switched off with the "IST END" procedure as described in chapter 7.4.

Herschel IST Test Case 'Launch Phase, Separation and Post Separation':	HP-2-ASED-TP-0185
Herschel IST Test Case 'Satellite Commissioning':	HP-2-ASED-TP-0186
Herschel IST Test Case 'ACMS Commissioning':	HP-2-ASED-TP-0187
Herschel IST Test Case 'Instruments Commissioning and Performance Verification':	HP-2-ASED-TP-0188
Herschel IST Test Case 'Mode Transitions':	HP-2-ASED-TP-0189
Herschel IST Test Case 'S/C Reconfiguration':	HP-2-ASED-TP-0190
Herschel IST Test Case 'CDMS Management': ..	HP-2-ASED-TP-0191
Herschel IST Test Case 'DTCP Worst Case Scenario': ..	HP-2-ASED-TP-0192
Herschel IST Test Case 'REFERENCE Mission Scenario':	HP-2-ASED-TP-0193
Herschel IST Test Case 'Launch Clean Run':	HP-2-ASED-TP-0194
Herschel IST Test Case 'Launch Sequence Robustness':	HP-2-ASED-TP-0195
Herschel IST Test Case 'NOM Mode Robustness':	HP-2-ASED-TP-0196
Herschel IST Test Case 'Test of Instrument FDIR OBCP'	HP-2-ASED-TP-0197

Highlight the TEST Case to be performed in the above

Test location: <i>ESTEL</i>	Operator <i>S. EUSLEY</i>	Product-Assurance: <i>R. HOGG</i> <i>EBH.</i>	Date: <i>30/4/07</i>	Time <i>05:07</i>
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File: HP-2-ASED-TP-0134_Herschel_IST_Leading_Procedure__iss_4_0_24-04-08

7.4 IST END Procedure

Step-No.	IST_END-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
1.	IST_GUI ⇨ Click the button "OK" and then ⇨ Click the button "IST_END" to proceed					✓	
2.	D102159SCVT188_IST_DUMP_PKT_STORE ⇨ Click the button "Confirm" to proceed					✓	
3.	D102159SCVT188_IST_DUMP_PKT_STORE ⇨ Click the button " End TS!" to proceed					✓	

Test location: <i>ESTEC</i>	Operator <i>O.M</i>	Product-Assurance: <i>R. Goossens</i>	Date: <i>30.4.08</i>	Time :
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Herschel Integrated Satellite Test Procedure: Leading Procedure

Herschel

Step-No.	IST_END-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
4. Only if PACS, SPIRE or HIFI is still ON	<p>Z010999MCVT004_IST_END</p> <p>If one of the instruments is detected "ON" reply to the prompt:</p> <p style="text-align: center;">"Should the sequence"</p> <p style="text-align: center;">Z102999SCVT011_ASDGEN_PACSPWROFF_P Z102999SCVT005_ASDGEN_SPIREPWROFF_P Z102999SCVT015_ASDGEN_HIFIPWROFF_P</p> <p style="text-align: center;">"be called?"</p> <p>⇒ Click the button "YES" to proceed</p>						N.A.
5. Only if CCU A is ON	<p>Z010999MCVT004_IST_END</p> <p>If CCU is detected "ON" reply to the prompt:</p> <p>Should the sequence "K102999ECVT001_ASDGENCCU_ABPWROFF be called</p> <p>⇒ Click the button "YES" to proceed</p>					✓	

Test location: <i>ESTEC</i>	Operator: <i>O.M.</i>	Product-Assurance: <i>R. Boossens</i>	Date: <i>30.4.08</i>	Time: :
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Step-No.	IST_END-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
6. Only if RWL ON and ACMS is still in SCM	Z010999MCVT004_IST_END "Please ensure that ACMS is set in OCM mode, otherwise select the correct menu in the ACMS_CONFIG25" Perform chapter 7.4.1 then click OK						N.A.
7. Only if RWL are still spinning	Z010999MCVT004_IST_END Start the sequence A102109SPVT061_RWL_SPINDOWN? ⇒ Click the button "YES" to proceed				Out of Limits concerning RWL speed are expected during RWL spin down		N.A.
8. Only if ACMS is still ON	Z010999MCVT004_IST_END Start the sequence A102109SPVT012_ACMS_OFF ? ⇒ Click the button "YES" to proceed					✓	

Test location: <i>ESTEC</i>	Operator <i>O.M</i>	Product-Assurance: <i>R. Grossens</i>	Date: <i>30.4.08</i>	Time <i>14:55</i>
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Step-No.	IST_END-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
9. Only if ACMS is still ON	<p>A102109SPVT012_ACMS_OFF</p> <p>During this sequence, following event are expected to occur:</p> <ul style="list-style-type: none"> • TM(5,2) EvtID: 33 Event Report - ACB Rx Failed • TM(5,2) EvtID: 33 Event Report - ACB Rx Failed • TM(5,4) EvtId:16426 Mode SBSM Entry • Event Report - Boot Report and Reconfiguration Log • Event Report - SDB Unhealthy • Multiple "New Tm 251004939" • Multiple "New Tm 251001939" • Multiple "New Tm 251002939" <p>This sequence needs time to be completely run, so let run in parallel with the following steps.</p>					✓	
10. Only if SREM is still ON	<p>Z102999SCVT002_SREM_OFF</p> <p>⇒ Click the button "End TS!" to proceed</p>				<p>SPR 35-290 NCR 3986 Wrong TM set in HPSDB</p> <p><i>to be closed & removed</i></p>	✓	
11.	<p>D102159SCVT174_IST_REDUNDANT_CONF</p> <p>⇒ Click the button "Ens TS" to proceed</p>					✓	

Test location: <i>ESTEL</i>	Operator <i>O.M.</i>	Product-Assurance: <i>R. Goossens</i>	Date: <i>30.4.08</i>	Time <i>15:05</i>
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Herschel Integrated Satellite Test Procedure: Leading Procedure

Herschel

Step- No.	IST_END-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
12. Only if Survival Register set with separated flag	Z010999MCVT004_IST_END At the prompt "The survival register is set with the launch flag "separated". It must be set to "not separated" to avoid any reconfiguration during power off" ⇒ Click the button "Yes" to proceed					✓	
13. Only if Survival Register set with separated flag	D102159SCVT175_SET_SURV_REG ⇒ Click the button "End TS!" to proceed					✓	

Test location: <i>ESTEC</i>	Operator <i>OMA</i>	Product-Assurance: <i>R. Goossens</i>	Date: <i>30.4.08</i>	Time <i>15:09</i>
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Step-No.	IST_END-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
14. Only if CROME wrongly set	Z010999MCVT004_IST_END Reply to the prompt "The CROME registers are not configured " "in PMA or PMB nominal " "Such configuration will block TM during Power OFF" ⇨ Click the button "YES" to proceed						✓
15. Only if CROME wrongly set	D102159SCVT176_WRITE_CROME ⇨ Click the button "End TS!" to proceed						✓
16. Only if SSMM is ON	D102159SCVT188_IST_DUMP_PKT_STORE ⇨ Click the button "End TS!" to proceed					✓	
17. Only if SSMM is ON	D102159SCVT181_Disable_PKT_STORE ⇨ Click the button "End TS!" to proceed					✓	

Test location: <i>ESTEC</i>	Operator: <i>OMA</i>	Product-Assurance: <i>R. Goossens</i>	Date: <i>20.01.08</i>	Time: <i>15:16.</i>
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Herschel Integrated Satellite Test Procedure: Leading Procedure

Herschel

Step- No.	IST_END-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
18. Only if SSMM is ON	D102159SCVT187_IST_SSMM_OFF During this sequence, the following events are expected: <ul style="list-style-type: none"> • TM(5,2) EvtId: 84 PM COCOS SPW C Reconnection • TM(5,4) EvtId: 88 MM A COCOS RT Failure • TM(5,4) EvtId: 148 MM SPW C address transfer error • TM(5,2) EvtId: 85 PM COCOS SPW C Reconnection • TM(5,4) EvtId: 89 MM A COCOS RT Failure • TM(5,4) EvtId: 149 MM SPW C address transfer error ⇒ Click the button "End TS!" to proceed					✓	
19. Not for Launch Cases	D102159SCVT001PM_SELECT ⇒ Click the button "End TS!" to proceed					✓	
20.	Z010999MCVT002_POWER_OFF_HER_IST ⇒ Click the button "End TS!" to proceed					✓	

Test location: <i>ESTEC</i>	Operator <i>OMA</i>	Product-Assurance: <i>R.Goossens</i>	Date: <i>30.04</i>	Time <i>15:30</i>
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Herschel Integrated Satellite Test Procedure: Leading Procedure

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Step-No.	IST_END-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
21 Only if TTC- SCOE is still ON	Y102989ETVT020_TTC_SCOE_OFF ⇒ Click the button "End TS!" to proceed						✓
21.	Z010999MCVT004_IST_END ⇒ Click the button "End TS!" to proceed					✓	
22.	IST_GUI ⇒ Click the button "Quit" to terminate the test sequence					✓	
23.	Update CVS Tag 1. Open a shell (xterm) 2. Execute the command update_tag Insert the name of TAG → IST_x_PART_x_TP_xxxx_x_x_END_xxx						

Test location: <i>ESTEC</i>	Operator <i>O.M</i>	Product-Assurance: <i>R. Boosens</i>	Date: <i>20.4.08</i>	Time :
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Doc. No: HP-2-ASED-TP-0134
Issue: 4.0
Date: 24.04.2008



7.4.1 ACMS SCM to OCM transition for power off

Step-No.	IST_END-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
24.	<p>A102109SPVT003_ACMS_CONFIG25</p> <p>At the prompt "Enter your choice", insert "2" to select "Transition SCM to OCM"</p> <p>⇒ Click the button "OK" to proceed, then "Continue"</p>	2					
25.	<p>A102109SPVT003_ACMS_CONFIG25</p> <p>At the prompt Menu 7 "Enter your choice", insert "5" to select "Reaction wheels spin down"</p> <p>Click the button "OK" to proceed, then "Continue"</p>	5					
26.	<p>A102109SPVT003_ACMS_CONFIG25</p> <p>At the prompt Menu 9 "Enter your choice", insert "1" to select "Switch off ACMS"</p> <p>Click the button "OK" to proceed, then "Continue"</p>	1					
Test location:		Operator	Product-Assurance:	Date:	Time		
					:		

Step- No.	IST_END-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
27.	<p>A102109SPVT012_ACMS_OFF</p> <p>During this sequence, following event are expected to occur:</p> <ul style="list-style-type: none"> • TM(5,4) EvtId:16426 Mode SBSM Entry • Event Report - Boot Report and Reconfiguration Log • Event Report - SDB Unhealthy • TM(5,2) EvtID: 33 Event Report - ACB Rx Failed • TM(5,2) EvtID: 33 Event Report - ACB Rx Failed • Multiple "New Tm 251004939" • Multiple "New Tm 251001939" • Multiple "New Tm 251002939" • Multiple TM(5,1) such as "FDir Task Overrun", etc... 						
28.	<p>A102109SPVT003_ACMS_CONFIG25</p> <p>At the prompt "Enter your choice", insert "99" to select "Terminate ACMS_CONFIG25"</p> <p>Click the button "OK" to proceed, then "Confirm" and continue in parallel with the next step.</p>	99					

Test location:	Operator	Product-Assurance:	Date:	Time
				:



Herschel Integrated Satellite Test Procedure: Leading Procedure

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Step-No.	IST_END-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
29.	A102109SPVT017_ACMS_CRIS_BACKGROUND ⇒ Terminate the sequence.						

Test location:	Operator	Product-Assurance:	Date:	Time
				:

Doc. No: HP-2-ASED-TP-0134
 Issue: 4.0
 Date: 24.04.2008



8.1 Procedure Variation Summary

	Test Change	Curr. No.:	
		Date	
		Page	of
Test designation	Test Procedure	Issue	Rev.
Test step changed	Reason for Change		
Prepared by:	Resp. Test Leader	Project Engineer	
PA/QA	Prime	Customer	

Table 8.1-1: Procedure Variation Sheet

Procedure Variation Summary

	Test Change	Curr. No.: #1	Date 29-04-2008
		Page 1	of 1
Test designation MODE TRANS	Test Procedure TP- 134	Issue 4	Rev. - 0
Test step changed 33	Reason for Change REQUIRED DUE SC ALIGNMENT		
<p>• RUN SCRIPT</p> <p style="text-align: center;">A102109SPVT211_ACHS_THERMISTOR_LOG.tcl</p> <p>(This will log specific ACHS related thermistor values to a file during the slc alignment tests.)</p> <p><u>NOTE</u>: THIS SCRIPT SHOULD BE LEFT RUNNING FOR THE DURATION OF THE slc ALIGNMENT TESTS.</p>			
Prepared by: chuck	Resp. Test Leader M. THELNISSEN	Project Engineer	
PAQA R. Coassens	Prime	Customer	

8.3 Sign-off Sheet

To finalise the test campaign, all responsible personnel shall sign off the filled-in procedure in the following table:

	Date	Signature
Test Director	30-04-08	<i>[Signature]</i>
Test Conductor	30-04-08	<i>[Signature]</i>
PA Responsible	30-04-08	<i>[Signature]</i>

Annex B: Script Hierarchy

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===== IST START =====

>Z010999MCVT001_POWER_ON_HER_IST $PM $tcDec $batScoe
|----> Y102989EPVT007_IST_PWR_SCOE_ON $configBS
|----|----> Z010999MMXX002UNITS_CHECK
|----> async referby timeSynchronisation D102159SCVT032TIMESYNCRO
|----> D102159SCVT210_GET_ALARM_STATUS
|----> D102159SCVT210_GET_ALARM_STATUS
|----> W102584EPVT007_IST_CHECK_PCDU
|----> Z010999MMXX002UNITS_CHECK
|----> R102479ECVT009_UNITS_SELECTION
> Z010999MCVT001_POWER_ON_HER_IST $PM $tcDec $batScoe
|----> Y102989EPVT007_IST_PWR_SCOE_ON $configBS
|----|----> Z010999MMXX002UNITS_CHECK
|----> async referby timeSynchronisation D102159SCVT032TIMESYNCRO
|----> D102159SCVT210_GET_ALARM_STATUS
|----> D102159SCVT210_GET_ALARM_STATUS
|----> W102584EPVT007_IST_CHECK_PCDU
|----> Z010999MMXX002UNITS_CHECK
|----> R102479ECVT009_UNITS_SELECTION
> D102159SCVT210_GET_ALARM_STATUS
> D102159SCVT176_WRITE_CROME $papCcs 1
> D102159SCVT174_IST_REDUNDANT_CONF $bus $pcduTmTc $hps $txChain $rfdn $tmObt
$tmRate
|----> D102159SCVT104_ENCODER_SELECT $tmObt $tm_Enc_Config
> async referby istStartSSMM Z010999MCVT005_IST_START_SSMM $ssmm]
> K102999ECVT001_ASDGENCCU_ABPWON
|----> K102999ECVT001_ASDGENCCU_MnDisDLC
|----> K102999ECVT001_ASDGENCCUA_POWERON
|----|----> Z010999MMXX002UNITS_CHECK
|----> K102999ECVT001_ASDGENCCUA_ChkEssTM
|----> K102999ECVT001_ASDGENCCUB_POWERON
|----|----> Z010999MMXX002UNITS_CHECK
|----> K102999ECVT001_ASDGENCCUB_ChkEssTM
> K102999ECVT001_ASDGENCCU_MnEBOTH2
> K102999ECVT001_ASDGENCCU_MnEBOTH1
> K102999ECVT001_ASDGENCCUA_POWERON
|----> Z010999MMXX002UNITS_CHECK
> K102999ECVT001_ASDGENCCUA_MnEnaMd2
> K102999ECVT001_ASDGENCCUA_MnEnaMd1
> K102999ECVT001_ASDGENCCUB_POWERON
|----> Z010999MMXX002UNITS_CHECK
> K102999ECVT001_ASDGENCCUB_MnEnaMd2
> K102999ECVT001_ASDGENCCUB_MnEnaMd1
> Z010999MCVT153_IST_STATUS 5.8.2.4.2
|----> ACMS_get_RM_status RMA
|----> ACMS_get_RM_status RMB
> async A102109SPVT003_ACMS_CONFIG25
|----> A102109SPVT004_ACMS_LOADCONFIG1
|----> A102109SPVT010_ACMS_SCOE_CONFIG1
|----|----> async A102109SPVT017_ACMS_CRB_BACKGROUND
|----> A102109SPVT011_ACMS_ON
|----|----> Z010999MMXX002UNITS_CHECK
|----|----> ACMS_get_RM_status RMA

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|----|----> ACMS_get_RM_status RMB
|----> A102109SPVT021_ACMS_ACC_SEPARA
> D102159SCVT032EnNomTCSLoops ist_herschel_tcs_config
> D102159SCVT115_CHECK_HCS_OFF
> D102159SCVT192_IST_UPLOAD_EAT
|----> D102159SCVT192_GET_EAT_REPORT
|----> D102159SCVT192_GET_EAT_REPORT 1
> D102159SCVT175_SET_SURV_REG $busSM $pcduSM $rfdnSM $txChainSM $trSM $sepStsSM
> D102159SCVT219_GET_BSW_HEALTH_UIU 1
> D102159SCVT204_GET_MOT 1
> D102159SCVT192_GET_EAT_REPORT 1
> D102159SCVT205_SAT_COM_TCT 1
> D102159SCVT207_SAT_COM_FCCT 1
> D102159SCVT188_IST_DUMP_PKT_STORE 0 80 1 81 2 82 3 83
> async referby celDownlink D102159SCVT188_IST_DUMP_PKT_STORE CEL_A CEL_B

```

===== IST END =====

```

> $swOFFsequence
> A102109SPVT061_RWL_SPINDOWN
> async referby acmsOff A102109SPVT012_ACMS_OFF
> Z102999SCVT002_SREM_OFF
> D102159SCVT174_IST_REDUNDANT_CONF A A 0 0 0 0
|----> D102159SCVT104_ENCODER_SELECT $tmObt $tm_Enc_Config
> D102159SCVT175_SET_SURV_REG B B ABBB B B not
> D102159SCVT176_WRITE_CROME AB 1
> D102159SCVT181_DISABLE_PKT_STORE
> D102159SCVT187_IST_SSMM_OFF
> Y102989ETVT020_TTC_SCOE_OFF
|----> Y102989ECVT018_TTC_TC_OP_METHOD OFFLINE
|----|----> Y102989ETVT017_TTC_CHECK_ROUTINE
|----|----> Y102989ETVT019_TTC_SCOE_ACTIVITY
> W102584SPVT101_PCDU_TRANSITION_FDIR 5
> Z010999MCVT002_POWER_OFF
|----> D102159SCVT028SSMM_OFF
|----> D102159SCVT001PM_SELECT B
|----|----> D102159SCVT003DISTHERMALCONTROL
|----|----> Z010999MMXX002UNITS_CHECK
|----> D102159SCVT001PM_SELECT A
|----|----> D102159SCVT003DISTHERMALCONTROL
|----|----> Z010999MMXX002UNITS_CHECK
|----> R102479SMXX001_XPND_HUM_TXT
|----> Y102989EPVT002_PWR_SCOE_OFF
|----|----> Z010999MMXX003UNITS_CHECK_PWR_OFF
|----|----> Z010999MMXX003UNITS_CHECK_PWR_OFF
|----|----> Z010999MMXX003UNITS_CHECK_PWR_OFF
|----> Z010999MMXX003UNITS_CHECK_PWR_OFF

```

Annex C: Session Record

Test Description	IST MODE TRANSITION
Session ID	2008-04-30-03-32 - hercdmu - hpws 22 - REALTIME - MODE - TRANS
Start Time:	03:32
End Time	16:45
CVS Tag for Test	IST-1-PART 2 - 2-TP-0189-ISS3-MODE-TRANSITION-END -002
Applicable IST Specification	S-8-5 HP-2-ASED-SP-0939
Test conductor	C. MUCH
QA Approval	B. HOGG.

Test Description	
Session ID	
Start Time:	
End Time	
CVS Tag for Test	
Applicable IST Specification	
Test conductor	
QA Approval	

Test Description	
Session ID	
Start Time:	
End Time	
CVS Tag for Test	
Applicable IST Specification	
Test conductor	
QA Approval	

Annex D: Operation Notes

Operation Note 3

Title: ACMS SCOE does not boot	Date: 06/02/08
Observation: The ACMS SCOE does not boot. Reason: One of the STR UCE (Unit Checkout Equipment) electrical stimuli programs hangs.	
Operator Action: Until NCR / SPR is solved the following workaround is proposed (by Martijn): During powering the Power SCOE in the cleanroom: 1) Go to the STR UCE (in cleanroom) and select electrical stimuli PC on the KVM switch, press 2 time 'scroll lock' and select PC#2. 2) Kill the running application, by pressing the cross in the upper right corner. 3) Start the UCE application by double clicking the icon 'SMI', an application 'Star Mapper Analogue Chain Simulation' should start up. 4) Press 2 time 'scroll lock' and select PC#3 and repeat step 3.	

Operation Note 8

Title: DOD Alarm	Date: 14/02/08
Observation: <p>During each Power on within the "IST_START" there is a check of the DOD flag. Directly after the "D102159SVT32TIMESYNCRO" the dump of the RM LOG and the DOD Flag check is performed by the "D102159SCVT210_Get_ALARM_STATUS".</p> <p>If the DOD alarm is present it has to be reset , otherwise the S/C will enter Save Mode directly after separation.</p>	
Operator Action: <p>For resetting the DOD alarm decrease the Vbat under the DoD threshold and then increasing the Vbat upper the DoD threshold therefore perform the following steps:</p> <ul style="list-style-type: none">Open a shell window -> startCMD bsvncOn the window "H-P BS SCOE" switch to localOn the window "BS SCOE Config" change the Battery Voltage from 25,4 to 19The push the button save&updateOn the window "BS SCOE Config" change the Battery Voltage from 19 to 25.4The push the button save&updateOn the window "H-P BS SCOE" switch to remote <p>Execute the script: D102159SCVT210_Get_ALARM_STATUS to dump the RM Log to check DOD Flag Check if DOD alarm is still present</p>	

Operation Note 11

Title: Failure in TM Check of CCU Valves	Date: 14/02/08
Observation: If CCU Valves sensing lines are connected to CRYO SCOE instead of CCU the valves status check fails at CCU Power ON	
Operator Action: 1) On Test conductor Console, perform "connect PFM_CRYO" 2) Thanks Telemetry Query Display (TQD) check following TMs - YM648958 (VLV_STATUS_V103) instead of KM269302 = "CLOSED" - YM649958 (VLV_STATUS_V106) instead of KM269303 = "CLOSED" - YM640958 (VLV_STATUS_V501) instead of KM270302 = "CLOSED" - YM641958 (VLV_STATUS_V503) instead of KM270303 = "CLOSED" - YM643 958 (VLV_STATUS_V505) instead of KM271303 = "OPEN" 3) On Test conductor Console, perform "disconnect PFM_CRYO"	



END OF DOCUMENT

Insert actual distribution list

Attachment 2 to Section 6.1.1:

As-Run Procedure HP-2-ASED-TP-0189

Title: **Herschel IST Test case "Mode Transitions" Procedure**

AS Run DRY Run

CI-No: 2008-04-30-03-32 - hercdmu - REALTIME -
MODE - TRAN

Prepared by:	Functional Team	Date:
Checked by:	C. Much <i>C. Much</i>	29/04/2008
Product Assurance:	J. Hall <i>J. Hall</i>	29/4/2008
Configuration Control:	W. Wietbrock	
TASF Engineering	G. Beauflis <i>G. Beauflis</i>	29/04/2008
TASF Test Director	S. Mooney <i>S. Mooney</i>	29/04/2008
Project Management:	Dr. W. Fricke <i>W. Fricke</i>	28/04/2008
Project Management	Denis Montet <i>D. Montet</i>	29.04.08

Distribution: See Distribution List (last page)

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1 Scope

This Test Procedure contains the step by step procedure for the IST Test case "Mode Transitions". This specific test case is called from the IST Leading procedure which performs the start-up and shutdown of the satellite.

The leading procedure also contains the supporting definition of the relevant supporting infrastructure and pre test conditions required for the IST tests to be performed correctly.

1.1 Objective

This document shall act as the Step by Step procedure for the Herschel IST **Mode Transition test**, It will be performed in conjunction with the IST Leading Procedure HP-2-ASED-TP-0134, and will become the 'as run' procedure when executed, and shall be identified on the front sheet in 'Red' before start of test. A new 'as run' copy of the procedure shall be used for each test run, and will become a accurate history of the test performed. All activities will be recorded, with results obtained. Any anomalies found will be noted in the step by step section as they arise, and where applicable an SPR (Software Problem reports) will be raised.

1.2 Flow

See Herschel IST Procedure Leading Procedure HP-2-ASED-TP-0134

2 Documents

2.1 Applicable Documents

See Herschel IST Procedure Leading Procedure HP-2-ASED-TP-0134

2.2 Reference Documents

See Herschel IST Procedure Leading Procedure HP-2-ASED-TP-0134

2.3 Other Documents

See Herschel IST Procedure Leading Procedure HP-2-ASED-TP-0134

3 Requirements to be verified

See Herschel IST Procedure Leading Procedure HP-2-ASED-TP-0134

4 Configuration

4.1 Hardware Configuration

See Herschel IST Procedure Leading Procedure HP-2-ASED-TP-0134

4.2 SW Configuration

See Herschel IST Procedure Leading Procedure HP-2-ASED-TP-0134

4.3 SCOE Cables Connection

See Herschel IST Procedure Leading Procedure HP-2-ASED-TP-0134

5 Conditions

5.1 Personnel

See Herschel IST Procedure Leading Procedure HP-2-ASED-TP-0134

5.2 Environmental

See Herschel IST Procedure Leading Procedure HP-2-ASED-TP-0134

5.3 General Precautions and Safety

See Herschel IST Procedure Leading Procedure HP-2-ASED-TP-0134

6 Verification Requirements and Test Criteria

See Herschel IST Procedure Leading Procedure HP-2-ASED-TP-0134

7 IST Mode Transitions Step by Step Procedure

Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
1	<p>Z010999MCVT101_MODE_TRANSITIONS</p> <p>Reply to the prompt: "Start Herschel IST Mode Transitions 5.8.5"</p> <p><i>yes</i> Click the button "Confirm" to proceed</p>			<i>yes</i>		✓	
2	<p>Z010999MCVT101_MODE_TRANSITIONS</p> <p>Reply to the prompt: "IST STATUS (5.8.5.3)"</p> <p>⇒ Click the button "Confirm" to proceed</p>				<i>It doesn't say here it is also reconfiguring the YPND</i>	✓	
3	<p>Z010999MCVT153_STATUS_IST 5.8.5.3</p> <p>At the prompt: "Do you want to stop and notice each failure?"</p> <p>⇒ Click the button "Yes" to proceed</p>	Yes			<i>It asked that twice !!</i>	✓	
4	<p>Z010999MCVT153_STATUS_IST 5.8.5.3</p> <p>⇒ Click the button "OK" to proceed</p>					✓	

Test location: <i>ESTEC</i>	Operator: <i>[Signature]</i>	Product-Assurance: <i>D.LAMONBY</i>	Date: <i>30-9-2008</i>
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Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
5	Z010999MCVT101_MODE_TRANSITIONS Reply to the prompt: "CONFIGURATION FOR TRANSITION: Launch to Launch" ⇒ Click the button to "confirm" to proceed					✓	
6	Z010999MCVT101_MODE_TRANSITIONS Reply to the prompt: "EXECUTION OF TRANSITION: Launch to Launch" ⇒ Click the button "Confirm" to proceed					✓	
7	D102159SCVT086_LAUNCH_LAUNCH_IST ⇒ Click the button "End TS !" to proceed					✓	
8	Z010999MCVT101_MODE_TRANSITIONS Reply to the prompt: "IST STATUS SPACECRAFT AND EGSE" "(5.8.5.4 Configuration for Launch)" ⇒ Click the button "Confirm" to proceed					✓	

SPR# 1
PVS# 1

Test location: <i>Herschel</i>	Operator: <i>Jeff & Will & Dave</i>	Product-Assurance: <i>D. LAMONBY</i>	Date: <i>30-4-2008</i>
-----------------------------------	--	---	---------------------------

Step 10

```

X-ZD10999MCVT153_IST STATUS.tcl
Result File: /HPCCS/VARIABLE/RESULTS/2008_04_30_03_32_hercdmu_hpws22_REALTIME_MODE_TRAN/SEQ/20080430_050924_00/D_ZD10999MCVT101_IST_MODE_TRANSITIONS.log
2008.121.05.50.46.836482 Checking Telemetry RMB18442
2008.121.05.50.46.863859 Description: RX2 125-4K Stat
2008.121.05.50.46.890482 Condition: [getengvalue [fetch RMB18442]] == "4 Kbps"
2008.121.05.50.46.916864 TEST PASSED Value: 4 Kbps
2008.121.05.50.46.944888
2008.121.05.50.46.971432 =====
2008.121.05.50.46.998532 == IST STATUS 5.8.5.4 ==> testTTC_TM_Rate 150kbps ==
2008.121.05.50.47.031503 =====
2008.121.05.50.47.059498
2008.121.05.50.47.090595
2008.121.05.50.47.116968 Checking Telemetry DEMRF160
2008.121.05.50.47.143346 Description: TME BITRATE
2008.121.05.50.47.169701 Condition: [getengvalue [fetch DEMRF160]] == "150 Kbps"
2008.121.05.50.47.195890 Waiting time 0 seconds
2008.121.05.50.47.221123 TEST FAILED value: 5 Kbps
2008.121.05.50.47.297146 Press one of the following:
2008.121.05.50.47.380686 Repeat TC & TM - to send again TC, acquire the parameters and to repeat the checks.
2008.121.05.50.47.407222 Repeat TM - to acquire again the parameters and to repeat the checks.
2008.121.05.50.47.433850 Continue - to continue the Test Sequence execution.
2008.121.05.50.47.460493 Abort - to abort the Test Sequence execution.
2008.121.05.51.18.061846 User has chosen to continue the test
2008.121.05.51.20.095237 WARNING: TTC Range cannot be checked when no XPND Tx are ON!
2008.121.05.51.20.134362
2008.121.05.51.20.160284 =====
2008.121.05.51.20.186108 == IST STATUS 5.8.5.4 ==> testTTC_TxChain T1 RF OFF A OFF LCL ON ==
2008.121.05.51.20.212387 =====
2008.121.05.51.20.238245
2008.121.05.51.20.268274
2008.121.05.51.20.294186 Checking Telemetry WM92C565
2008.121.05.51.20.320458 Description: Xpnd2Tx L16 S
  
```

Satellite Status in test case 5.8.5.4

CDMS

MODE	launch
TM/OBT	A
PM&SW	A/N[B1N]
SCBP/MIL	A-0 / stopped
FDIR/srvCBH	AFS / N only
Launch Straps	not separated

Power

PCDU/HPS	IF A / all N
Battery	charged
Power Domain	BAT

SSMM

Mass Memory	1Bank (no1)
-------------	-------------

TTC

note	RFDN = AAAA
RxRate	Rx1:125bps Rx2:4kbps
TME/Tx Rate	1-spec:150kbps
TxChain	T1 RF OFF A OFF LCL
Rx1Ant	LGA1
Rx2Ant	LGA2

Instruments

CCU	A, B ON HK 8s-- No ch
SPIRE	OFF
HIFI	OFF
PACS	OFF

ACMS

MODE	SBM pre sep
Bus/PM&SW	A / A/N[B1]S
CRS/FDIR	1A, 2S / AFS
GYROs	A, B, C IF 1 ON
STRs	OFF
RWLs	OFF
LV enable	OFF
RCS enable	OFF

Monitoring

SREM	OFF
VMC	OFF

GSE support

Power Source	BS	TC Source	UMB 4K VCO	ENV simulator	stand-by-- No code
--------------	----	-----------	------------	---------------	--------------------

OK!

Step 10

Telemetry Desktop

Displays: File Select Config ... Print ... Resize Close List 0 1 2 4 9 Subwindow Filling: ENABLED

MIM:SAT
AND:YA001939
MIM.LCL_HERSCH
MIM.TTC_H_P
MIM.HEATERS
MIM.GEN_POWER

DS: 65535 2008.121.05.53.07.112 STOP LIVE RETR...

SAT MIMICS DISPLAY 65296 65535 BS SCOE HK 756 2008.121.05.53.06.538

Herschel Satellite Overview

TT&C
Tx chain: OFF
Rx1 Ant.: LGA1
Rx2 Ant.: LGA2/3
TM Rate: 5 Kbps
Rx1 Rate: 125 bps
Rx2 Rate: 4 Kbps

PCDU
Heaters: TCT ON, LCLs TCS OFF
Battery: 25.43 V, I bat. 7.28 A
SAS Vnom: 28.19 V, Vred: 28.15 V
Sun Module: 7.34 Vmea

SPIRE
SPIRE A: OFF, SPIRE B: OFF
HIFI A: OFF, HIFI B: OFF
PACS A: OFF, PACS B: OFF

CDMS
PCDH A: cold 38.04, hot 37.48
PCDH B: hot 32.11, cold 29.70

ACMS
ACC A: cold 37.76, hot 37.00
ACC B: hot 28.00, cold 30.14
SBM PreSep: Mode Nominal

RCS
RCS A: FCVA 0.00, LV A 0.00
RCS B: FCVB 0.00, LV B 0.00

Launch Straps
1 2 3 4 5 6 7 8

Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
9	Z010999MCVT153_STATUS_IST 5.8.5.4 At the prompt: “Do you want to stop and notice each failure?” ⇒ Click the button “YES” to proceed	Yes				✓	
10	Z010999MCVT153_STATUS_IST 5.8.5.4 ⇒ Click the button “OK” to proceed					✓	
11	Z010999MCVT101_MODE_TRANSITIONS Reply to the prompt: “LAUNCH TO SAM (5.8.5.5)” ⇒ Click the button “confirm” to proceed					✓	
12	D102159SCVT216_ASED_TM_150_KBPS_IST ⇒ Click the button “End TS!” to proceed					✓	
13	D102159SCVT163_IST_MM_LAN_SAM At the prompt: “Please check on the RF-SCOE that” “RF signal is correctly applied” ⇒ Only when a signal appears on TT&C SCOE spectrum					✓	

Test location: <i>BSTEC</i>	Operator: <i>Jellies</i>	Product-Assurance: <i>D. LAMONBY</i>	Date: <i>30-9-2008</i>
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Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
14	D102159SCVT163_IST_MM_LAN_SAM ⇒ Click the button "End TS!" to proceed					✓	
14	Z010999MCVT101_IST_MODE_TRANSITION The MODE TRANSITION MASTER SEQUENCE is asking to configure ACMS in SAM by overriding Separation flag ⇒ Perform Steps 15 to 19					✓	
15	A102109SPVT003_ACMS_CONFIG25 In Main Menu 1.0 INIT PHASE At the prompt "Enter your choice", insert "88" to select "Continue to menu 3.0 SEPARATION" ⇒ Click the button "OK" to proceed					✓	
16	A102109SPVT003_ACMS_CONFIG25 ⇒ Click the button "Continue" to proceed					✓	
17	A102109SPVT003_ACMS_CONFIG25 In the Main Menu 3.0 SEPARATION EVENT At the prompt "Enter your choice", insert "1" to select "SEPARATION (Set ACC Separation Override Flag)" ⇒ Click the button "OK" to proceed					✓	

Test location: <i>BSC/TC</i>	Operator: <i>Jell</i>	Product-Assurance: <i>D. LAMONBY</i>	Date: <i>30-4-2008</i>
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Step 20

X-ZD10999MCVT153 IST STATUS.tcl

Result File: /HPCCS/VARIABLE/RESULTS/2008_04_30_03_32_hercdms_hpws22_REALTIME_MODE_TRANS/SEQ/ZD080430_050924_0070_ZD10999MCVT101_IST_MODE_TRANSITIONS.log

```

2008.121.12.15.17.003034 Repeat TM - to acquire again the parameters and to repeat the checks.
2008.121.12.15.17.030149 Continue - to continue the Test Sequence execution.
2008.121.12.15.17.056891 Abort - to abort the Test Sequence execution.
2008.121.12.15.17.948657 User has chosen to continue the test
2008.121.12.15.19.982337 checkCDMS_MODE SAM - SAM
2008.121.12.15.20.037745 checkCDMS_TM_OBT A - A
2008.121.12.15.20.064883 checkCDMS_PMSW_AIN[B1N] - AIN[B1N]
2008.121.12.15.20.105586 checkCDMS_SCBP A-5 - A-5
2008.121.12.15.20.132104 checkCDMS_MTL Stopped - Stopped
2008.121.12.15.20.158581 checkCDMS_FDIR AFS - AFS
2008.121.12.15.20.184961 checkCDMS_SrvCBH N only - N only
2008.121.12.15.20.211457 checkCDMS_LaunchStraps not separated - not separated
2008.121.12.15.20.238044 checkHPS all N - all N
2008.121.12.15.20.264492 checkPCDU_IF A - IF A
2008.121.12.15.20.291019 checkBAT charged - charged
2008.121.12.15.20.317521 checkPowerDomain BAT - BAT
2008.121.12.15.20.343911 checkSSMM_lBank (no1) - lBank (no1)
2008.121.12.15.20.370262 checkTTC_RxRate 4kbps - Rx1:4kbps Rx2:4kbps
2008.121.12.15.20.396594 checkTTC_TM_Rate 5kbps+RNG - 5kbps+RNG
2008.121.12.15.20.423114 checkTTC_TxChain T1 A A LGA1 - T1 A A LGA1
2008.121.12.15.20.449669 checkCCU_STATUS A,B ON HK 8s - A,B ON HK 8s-- No check in Low Rate
2008.121.12.15.20.476975 checkSPIRE OFF - OFF
2008.121.12.15.20.505727 checkHIFI OFF - OFF
2008.121.12.15.20.532645 checkPACS OFF - OFF
2008.121.12.15.20.559397 checkACMS_Mode SAM PT CS - SAM PT CS
2008.121.12.15.20.585851 checkACMS_BUS A - A
2008.121.12.15.20.612341 checkACMS_PMSW_AIN[B1S] - AIN[B1S]
2008.121.12.15.20.653868 checkACMS_CRS 1A,2S - 1A,2S
2008.121.12.15.20.697751 checkACMS_FDIR AFS - AFS
2008.121.12.15.20.738463 checkACMS_GYROS A,B,C IF 1 ON - A,B,C IF 1 ON
  
```

Satellite Status in test case 5.8.5.5

CDMS	
MODE	SAM
TM/OBT	A
PM&SW	AIN[B1N]
SCBP/MTL	A-5 / Stopped
FDIR/srvCBH	AFS / N only
Launch Straps	not separated

Power	
PCDU/HPS	IF A / all N
Battery	charged
Power Domain	BAT

SSMM	
Mass Memory	lBank (no1)

TTC	
note	RFDN = BBBB
RxRate	Rx1:4kbps Rx2:4kbps
TIME/Tx Rate	5kbps+RNG
TxChain	T1 A A LGA1
Rx1Ant	LGA1
Rx2Ant	LGA2

Instruments	
CCU	A,B ON HK 8s-- No ch
SPIRE	OFF
HIFI	OFF
PACS	OFF

ACMS	
MODE	SAM PT CS
Bus/PM&SW	A / AIN[B1S]
CRS/FDIR	1A,2S / AFS
GYROs	A,B,C IF 1 ON
STRs	OFF LCL ON
RWLs	OFF LCL ON
LV enable	A ON B OFF
RCS enable	A CBH-T ON-- No chec

Monitoring	
SREM	OFF
VMC	ON image strd

GSE support

Power Source	BS	TC Source	UMB 4k VCO	ENV simulator	responder closed loop
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OK!

step 20

Telemetry Desktop

Displays: File Select Config ... Print ... Resize Close List 9 1 2 4 9 Subwindow Filter: ENABLED

DS: 65535 2008.121.12.16.01.164 << < < STOP > > >> LIVE RETR...

SAT NIMICS DISPLAY 65296 65535 THTC DFE HK 3007 2008.121.12.15.57.884

Herschel Satellite Overview

TT&C
Tx chain: T.1 A.A
Rx1 Ant.: LGA1
Rx2 Ant.: LGA2/3
TM Rate: 5 Kbps
Rx1 Rate: 4 Kbps
Rx2 Rate: 4 Kbps

SCOE OFFLINE
I bat.: 12.82 A

PCDU
Heaters: TCT, LCLs, TCS
SAS Vnom: 28.19 V
SAS Vred: 28.15 V

SPIRE
SPIRE A: OFF
SPIRE B: OFF

HIFI
HIFI A: OFF
HIFI B: OFF

PACS
PACS A: OFF
PACS B: OFF

CDMS
cold: 38.52, 38.00
hot: 32.61, 30.21

ACMS
cold: 38.04, 38.00
hot: 28.93, 31.17

RCS
RCS A: 2.44, 0.05
RCS B: 0.08, 0.08

SSMM
Bank 0: 3, 0, 1, 2
Bank 1: 3, 0, 1, 2

Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
18	A102109SPVT003_ACMS_CONFIG25 ⇒ Click the button "Continue" to proceed					✓	
19	A102109SPCT034_ACMS_SAM_MON At the prompt : "Do you want to continue to monitor" "SAM Sun Pointing mode" ⇒ Answer "No" and click the button "OK" to proceed	no				✓	
20	Z010999MCVT101_MODE_TRANSITIONS ⇒ Once A102109SPVT021_ACMS_ACC_SEPARA finished and ACMS configured in ACMS, click the button "OK" to proceed				RCSA Health Sts = Unhealthy → Recovered using PVS 2 was unable to find fault → continuing 12:33 Low Rate SAM		
21	Z010999MCVT101_MODE_TRANSITIONS At the prompt: "IST STATUS (5.8.5.5) AND EGSE (Separation)" ⇒ Click the button "Confirm " to proceed					✓	

SPR 504
PVS #2

Test location: <i>BSTEEL</i>	Operator: <i>Jeffrey</i>	Product-Assurance: <i>DUMONBY</i>	Date: <i>30-4-2008 12-4-2008</i>
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Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
22	Z010999MCVT153_STATUS_IST 5.8.5.5 At the prompt: "Do you want to stop and notice each failure?" ⇒ Click the button "YES" to proceed					✓	
23	Z010999MCVT153_STATUS_IST 5.8.5.5 ⇒ Click the button "OK" to proceed					✓	
24	Z010999MCVT101_MODE_TRANSITIONS At the prompt: "TRANSITION SAM TO SAM" ⇒ Click the button "Confirm " to proceed				SPR440/NC4160: accumulation Tm with inversed calibration curve	✓	
25	Z102999SCVT003_SREM_ACQ_START ⇒ Click the button "End TS!" to proceed					✓	
26	D102159SCVT216_ASED_TM_150_KBPS_IST ⇒ Click the button "End TS!" to proceed					✓	

Test location: <i>R/S/EC</i>	Operator <i>Jellner</i>	Product-Assurance: <i>D. LAMONBY</i>	Date: <i>30/04-2008</i>
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Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
27	<p>D102159SCVT162_IST_SAM_SAM</p> <p>⇒ Click the button "End TS!" to proceed</p> <p>Perform Operator Mode 25 for PACS and SPIRE and HIFI</p>					✓	
28	<p>Z010999MCVT101_MODE_TRANSITIONS</p> <p>At the prompt: "IST STATUS SPACECRAFT AND EGSE (5.8.5.6)"</p> <p>⇒ Click "Confirm " to proceed</p>					✓	
29	<p>Z010999MCVT153_STATUS_IST 5.8.5.6</p> <p>At the prompt: "Do you want to stop and notice each failure?"</p> <p>⇒ Click the button "YES" to proceed</p>					✓	
30	<p>Z010999MCVT153_STATUS_IST 5.8.5.6</p> <p>⇒ Click the button "Ok" to proceed</p>						
31	<p>Z010999MCVT101_MODE_TRANSITIONS</p> <p>At the prompt: "TRANSITION SAM TO NOM"</p> <p>⇒ Click the button "Confirm " to proceed</p>						

pvs #3 →

to be performed later Operator Notices

SPA 465 recurrence

Stop here 1 PVS ✓ No 4 executed

Mode Transition skipped 14:34
Continued with IST-END

NCR 4176 raised!

Test location: ESTEC	Operator: C. Mueh	Product-Assurance: D. LAMONBY	Date: 30.4.08 14:35
--------------------------------	-----------------------------	---	-------------------------------

Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
32	D102159SCVT216_ASED_TM_150_KBPS_IST ⇒ Click the button "End TS!" to proceed						
33	A102109SPVT036_ACMS_STR_ON At the prompt: "Do you want to Change the current STR in use?" ⇒ Answer "no" and click the button "OK" to proceed	no					
34	A102109SPVT036_ACMS_STR_ON At the prompt: "Do you want STR-2 ON in SBY Mode ?" Answer "no" and click the button "OK" to proceed	no					
35	Z010999MCVT101_IST_MODE_TRANSITION The MODE TRANSITION MASTER SEQUENCE is asking to configure ACMS in OCM Mode ⇒ Perform the 3 following Steps						

Test location:	Operator	Product-Assurance:	Date:
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Step-No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
36	<p>A102109SPVT003_ACMS_CONFIG25 In Main Menu 4.0 SAM PHASE At the prompt "Enter your choice", insert "6" to select "Transition to OCM"</p> <p>⇒ Click the button "OK" to proceed</p>						
37	<p>A102109SPVT003_ACMS_CONFIG25</p> <p>⇒ Click the button "Continue" to proceed</p>						
38	<p>A102109SPVT036_ACMS_STR_ON At the prompt: "Do you want to Change the current STR in use?"</p> <p>⇒ Kill this sequence to proceed</p>			no	Info: STR is already ON in step 32, this is a workaround solution		
39	<p>Z010999MCVT101_MODE_TRANSITIONS</p> <p>⇒ Once A102109SPVT043_TRANSITION_TO_OCM is finished and ACMS is configured in OCM Mode, click the button "OK" to proceed</p>				FCV Duty Cycle Failed		

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Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
40	D102159SCVT164_IST_MM_SAM_NOM ⇒ Click the button "End TSI!" to proceed						
41	Z010999MCVT101_IST_MODE_TRANSITION The MODE TRANSITION MASTER SEQUENCE is asking to configure ACMS in SCM Mode ⇒ Perform the 4 following Steps						
42	A102109SPVT003_ACMS_CONFIG25 In Main Menu 7.0 OCM PHASE At the prompt "Enter your choice", insert "3" to select "Transition to SCM" ⇒ Click the button "OK" to proceed						
43	A102109SPVT003_ACMS_CONFIG25 ⇒ Click the button "Continue" to proceed						

Test location:	Operator	Product-Assurance:	Date:
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Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
44	<p>A102109SPVT038_RWL_ON At the prompt: “Do you want to change the actual onboard” “wheel s selected in the nominal configuration?” The 4 RWLs are expected to be set as real and selected</p> <p>⇒ Click the button “No” to proceed</p>	no					
45	<p>A102109SPVT042_RWL_SPINUP At the prompt “Do you want to change“ “the actual Angular momentum” “to be commanded to the wheel “ “selected in the UDC parameter?”</p> <p>⇒ Answer “No” and click the button “OK” to proceed</p>	no					
46	<p>A102109SPVT042_RWL_SPINUP</p> <p>⇒ Click the button “End TS” to proceed</p>						

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Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
47	Z010999MCVT101_MODE_TRANSITIONS ⇒ once A102109SPVT003ACMS_CONFIG25 set in Main Menu 5.0 and ACMS configured in SCM Mode, click the button "OK" to proceed						
48	Z010999MCVT101_MODE_TRANSITIONS At the prompt: "IST STATUS SPACECRAFT AND EGSE (5.8.5.7)" ⇒ Click the button "Confirm" to proceed						
49	Z010999MCVT153_STATUS_IST 5.8.5.7 At the prompt: "Do you want to stop and notice each failure?" ⇒ Click the button "YES" to proceed	yes					
50	Z010999MCVT153_STATUS_IST 5.8.5.7 ⇒ Click the button "Ok" to proceed						

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Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
51	<p>Z010999MCVT101_MODE_TRANSITIONS</p> <p>Reply to the prompt: "TRANSITION NOM TO NOM"</p> <p>⇒ Click the button "Confirm" to proceed</p>						
52	<p>Z010999MCVT101_MODE_TRANSITIONS</p> <p>Reply to the prompt: "Switching ON HIFI ICU in Stand-By Please refer to procedure HP-2-ASED-TP-0206"</p> <p>⇒ Click the button "Confirm" to proceed</p>						
53	<p>Z010999MCVT101_MODE_TRANSITIONS</p> <p>Reply to the prompt: "Switching ON SPIRE in Stand-By Please refer to procedure HP-2-ASED-TP-0206"</p> <p>⇒ Click the button "Confirm" to proceed</p>						
54	<p>Z010999MCVT101_MODE_TRANSITIONS</p> <p>Reply to the prompt: "Switching ON PACS in Stand-By Please refer to procedure HP-2-ASED-TP-0206"</p> <p>⇒ Click the button "Confirm" to proceed</p>						

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Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
55	D102159SCVT202_IST_MTL_PING_TEST ⇒ Click the button "End TS!" to proceed						
56	Z010999MCVT101_MODE_TRANSITIONS Reply to the prompt: " Switching PACS in Spectro Mode and enable Real Time science downlink Please refer to procedure HP-2-ASED-TP-0206 " ⇒ Click the button "Confirm" to proceed						
57	Z102999SCVT002_SREM_OFF ⇒ Click the button "End TS!" to proceed				SPR440/NC4160: accumulation Tm with inversed calibration		
58	D102159SCVT161_IST_MM_NOM_NOM ⇒ Click the button "End TS!" to proceed						
59	Z010999MCVT101_MODE_TRANSITIONS At the prompt: " IST STATUS SPACECRAFT AND EGSE (5.8.5.8) " ⇒ Click the button "Confirm" to proceed						

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Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
60	Z010999MCVT153_STATUS_IST 5.8.5.8 At the prompt: "Do you want to stop and notice each failure?" ⇒ Click the button "OK" to proceed						
61	Z010999MCVT153_STATUS_IST 5.8.5.8 ⇒ Click the button "Ok" to proceed						
62	Z010999MCVT101_MODE_TRANSITIONS At the prompt: "TRANSITION NOM TO EAM Part 1" ⇒ Click the button "Confirm" to proceed						
63	Z102999SCVT003_SREM_ACQ_START ⇒ Click the button "End TS!" to proceed						
64	D102159SCVT167_IST_MM_NOM_EAM ⇒ Click the button "End TS!" to proceed				NCR 4129: PACS OFF		

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Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
65	Z010999MCVT101_MODE_TRANSITIONS At the prompt: “IST STATUS SPACECRAFT AND EGSE” “(5.8.5.9a, EAM intermediate state)” ⇒ Click the button “Confirm” to proceed						
66	Z010999MCVT153_STATUS_IST 5.8.5.9a At the prompt: “Do you want to stop and notice each failure?” ⇒ Click the button “YES” to proceed						
67	Z010999MCVT153_STATUS_IST 5.8.5.9a ⇒ Click the button “OK” to proceed						
68	Z010999MCVT101_MODE_TRANSITIONS At the prompt: “TRANSITION NOM TO EAM Part 2:” “GROUND SETTINGS FOR EARTH MODE” ⇒ Click the button “Confirm” to proceed						

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Perform Operator Note 2'S Per PACS and STIRF and HIFI

Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
69	Z010999MCVT101_MODE_TRANSITIONS At the prompt: "IST STATUS SPACECRAFT AND EGSE" "(5.8.5.9b, EAM final state)" ⇒ Click the button "Confirm" to proceed						
70	Z010999MCVT153_STATUS_IST 5.8.5.9b At the prompt: "Do you want to stop and notice each failure?" ⇒ Click the button "YES" to proceed						
71	Z010999MCVT153_STATUS_IST 5.8.5.9b ⇒ Click the button "Ok" to proceed						
72	Z010999MCVT101_MODE_TRANSITIONS At the prompt: "TRANSITION EARTH TO EARTH" ⇒ Click the button "Confirm" to proceed						

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Step-No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
73	<p>Z010999MCVT101_MODE_TRANSITIONS</p> <p>At the prompt: “By step calling sequence Z102999SCVT008_ASDGEN_SPIRESTBY2OPS click confirm”</p> <p>⇒ Click the button “Confirm” to proceed</p>						
74	<p>S102999SCVT911_ASDBGSPIR_STBY2OPS</p> <p>At the prompt: “Command SPIRE from READY to OPS mode ” “in any conditions. Select NO to abort TS if not correct”</p> <p>⇒ Click the button “YES” to proceed</p>						
75	<p>Z010999MCVT101_MODE_TRANSITIONS</p> <p>At the prompt “Once SPIRE set in Science Mode and its science data TM enabled in downlink, those science data are stored automatically inside directory /TMDUMP/ ???VC1.txt”</p> <p>⇒ Check the relative file in storing SPIRE data, and click the button “OK” to proceed</p>						
76	<p>D102159SCVT168_IJT_MM_EAM_EAM</p> <p>⇒ Click the button “End TS!” to proceed</p>						

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Perform Operator Note 23 for PACS, IPIR and HIFI.

Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
77	Z010999MCVT101_MODE_TRANSITIONS At the prompt: "IST STATUS SPACECRAFT AND EGSE (5.8.5.10)" ⇒ Click the button "Confirm" to proceed						
78	Z010999MCVT153_STATUS_IST 5.8.5.10 At the prompt: "Do you want to stop and notice each failure?" ⇒ Click the button "YES" to proceed						
79	Z010999MCVT153_STATUS_IST 5.8.5.10 ⇒ Click the button "Ok" to proceed						
80	Z010999MCVT101_MODE_TRANSITIONS At the prompt: TRANSITION EARTH TO NOM" ⇒ Click the button "Confirm" to proceed						

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Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
81	<p>Z010999MCVT101_MODE_TRANSITIONS</p> <p>At the prompt: "By step calling sequence Z102999SCVT008_ASDGEN_SPIRESTBY2OPS click confirm"</p> <p>⇒ Click the button "Confirm" to proceed</p>						
82	<p>S102999SCVT911_ASDBGSPIR_STBY2OPS</p> <p>At the prompt: "Command SPIRE from READY to OPS mode " "in any conditions. Select NO to abort TS if not correct"</p> <p>⇒ Click the button "YES" to proceed</p>						
83	<p>Z010999MCVT101_MODE_TRANSITIONS</p> <p>At the prompt "Once SPIRE set in Science Mode and its science data TM enabled in downlink, those science data are stored automatically inside directory /TMDUMP/ ???VC1.txt"</p> <p>⇒ Check the relative file in storing SPIRE data, and click the button "OK" to proceed</p>						
84	<p>Z102999SCVT002_SREM_OFF</p> <p>⇒ Click the button "End TS!" to proceed</p>						

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Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
85	D102159SCVT169_IST_MM_EAM_NOM ⇒ Click the button "End TS!" to proceed				SPR441 reoccurence		
86	Z010999MCVT101_MODE_TRANSITIONS At the prompt: "IST STATUS SPACECRAFT AND EGSE (5.8.5.11)" ⇒ Click the button "Confirm" to proceed						
87	Z010999MCVT153_STATUS_IST 5.8.5.11 At the prompt: "Do you want to stop and notice each failure?" ⇒ Click the button "YES" to proceed						
88	Z010999MCVT153_STATUS_IST 5.8.5.11 ⇒ Click the button "OK" to proceed						
89	Z010999MCVT101_MODE_TRANSITIONS At the prompt: "TRANSITION NOM TO SM" ⇒ Click the button "Confirm" to proceed						

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Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
90	Z102999SCVT003_SREM_ACQ_START ⇒ Click the button "End TS!" to proceed				NCR4160/SPR440		
91	D102159SCVT170_IST_MM_NOM_SM At the prompt "Some TCS table entries shall be verified with respect to default value. The modification shall be harmless if this procedure shall be repeated in TBTv, but may be smaller than 1° when change remain observable" ⇒ Click the button "OK" when TCS table entries are correctly set.						
92	D102159SCVT170_IST_MM_NOM_SM At the prompt: "Set UPLINK operation in RF on LGA1 at 125 bps" ⇒ Click the button "Confirm" to proceed						

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Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
93	D102159SCVT170_IST_MM_NOM_SM At the prompt: "Do you want to execute the workaround calling D102159SCVT003DISTHERMALCONTROL?" ⇒ Click the button "No" to proceed						
94	D102159SCVT170_IST_MM_NOM_SM ⇒ Click the button "End TS" to proceed				SPR477 STR! <i>only by...</i> unavailable		
95	Z010999MCVT101_MODE_TRANSITIONS At the prompt: "IST STATUS SPACECRAFT AND EGSE (5.8.5.12)" ⇒ Click the button "Confirm" to proceed						
96	Z010999MCVT153_STATUS_IST 5.8.5.12 At the prompt: "Do you want to stop and notice each failure?" ⇒ Click the button "YES" to proceed						

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Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
102	D102159SCVT176_WRITE_CROME ⇒ Click the button "End TS!" to proceed						
103	D102159SCVT171_IST_MM_SM_SM At the prompt "Set UPLINK operation in RF on LGA1 at 125 bps" ⇒ Click the button "Confirm" to proceed						
104	D102159SCVT171_IST_MM_SM_SM At the prompt Do you want to execute the workaround calling the sequence D102159SCVT003DISTHERMALCONTROL? ⇒ Click the button "NO" to proceed						
105	D102159SCVT171_IST_MM_SM_SM ⇒ Click the button "End TS!" to proceed						

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Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
106	Z010999MCVT101_MODE_TRANSITIONS At the prompt: "IST STATUS SPACECRAFT AND EGSE (5.8.5.13)" ⇒ Click the button "Confirm" to proceed						
107	Z010999MCVT153_STATUS_IST 5.8.5.13 At the prompt: "Do you want to stop and notice each failure?" ⇒ Click the button "YES" to proceed						
108	Z010999MCVT153_STATUS_IST 5.8.5.13 ⇒ Click the button "OK" to proceed						
109	Z010999MCVT101_MODE_TRANSITIONS Operator Info: Waiting 15 mn to recover all data in 500bps						
110	Z010999MCVT101_MODE_TRANSITIONS At the prompt: "TRANSITION SM to SAM" ⇒ Click the button "Confirm" to proceed						

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Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
111	D102159SCVT175_SET_SURV_REG Do you want to set survritsl=303F7 and with survBits2 = f70101 ? ⇒ Click "Continue" to proceed						
112	D102159SCVT175_SET_SURV_REG ⇒ Click the button "End TS!" to proceed						
113	D102159SCVT176_WRITE_CROME ⇒ Click the button "End TS!" to proceed						
114	Z010999MCVT153_STATUS_IST 5.8.5.14 At the prompt: "Do you want to stop and notice each failure?" ⇒ Click the button "YES" to proceed						

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Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
115	Z010999MCVT153_STATUS_IST 5.8.5.14 ⇒ Click the button "OK" to proceed						
116	D102159SCVT174_IST_REDUNDANT_CONF ⇒ Click the button "End TS!" to proceed						
117	Z010999MCVT101_MODE_TRANSITIONS "PREPARATION for EAM to SAM" ⇒ Click the button "Confirm " to proceed						
118	Z010999MCVT101_IST_MODE_TRANSITION The MODE TRANSITION MASTER SEQUENCE is asking to configure ACMS in OCM Mode Perform the 4 following Steps						

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Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
119	A102109SPVT003_ACMS_CONFIG25 In Main Menu 4.0 SAM PHASE At the prompt "Enter your choice", insert "6" to select "Transition to OCM" ⇒ Click the button "OK" to proceed						
120	A102109SPVT003_ACMS_CONFIG25 ⇒ Click the button "Continue" to proceed						
121	A102109SPVT036_ACMS_STR_ON At the prompt: "Do you want to Change the current STR in use?" ⇒ Answer No to proceed	no					
122	A102109SPVT036_ACMS_STR_ON At the prompt: "Do you want STR-2 ON in SBY Mode ?" ⇒ Answer "no" and click the button "OK" to proceed	no					

Test location:	Operator	Product-Assurance:	Date:
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Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
123	<p>Z010999MCVT101_MODE_TRANSITIONS</p> <p>⇒ Once A102109SPVT043_TRANSITION_TO_OCM is finished and ACMS is configured in OCM Mode, click the button "OK" to proceed</p>						
124	<p>D102159SCVT164_IST_MM_SAM_NOM</p> <p>⇒ Click the button "End TS!" to proceed</p>						
125	<p>Z010999MCVT101_IST_MODE_TRANSITION</p> <p>The MODE TRANSITION MASTER SEQUENCE is asking to configure ACMS in SCM Mode Perform the 5 following Steps</p>						
126	<p>A102109SPVT003_ACMS_CONFIG25</p> <p>In Main Menu 7.0 OCM PHASE At the prompt "Enter your choice", insert "3" to select "Transition to SCM"</p> <p>Click the button "OK" to proceed</p>						

Test location:	Operator	Product-Assurance:	Date:
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Step-No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
127	<p>A102109SPVT003_ACMS_CONFIG25</p> <p>⇒ Click the button "Continue" to proceed</p>						
128	<p>A102109SPVT038_RWL_ON</p> <p>At the prompt:</p> <p style="text-align: center;">"Do you want to change the actual onboard" "wheel s selected in the nominal configuration?"</p> <p>The 4 RWLs are expected to be set as real and selected</p> <p>⇒ Click No to proceed</p>	no					
129	<p>A102109SPVT042_RWL_SPINUP</p> <p>At the prompt</p> <p style="text-align: center;">"Do you want to change" "the actual Angular momentum" "to be commanded to the wheel " "selected in the UDC parameter?"</p> <p>⇒ Answer "No" and click the button "OK" to proceed</p>	no					
130	<p>A102109SPVT042_RWL_SPINUP</p> <p>⇒ Click the button "End TS" to proceed</p>						

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Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
131	Z010999MCVT101_MODE_TRANSITIONS ⇒ once A102109SPVT003ACMS_CONFIG25 set in Main Menu 5.0 and ACMS configured in SCM Mode, click the button "OK" to proceed						
132	Z010999MCVT101_MODE_TRANSITIONS Reply to the prompt: "Switching ON HIFI ICU in Stand-By Please refer to procedure HP-2-ASED-TP-0206" ⇒ Click the button "Confirm" to proceed						
133	Z010999MCVT101_MODE_TRANSITIONS Reply to the prompt: "Switching ON SPIRE in Stand-By Please refer to procedure HP-2-ASED-TP-0206" ⇒ Click the button "Confirm" to proceed						

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Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
134	Z010999MCVT101_MODE_TRANSITIONS Reply to the prompt: "Switching ON PACS in Stand-By Please refer to procedure HP-2-ASED-TP-0206" ⇒ Click the button "Confirm" to proceed						
135	D102159SCVT202_IST_MTL_PING_TEST ⇒ Click the button "End TS!" to proceed						
136	Z010999MCVT101_MODE_TRANSITIONS User Info>: WARNING HIFI as volunteer Instrument shall provide science data ⇒ Click OK to proceed						
137	D102159SCVT167_IST_MM_NOM_EAM ⇒ Click the button "End TS!" to proceed						

* Perform operator note 2'S for ABCP recovery

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Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
138	Z010999MCVT101_MODE_TRANSITIONS At the prompt: "IST STATUS SPACECRAFT AND EGSE (5.8.5.17a)" ⇒ Click the button "Confirm" to proceed						
139	Z010999MCVT153_STATUS_IST 5.8.5.17a At the prompt: "Do you want to stop and notice each failure?"	yes					
140	Z010999MCVT153_STATUS_IST 5.8.5.17a ⇒ Click the button "Ok" to proceed						
141	Z010999MCVT101_MODE_TRANSITIONS At the prompt: "TRANSITION EAM to SAM" ⇒ Click the button "Confirm" to proceed						
142	D102159SCVT173_IST_MM_EAM_SAM ⇒ Click the button "End TS!" to proceed						

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Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
143	Z010999MCVT153_STATUS_IST 5.8.5.17 At the prompt: “Do you want to stop and notice each failure?” ⇒ Click the button “YES” to proceed						
144	Z010999MCVT153_STATUS_IST 5.8.5.17 ⇒ Click the button “OK” to proceed						
145	Z010999MCVT101_MODE_TRANSITIONS Operator Info: Waiting 15 mn to recover all data in 500bps						
146	Z010999MCVT101_MODE_TRANSITIONS At the prompt: “PREPARATION for NOM to SAM” ⇒ Click the button “Confirm” to proceed						
147	D102159SCVT164_IST_MM_SAM_NOM ⇒ Click the button “End TS!” to proceed						

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Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
148	<p>Z010999MCVT101_MODE_TRANSITIONS</p> <p>The MODE TRANSITION MASTER SEQUENCE is asking to configure ACMS in SAM Mode ⇒ Perform the 4 following Steps</p>						
149	<p>A102109SPVT003_ACMS_CONFIG25</p> <p>In Main Menu 5.0 SCM PHASE At the prompt "Enter your choice", insert "4" to select "Transition to SAM"</p>						
150	<p>A102109SPVT003_ACMS_CONFIG25</p> <p>⇒ Click the button "Continue" to proceed</p>						
151	<p>Z010999MCVT101_MODE_TRANSITIONS</p> <p>⇒ once ACMS configured in SAM Mode, click the button "OK" to proceed</p>						

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Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
152	Z010999MCVT101_MODE_TRANSITIONS Reply to the prompt: “Switching ON HIFI ICU in Stand-By Please refer to procedure HP-2-ASED-TP-0206” ⇨ Click the button “Confirm” to proceed						
153	Z010999MCVT101_MODE_TRANSITIONS Reply to the prompt: “Switching ON SPIRE in Stand-By Please refer to procedure HP-2-ASED-TP-0206” ⇨ Click the button “Confirm” to proceed						
154	Z010999MCVT101_MODE_TRANSITIONS Reply to the prompt: “Switching ON PACS in Stand-By Please refer to procedure HP-2-ASED-TP-0206” Click the button “Confirm” to proceed						

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Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
155	Z010999MCVT101_MODE_TRANSITIONS Reply to the prompt: "Switching PACS from STANDBY to BURST MODE Please refer to procedure HP-2-ASED-TP-0206" Click the button "Confirm" to proceed						
156	Z010999MCVT101_MODE_TRANSITIONS At the prompt: "IST STATUS SPACECRAFT AND EGSE (5.8.5.18a)" ⇒ Click the button "Confirm" to proceed						
157	Z010999MCVT153_STATUS_IST 5.8.5.18a At the prompt: "Do you want to stop and notice each failure?" ⇒ Click the button "YES" to proceed						
158	Z010999MCVT153_STATUS_IST 5.8.5.18a ⇒ Click the button "OK" to proceed						

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Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
159	Z010999MCVT101_MODE_TRANSITIONS At the prompt: "TRANSITION for NOM to SAM"						
160	D102159SCVT164_IST_MM_NOM_SAM ⇒ Click the button "End TS!" to proceed						
161	Z010999MCVT101_MODE_TRANSITIONS At the prompt: "IST STATUS SPACECRAFT AND EGSE (5.8.5.18)" ⇒ Click the button "Confirm" to proceed						
162	Z010999MCVT153_STATUS_IST 5.8.5.18 At the prompt: "Do you want to stop and notice each failure?" ⇒ Click the button "YES" to proceed						
163	Z010999MCVT153_STATUS_IST 5.8.5.18 ⇒ Click the button "OK" to proceed						

⊛ Perform operator note 28 "for OBC recovery"

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Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
164	Z010999MCVT101_MODE_TRANSITIONS Operator Info: Waiting 15 mn to recover all data in 500bps						
165	Z010999MCVT101_MODE_TRANSITIONS ⇨ Click "End Ts!"						

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8 Summary Sheets

Procedure Variation Summary

	Test Change	Curr. No.: # 1	Date 30-4-2008
		Page 1	of
Test designation MODE TRANSITIONS	Test Procedure TP-0189	Issue 2	Rev. -
Test step changed INSERT AFTER STEP 7	Reason for Change ADDITIONAL TEST STEP TO BE INCORPORATED		
<p>D102159SCVT216_ASED_TM_150_KBPS_1ST</p> <p>Click the button 'OK' to proceed.</p>			
Prepared by: <i>[Signature]</i>	Resp. Test Leader: <i>[Signature]</i>	Project Engineer	
PA/QA D. LAMONBY	Prime	Customer	

Procedure Variation Summary

	Test Change	Curr. No.: # 2	Date 30-4-2008
		Page 1	of 4
Test designation MODE TRANSITIONS	Test Procedure TP-0189	Issue 2	Rev. -
Test step changed 20	Reason for Change CORRECT UNHEALTHY RCS BRANCH		
<p style="text-align: center;">S.8.5.5. LAUNCH TO SAM</p> <p>After ACMS Command TC 'force separation' and re-enabling ACMS RM an xxx alarm S.4. RCS branch ^{detected} unhealthy</p> <p>Therefore we sent the command:</p> <ul style="list-style-type: none"> • RCS ^{healthy} 1 SCMA B (ACYS2109) <p>* THIS COMMAND DOES NOT WORK #</p> <p>The alarm S.4 RCS branch still reports 'unhealthy'!</p> <ul style="list-style-type: none"> • Close Latch Valve B to see if we can command Valve ACF1001 (Fire Critical Command) ACZB4109 (RCS-B LV CLOSE) • Repeat the commands above after STR + VCE reboot <ul style="list-style-type: none"> - close latch valve B - RCS1 healthy SCMA B <p>This fails again SPR 504 RAISED</p>			
Prepared by:	Resp. Test Leader <i>C. Muck</i>	Project Engineer	
PA/QA D. LAMONBY	Prime <i>[Signature]</i>	Customer	

Procedure Variation Summary

	Test Change	Curr. No.: # 2	Date 30-4-2008
		Page 2	of 4
Test designation MODE TRANSITIONS	Test Procedure TP-0189	Issue 2	Rev. -
Test step changed 20	Reason for Change		
<p><u>Send the following TC's:</u></p> <ul style="list-style-type: none"> - Ext - HCCRM-A Disable DCM 22170 - Ext - HCCRM-B Disable DCM 25170 - PM A Reset #CY 42109 - Ext - HCCRM-A Enable DCM 21170 - Ext - HCCRM-B Enable DCM 29170 <p>Performed action A2 & A5 from operator Note 4, "ACMS SCOE How to"</p> <p>- HCMS + STRUCE switch off and on again</p>			
Prepared by:	Resp. Test Leader <i>C. Mich</i>	Project Engineer	
PA/QA D. LAMONBY	Prime <i>[Signature]</i>	Customer	

Procedure Variation Summary

	Test Change	Curr. No.: #2	Date 30-4-2008
		Page 3	of 4
Test designation MODE TRANSITIONS	Test Procedure TP-0189	Issue 2	Rev. -
Test step changed 20	Reason for Change		
<p><u>Sending TCLs</u></p> <ul style="list-style-type: none"> - RCS-#LV open [#CZB1109] - FIRE critical command - RCS1 healthy SCMA#B [#CYS2109] → RCS branch again unhealthy - RCS1 healthy SCMA#B [#CYS2109] → SHM Henschel - Fire critical command ⇒ command end in execution error → PHH Reset - RCS-#LV open [#CZB1109] - Fire critical command [#CF1001] - RCS1 healthy SCMA#B - PHH Reset 			
Prepared by:	Resp. Test Leader <i>C. Much</i>	Project Engineer	
PA/QA D. LAMONBY	Prime <i>[Signature]</i>	Customer	

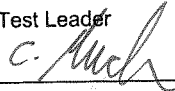

Procedure Variation Summary

	Test Change	Curr. No.: <u>2</u>	Date <u>30-4-2008</u>
		Page <u>4</u>	of <u>4</u>
Test designation MODE TRANSITIONS	Test Procedure TP-0189	Issue <u>2</u>	Rev. <u>-</u>
Test step changed <u>20</u>	Reason for Change		
<p><u>Sending TC's</u></p> <p>RCS- #LVopen [#CZB1109] + Fire critical command</p> <p>Ext- #CC RM-A Enable [#CH24170]</p> <p>Ext- #CC RM-B Enable [#CH24170]</p> <p>TC31H LOW RHTE SHM</p>			
Prepared by:	Resp. Test Leader <i>C. Muck</i>	Project Engineer	
PA/QA D. LAMONBY	Prime <i>[Signature]</i>	Customer	

Procedure Variation Summary

	Test Change	Curr. No.: # 3	Date 30-4-2008
		Page 1	of
Test designation MODE TRANSITIONS	Test Procedure TP-0189	Issue	Rev.
Test step changed 27	Reason for Change <i>script problem</i>		
<p><i>Due to SPR 505</i></p> <p><i>the PHCS OBCPrecovery was performed manually following the procedure. "OP Note 29"</i></p>			
Prepared by:	Resp. Test Leader <i>C. Mueh</i>	Project Engineer	
PA/QA D. LAMONBY	Prime <i>[Signature]</i>	Customer	

Procedure Variation Summary

	Test Change	Curr. No.: 4	Date 30-4-2008
		Page 1	of
Test designation MODE TRANSITIONS	Test Procedure TP-0189	Issue	Rev.
Test step changed 29.	Reason for Change ACC in open loop detected (close expected)		
<p>1) Disable ACC RT with TCs DCA 25170 Disable RDB DCA 22170 Disable RPA. 1bis) Disable Node status check with TC: ACY87109 and ACFC001</p> <p>2) No override Status with TCs / ACSS1001 for PPA Set Separation Status ACZ82109 Firing. / ACSS1001 for RDB Set Separation Status ACZ82109 Firing.</p> <p>2bis) Close the separation step with TC: YC01B352 and SAS5002 attached</p> <p>3) Reset ACC PA: send TC: ACY62109.</p> <p>4) Override Status with TC: / ACSS1001 Set Separation Status ACZ82109 Firing</p> <p>5) Reenable both RM with TC DCA 21170 for Reenable RPA DCA 24170 for Reenable RDB</p>			
Prepared by: O. Martin	Resp. Test Leader 	Project Engineer	
PA/QA D. LAMONBY	Prime 	Customer	

8.3 Sign-off Sheet

To finalise the test campaign, all responsible personnel shall sign off the filled-in procedure in the following table:

	Date	Signature
Test Director	30-4-08	S. MCCOY
Test Conductor	30-4-08	C. MUGH
PA Responsible	30-4-08	E/L MOURY (L) GODSEWS (N) MOC G Diamondy

===== 5.8.5 MODE TRANSITIONS =====

```

|-----> Z010999MVCVT153_IST_STATUS 5.8.5.3
|-----|-----> ACMS_get_RM_status RMA
|-----|-----> ACMS_get_RM_status RMB
|-----> W102584SPVT102_PCDU_TRANSITION_MODE_TR 1
|-----> D102159SCVT086_LAUNCH_LAUNCH_IST
|-----> Z010999MVCVT153_IST_STATUS 5.8.5.4
|-----|-----> ACMS_get_RM_status RMA
|-----|-----> ACMS_get_RM_status RMB
|-----> D102159SCVT163_IST_MM_LAN_SAM
|-----|-----> D102159SCVT123_TM_LINK_150_KBPS
|-----|-----> Y102989ECVT006_TTC_DL_PORT_SET LGA1
|-----|-----|-----> Y102989ETVT019_TTC_SCOE_ACTIVITY
|-----|-----> Y102989ECVT006_TTC_DL_PORT_SET LGA1
|-----|-----|-----> Y102989ETVT019_TTC_SCOE_ACTIVITY
|-----> Z010999MMXX002UNITS_CHECK
|-----> Z010999MVCVT153_IST_STATUS 5.8.5.5
|-----|-----> ACMS_get_RM_status RMA
|-----|-----> ACMS_get_RM_status RMB
|-----> W102584SPVT102_PCDU_TRANSITION_MODE_TR 2
|-----> K102999ECVT001_ASDGENCCU_MnDBOTH2
|-----> K102999ECVT001_ASDGENCCU_MnEBOTH1
|-----> D102159SCVT162_IST_MM_SAM_SAM
|-----|-----> Z102999SCVT001_SREM_ON 60
|-----|-----|-----> Z102999SCVT003_SREM_ACQ_START $argv
|-----|-----> D102159SCVT123_TM_LINK_150_KBPS
|-----> Z010999MVCVT153_IST_STATUS 5.8.5.6
|-----|-----> ACMS_get_RM_status RMA
|-----|-----> ACMS_get_RM_status RMB
|-----> D102159SCVT123_TM_LINK_150_KBPS
|-----> W102584SPVT102_PCDU_TRANSITION_MODE_TR 3
|-----> D102159SCVT164_IST_MM_SAM_NOM
|-----|-----> Z010999MMXX002UNITS_CHECK
|-----> Z010999MVCVT153_IST_STATUS 5.8.5.7
|-----|-----> ACMS_get_RM_status RMA
|-----|-----> ACMS_get_RM_status RMB
|-----> D102159SCVT161_IST_MM_NOM_NOM
|-----|-----> Z102999SCVT002_SREM_OFF
|-----|-----> Z102999SCVT014_ASDGEN_HIFIPWRON_P
|-----|-----> Z102999SCVT004_ASDGEN_SPIREPWRON_P
|-----|-----|-----> S102999SCVT017_ASDGENSPIR_PWR_ON_P
|-----|-----|-----|-----> SPIRE-IST-DBG-OFF2DPUON-SP
|-----|-----|-----|-----> SPIRE-IST-DBG-DPUON2STBY
|-----|-----|-----|-----> SPIRE-IST-DBG-LOAD-VM-TABLES
|-----|-----|-----|-----> Z010999MMXX002UNITS_CHECK

```

```

|-----|-----> Z102999SCVT010_ASDGEN_PACSPWRON_P
|-----|-----> Z102999SCVT019_ASDGEN_PACSNomSpect
|-----|-----|-----> async P102999SCVT904_ASDDBGPACS_NomSpect
|-----|-----> D102159SCVT202_IST_MTL_PING_TEST_3_120
|-----> Z010999MCVT153_IST_STATUS_5.8.5.8
|-----|-----> ACMS_get_RM_status_RMA
|-----|-----> ACMS_get_RM_status_RMB
|-----> D102159SCVT167_IST_MM_NOM_EAM
|-----|-----> Z102999SCVT001_SREM_ON_60
|-----|-----|-----> Z102999SCVT003_SREM_ACQ_START_Sargv
|-----> Z010999MCVT153_IST_STATUS_5.8.5.9a
|-----|-----> ACMS_get_RM_status_RMA
|-----|-----> ACMS_get_RM_status_RMB
|-----> A102109SPVT087_ACMS_IST_FN_cir_5.8.5.9
|-----|-----> ACMS_get_RM_status_RMA
|-----|-----> ACMS_get_RM_status_RMB
|-----|-----> ACMS_event_buffer_dump_sgma
|-----|-----> ACMS_event_buffer_dump_sgmb
|-----> Z010999MCVT153_IST_STATUS_5.8.5.9b
|-----|-----> ACMS_get_RM_status_RMA
|-----|-----> ACMS_get_RM_status_RMB
|-----> A102109SPVT087_ACMS_IST_FN_5.8.5.10
|-----|-----> ACMS_get_RM_status_RMA
|-----|-----> ACMS_get_RM_status_RMB
|-----|-----> ACMS_event_buffer_dump_sgma
|-----|-----> ACMS_event_buffer_dump_sgmb
|-----> D102159SCVT168_IST_MM_EAM_EAM
|-----> Z010999MCVT153_IST_STATUS_5.8.5.10
|-----|-----> ACMS_get_RM_status_RMA
|-----|-----> ACMS_get_RM_status_RMB
|-----> A102109SPVT087_ACMS_IST_FN_5.8.5.11
|-----|-----> ACMS_get_RM_status_RMA
|-----|-----> ACMS_get_RM_status_RMB
|-----|-----> ACMS_event_buffer_dump_sgma
|-----|-----> ACMS_event_buffer_dump_sgmb
|-----> D102159SCVT169_IST_MM_EAM_NOM
|-----|-----> Z102999SCVT008_ASDGEN_SPIRESTBY2OPS
|-----|-----|-----> async S102999SCVT911_ASDDBGSPIR_STBY2OPS
|-----|-----|-----|-----> SPIRE-IST-DBG-STBY2OPS
|-----|-----> Z102999SCVT002_SREM_OFF
|-----> Z010999MCVT153_IST_STATUS_5.8.5.11
|-----|-----> ACMS_get_RM_status_RMA
|-----|-----> ACMS_get_RM_status_RMB
|-----> A102109SPVT087_ACMS_IST_FN_5.8.5.12
|-----|-----> ACMS_get_RM_status_RMA
|-----|-----> ACMS_get_RM_status_RMB
|-----|-----> ACMS_event_buffer_dump_sgma
|-----|-----> ACMS_event_buffer_dump_sgmb
|-----> D102159SCVT170_IST_MM_NOM_SM

```

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|-----|-----> Z102999SCVT001_SREM_ON 60
|-----|-----|-----> Z102999SCVT003_SREM_ACQ_START $argv
|-----|-----> K102999ECVT001_ASDGENCCU_MnDBOTH1
|-----|-----> K102999ECVT001_ASDGENCCU_MnEBOTH2
|-----|-----> D102159SCVT175_SET_SURV_REG 0x0202F7 0xF70101
|-----|-----> D102159SCVT003DISTHERMALCONTROL
|-----|-----> D102159SCVT123_TM_LINK_150_KBPS
|-----> Z010999MCMVT153_IST_STATUS 5.8.5.12
|-----|-----> ACMS_get_RM_status RMA
|-----|-----> ACMS_get_RM_status RMB
|-----> D102159SCVT171_IST_MM_SM_SM
|-----|-----> R102479ETVT011_RFDN_CONF_CHECK_TWTA A B B A
|-----|-----> H102999SCVT001_ASDBBGHIFI_PWR_ON_P
|-----|-----|-----> HIFIST_Startup_force_boot
|-----|-----|-----> HIFIST_Startup_OBS_SFT
|-----|-----|-----> HIFIST_Startup_FCU_on
|-----|-----|-----> HIFIST_Startup_WBS_lasertemp40
|-----|-----|-----> HIFIST_Startup_WBSH_on
|-----|-----|-----> HIFIST_Startup_WBSV_on
|-----|-----|-----> HIFIST_Startup_HRS_on
|-----|-----|-----> HIFIST_Startup_LCU_on
|-----|-----|-----> HIFIST_Startup_LCU_table_load
|-----|-----|-----> HIFIST_Startup_LCU_table_read
|-----|-----|-----> HIFIST_Startup_LO_Nominal
|-----|-----|-----> Z010999MMXX002UNITS_CHECK
|-----|-----> D102159SCVT175_SET_SURV_REG 0x77 0x770000
|-----|-----> D102159SCVT176_WRITE_CROME BA 1
|-----|-----> D102159SCVT003DISTHERMALCONTROL
|-----|-----> D102159SCVT123_TM_LINK_150_KBPS
|-----> Z010999MCMVT153_IST_STATUS 5.8.5.13
|-----|-----> ACMS_get_RM_status RMA
|-----|-----> ACMS_get_RM_status RMB
|-----> D102159SCVT172_IST_MM_SM_SAM
|-----|-----> D102159SCVT175_SET_SURV_REG 0x0202F7 0xF70101
|-----|-----> D102159SCVT176_WRITE_CROME AB 1
|-----|-----> D102159SCVT123_TM_LINK_150_KBPS
|-----|-----> R102479ETVT011_RFDN_CONF_CHECK_TWTA A B A B
|-----|-----> H102999SCVT001_ASDBBGHIFI_PWR_ON_P
|-----|-----|-----> HIFIST_Startup_force_boot
|-----|-----|-----> HIFIST_Startup_OBS_SFT
|-----|-----|-----> HIFIST_Startup_FCU_on
|-----|-----|-----> HIFIST_Startup_WBS_lasertemp40
|-----|-----|-----> HIFIST_Startup_WBSH_on
|-----|-----|-----> HIFIST_Startup_WBSV_on
|-----|-----|-----> HIFIST_Startup_HRS_on
|-----|-----|-----> HIFIST_Startup_LCU_on
|-----|-----|-----> HIFIST_Startup_LCU_table_load
|-----|-----|-----> HIFIST_Startup_LCU_table_read
|-----|-----|-----> HIFIST_Startup_LO_Nominal

```



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|-----|-----|-----> Z010999MMXX002UNITS_CHECK
|-----> Z010999MCVT153_IST_STATUS 5.8.5.14
|-----|-----> ACMS_get_RM_status RMA
|-----|-----> ACMS_get_RM_status RMB
|-----> D102159SCVT174_IST_REDUNDANT_CONF 0 0 A 0 0 0 0
|-----|-----> D102159SCVT104_ENCODER_SELECT $tmObt $tm_Enc_Config
|-----> D102159SCVT164_IST_SAM_NOM
|-----> D102159SCVT167_IST_NOM_EAM
|-----> D102159SCVT172_IST_MM_EAM_SAM
|-----> Z010999MCVT153_IST_STATUS 5.8.5.17
|-----|-----> ACMS_get_RM_status RMA
|-----|-----> ACMS_get_RM_status RMB
|-----> D102159SCVT164_IST_SAM_NOM
|-----> D102159SCVT177_IST_MM_NOM_SAM
|-----> Z010999MCVT153_IST_STATUS 5.8.5.18
|-----|-----> ACMS_get_RM_status RMA
|-----|-----> ACMS_get_RM_status RMB
|-----> Y102989ECVT001_TMTC_LINK TM SCPRI
|-----> Y102989ECVT001_TMTC_LINK TC TTC
|-----> R102479SPVT116_IST_DUMP_ON
|-----|-----> R102479ECVT006_XPND2_TC_1553 0 0 0 1 0 0 0 0 -4
|-----|-----> Y102989ECVT006_TTC_DL_PORT_SET MGA
|-----|-----|-----> Y102989ETVT019_TTC_SCOE_ACTIVITY
|-----|-----> R102479ECVT006_XPND2_TC_1553 0 0 1 0 0 0 0 0 -4
|-----|-----> Y102989ECVT001_TMTC_LINK BOTH TTC
|-----> Y102989ECVT001_TMTC_LINK BOTH SCPRI
|-----> Y102989ECVT001_TMTC_LINK BOTH SCPRI
|-----> Y102989ETVT020_TTC_SCOE_OFF
|-----|-----> Y102989ECVT018_TTC_TC_OP_METHOD OFFLINE
|-----|-----|-----> Y102989ETVT017_TTC_CHECK_ROUTINE
|-----|-----|-----> Y102989ETVT019_TTC_SCOE_ACTIVITY
|-----> Z010999MMXX002UNITS_CHECK
|-----> D102159SCVT126_LCL_OFF_BEF_SC_OFF
|-----> Z010999MMXX002UNITS_CHECK
|-----> K102999ECVT001_ASDGENCCU_MnDBOTH1
|-----> K102999ECVT001_ASDGENCCU_ABPWROFF
|-----|-----> K102999ECVT001_ASDGENCCU_MnDisDLC
|-----|-----> K102999ECVT001_ASDGENCCUB_POWEROFF
|-----|-----|-----> Z010999MMXX002UNITS_CHECK
|-----|-----> K102999ECVT001_ASDGENCCUA_POWEROFF
|-----|-----|-----> Z010999MMXX002UNITS_CHECK

```

10 Annex: Session Record

Test Description	MODE TRANSITIONS
Session ID	2008_04_30_03_32_herschelmv_REALTIME_MODE_TRAIN
Start Time:	03:32
End Time	14:35
CVS Tag for Test	
Applicable IST Specification	HP-2-ASED-SP-0939
Test conductor	C. MUCK
QA Approval	D. LAMONBY D. lamonby
Test Description	
Session ID	
Start Time:	
End Time	
CVS Tag for Test	
Applicable IST Specification	
Test conductor	
QA Approval	
Test Description	
Session ID	
Start Time:	
End Time	
CVS Tag for Test	
Applicable IST Specification	
Test conductor	
QA Approval	

END OF DOCUMENT

Insert actual distribution list

Step 3

X-ZD10999MVCVT153 IST STATUS.tcl

Result File: /HPCCS/VARIABLE/RESULTS/2008 04 30 03 32 hercdmdu hpwvs22_REALTIME_MODE_TRAN/TSEQ/20080430_050924_0070_ZD10999MVCVT153_IST_MODE_TRANSITIONS.log

```

2008 121 05 23 37 894554 Description: EiuTcRateConfig
2008 121 05 23 37 941875 Condition: [getrawvalue [fetch YM121946]] == "1"
2008 121 05 23 37 980755 TEST PASSED Value: 1 (0x0001 unsigned integer 32 bits)
2008 121 05 23 38 198906
2008 121 05 23 38 226905 Checking Telemetry YM17D946
2008 121 05 23 38 254754 Description: RemTCvirtualCh
2008 121 05 23 38 282729 Condition: [getrawvalue [fetch YM17D946]] == "0"
2008 121 05 23 38 310457 TEST PASSED Value: 0 (0x0 unsigned integer 8 bits)
2008 121 05 23 38 356940
2008 121 05 23 38 386419 =====
2008 121 05 23 38 414272 == IST STATUS 5.8.5.3 ==> testGSE_ENV_SIMULATOR stand-by ==
2008 121 05 23 38 442604 =====
2008 121 05 23 38 472883
2008 121 05 23 48 805177 TEST FAILED: No dynamic activated flag has been read
2008 121 05 23 48 892861 Press one of the following:
2008 121 05 23 48 966740 Repeat - to acquire again the parameters and to repeat the checks.
2008 121 05 23 48 995706 Continue - to continue the Test Sequence execution.
2008 121 05 23 49 023562 Abort - to abort the Test Sequence execution.
2008 121 05 24 20 799288 User has chosen to retry last action
2008 121 05 24 22 832860 actual value of requestId (alias dynActFlag): 0 0
2008 121 05 24 32 874497 TEST FAILED: No dynamic activated flag has been read
2008 121 05 24 32 945886 Press one of the following:
2008 121 05 24 33 012555 Repeat - to acquire again the parameters and to repeat the checks.
2008 121 05 24 33 039721 Continue - to continue the Test Sequence execution.
2008 121 05 24 33 066884 Abort - to abort the Test Sequence execution.
2008 121 05 24 53 713948 User has chosen to continue the test
2008 121 05 24 55 746976 actual value of requestId (alias dynActFlag): 0 0
2008 121 05 24 55 781326 checkCDMS_MODE launch - launch
2008 121 05 24 55 803444 checkCDMS_TM_OBT A - A
2008 121 05 24 55 825221 checkCDMS_PMSW A1N[BLN] - A1N[BLN]

```

←
← Retry

Satellite Status in test case 5.8.5.3

CDMS

MODE	launch
TM/OBT	A
PMSW	A1N[BLN]
SCBP/MIL	A-0 / stopped
FDIR/srvCBH	AFS / N only
Launch Straps	not separated

Power

PCDU/HPS	IF A ON / all N
Battery	charged BS
Power Domain	SA <6

SSMM

Mass Memory	1Bank (no1)
-------------	-------------

TTC

note	RFDN = AAAA
RxRate	Rx1:125bps Rx2:4kbps
TME/Tx Rate	150 kbps
TxChain	T1 RF OFF A OFF LCL
Rx1Ant	LGA1
Rx2Ant	LGA2

Instruments

CCU	A, B ON HK 8s
SPIRE	OFF
HIFI	OFF
PACS	OFF

ACMS

MODE	SBM pre sep
Bus/PM&SW	A / A1N[BLN]
GRS/FDIR	1A, 2S / AFS
GYROs	A, B, C IF 1 ON
STRs	OFF
RWLs	OFF
LV enable	OFF
RCS enable	OFF

Monitoring

SREM	OFF
VMC	OFF

GSE support

Power Source	SAS 6	TC Source	UMB 4k VCO	ENV simulator	!-spec stand-by
--------------	-------	-----------	------------	---------------	-----------------

←

OK!

ster3

Telemetry Desktop

Displays: File Select Config... Print... Resize Close List 0 1 2 4 9 Subwindow Filing: ENABLED

MIM.SAT
AND.YA001933
MIM.LCL_HERSCH
MIM.TTC_H_P
MIM.HEATERS
MIM.GEN_POWER

DS: 65535 2008.121.05.25.46.050

SAT MIMIDS DISPLAY 65296 65535 THTC DFE HK 633 2008.121.05.25.45.173

Herschel Satellite Overview

TT&C
Tx chain: OFF
Rx1 Ant.: LGA1
Rx2 Ant.: LGA2/3
TM Rate: 150 Kbps
Rx1 Rate: 125 bps
Rx2 Rate: 4 Kbps

SCOE OFFLINE
I bat.: 0.05 A

PCDU
Heaters: TCT
LCLs: TCS
IF1: ON (Nom.), ON (Red.)
IF2: OFF (Nom.), OFF (Red.)
AWWV

SAS
Battery: 25.41 V, Online
SAS Vnom: 28.18 V, Online
SAS Vred: 28.14 V
I bat.: 0.05 A

CCU
READY, YES, SREM, VMC
CCU A: AWWV, 0.16
CCU B: AWWV, 0.12

ACMS
ACC A: cold 37.52, hot 36.72
ACC B: hot 27.83, cold 29.93
PH A1N, RM A, PH B1N, RM B

RCS
RCS A: FCVA, LV A
RCS B: FCVB, LV B

SSMM
Bank 0: 3, 0
Bank 1: 0, 1
Bank 2: 1, 2
Bank 3: 2, 3

Launch Straps
1 2 3 4 5 6 7 8

Attachment 3 to Section 6.1.1:

As-Run Procedure HP-2-ASED-TP-0189

Title: **Herschel IST Test case "Mode Transitions" Procedure**

AS RUN COPY

DRY RUN (2nd) 30/04/08

CI-No: session id = 2008_04_30_16_50_hercedmu_hpws28
REALTIME_MDO_TRA_2

Prepared by:	Functional Team	Date:
Checked by:	C. Much <i>C. Much</i>	29/04/2008
Product Assurance:	J. Hall <i>J. Hall</i>	29/4/2008
Configuration Control:	W. Wietbrock	
TASF Engineering	G. Beaufiles <i>G. Beaufiles</i>	29/04/2008
TASF Test Director	S. Mooney <i>S. Mooney</i>	29/04/2008
Project Management:	Dr. W. Fricke <i>W. Fricke</i>	29/04/2008
Project Management	Denis Montet <i>D. Montet</i>	29.04.08

Distribution: See Distribution List (last page)

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Issue	Date	Sheet	Description of Change	Release
1	11.01.2008		Initial version for ambient condition, instruments are off	
2	29.04.2008		Initial version for He1 with instruments switched to simulated science mode	

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1 Scope

This Test Procedure contains the step by step procedure for the IST Test case "Mode Transitions". This specific test case is called from the IST Leading procedure which performs the start-up and shutdown of the satellite.

The leading procedure also contains the supporting definition of the relevant supporting infrastructure and pre test conditions required for the IST tests to be performed correctly.

1.1 Objective

This document shall act as the Step by Step procedure for the Herschel IST **Mode Transition test**, it will be performed in conjunction with the IST Leading Procedure HP-2-ASED-TP-0134, and will become the 'as run' procedure when executed, and shall be identified on the front sheet in 'Red' before start of test. A new 'as run' copy of the procedure shall be used for each test run, and will become a accurate history of the test performed. All activities will be recorded, with results obtained. Any anomalies found will be noted in the step by step section as they arise, and where applicable an SPR (Software Problem reports) will be raised.

1.2 Flow

See Herschel IST Procedure Leading Procedure HP-2-ASED-TP-0134

2 Documents

2.1 Applicable Documents

See Herschel IST Procedure Leading Procedure HP-2-ASED-TP-0134

2.2 Reference Documents

See Herschel IST Procedure Leading Procedure HP-2-ASED-TP-0134

2.3 Other Documents

See Herschel IST Procedure Leading Procedure HP-2-ASED-TP-0134

3 Requirements to be verified

See Herschel IST Procedure Leading Procedure HP-2-ASED-TP-0134

4 Configuration

4.1 Hardware Configuration

See Herschel IST Procedure Leading Procedure HP-2-ASED-TP-0134

4.2 SW Configuration

See Herschel IST Procedure Leading Procedure HP-2-ASED-TP-0134

4.3 SCOE Cables Connection

See Herschel IST Procedure Leading Procedure HP-2-ASED-TP-0134

5 Conditions

5.1 Personnel

See Herschel IST Procedure Leading Procedure HP-2-ASED-TP-0134

5.2 Environmental

See Herschel IST Procedure Leading Procedure HP-2-ASED-TP-0134

5.3 General Precautions and Safety

See Herschel IST Procedure Leading Procedure HP-2-ASED-TP-0134

6 Verification Requirements and Test Criteria

See Herschel IST Procedure Leading Procedure HP-2-ASED-TP-0134

7 IST Mode Transitions Step by Step Procedure

Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
1	<p>Z010999MCVT101_MODE_TRANSITIONS</p> <p>Reply to the prompt: "Start Herschel IST Mode Transitions 5.8.5"</p> <p>Click the button "Confirm" to proceed</p>					✓	
2	<p>Z010999MCVT101_MODE_TRANSITIONS</p> <p>Reply to the prompt: "IST STATUS (5.8.5.3)"</p> <p>⇒ Click the button "Confirm" to proceed</p>					✓	
3	<p>Z010999MCVT153_STATUS_IST 5.8.5.3</p> <p>At the prompt:</p> <p>"Do you want to stop and notice each failure?"</p> <p>⇒ Click the button "Yes" to proceed</p>	Yes				✓	
4	<p>Z010999MCVT153_STATUS_IST 5.8.5.3</p> <p>⇒ Click the button "OK" to proceed</p>					✓	

Test location: <i>ESTEC</i>	Operator: <i>O. Berlin</i>	Product Assurance: <i>R. Coossens</i>	Date: <i>30.06.08 18:40</i>
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Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
5	Z010999MCVT101_MODE_TRANSITIONS Reply to the prompt: "CONFIGURATION FOR TRANSITION: Launch to Launch" ⇒ Click the button to "confirm" to proceed					✓	
6	Z010999MCVT101_MODE_TRANSITIONS Reply to the prompt: "EXECUTION OF TRANSITION: Launch to Launch" ⇒ Click the button "Confirm" to proceed					✓	
7	D102159SCVT086_LAUNCH_LAUNCH_IST ⇒ Click the button "End TS !" to proceed					✓	
8	Z010999MCVT101_MODE_TRANSITIONS Reply to the prompt: "IST STATUS SPACECRAFT AND EGSE" "(5.8.5.4 Configuration for Launch)" ⇒ Click the button "Confirm" to proceed					✓	

SPR20 recurrence.
but corrected to be
verified

occurrence of
SPR464/66
TTRate 150Hz step

#PVS 1

Test location: ESTEC	Operator O. Reardon	Product-Assurance: R. Boossens	Date: 30.04.08 18:45
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Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
9	Z010999MCVT153_STATUS_IST 5.8.5.4 At the prompt: “Do you want to stop and notice each failure?” ⇒ Click the button “YES” to proceed	Yes				✓	
10	Z010999MCVT153_STATUS_IST 5.8.5.4 ⇒ Click the button “OK” to proceed					✓	
11	Z010999MCVT101_MODE_TRANSITIONS Reply to the prompt: “LAUNCH TO SAM (5.8.5.5)” ⇒ Click the button “confirm” to proceed					✓	
12	D102159SCVT216_ASED_TM_150_KBPS_IST ⇒ Click the button “End TS!” to proceed					✓	
13	D102159SCVT163_IST_MM_LAN_SAM At the prompt: “Please check on the RF-SCOE that” “RF signal is correctly applied” ⇒ Only when a signal appears on TT&C SCOE spectrum					✓	

Test location: <i>ESTEC</i>	Operator: <i>O. Martin</i>	Product-Assurance: <i>R. Goossens</i>	Date: <i>30.06.08 19:03</i>
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Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
14	D102159SCVT163_IST_MM_LAN_SAM ⇒ Click the button "End TS!" to proceed					✓	
14	Z010999MCVT101_IST_MODE_TRANSITION The MODE TRANSITION MASTER SEQUENCE is asking to configure ACMS in SAM by overriding Separation flag ⇒ Perform Steps 14 to 19					✓	
15	A102109SPVT003_ACMS_CONFIG25 In Main Menu 1.0 INIT PHASE At the prompt "Enter your choice", insert "88" to select "Continue to menu 3.0 SEPARATION" ⇒ Click the button "OK" to proceed					✓	
16	A102109SPVT003_ACMS_CONFIG25 ⇒ Click the button "Continue" to proceed					✓	
17	A102109SPVT003_ACMS_CONFIG25 In the Main Menu 3.0 SEPARATION EVENT At the prompt "Enter your choice", insert "1" to select "SEPARATION (Set ACC Separation Override Flag)" ⇒ Click the button "OK" to proceed					✓	

Test location: <i>ESTEC</i>	Operator: <i>O. Merlin</i>	Product-Assurance: <i>R. Goossens</i>	Date: <i>30.06.08 18:08</i>
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Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
18	A102109SPVT003_ACMS_CONFIG25 ⇒ Click the button "Continue" to proceed					✓	
19	A102109SPCT034_ACMS_SAM_MON At the prompt : "Do you want to continue to monitor" "SAM Sun Pointing mode" ⇒ Answer "No" and click the button "OK" to proceed	no				✓	
20	Z010999MCVT101_MODE_TRANSITIONS ⇒ Once A102109SPVT021_ACMS_ACC_SEPARA finished and ACMS configured in ACMS, click the button "OK" to proceed					✓	
21	Z010999MCVT101_MODE_TRANSITIONS At the prompt: "IST STATUS (5.8.5.5) AND EGSE (Separation)" ⇒ Click the button "Confirm " to proceed					✓	

Test location: <i>ESTEC</i>	Operator <i>O. Nedlin</i>	Product-Assurance: <i>R. Goossens</i>	Date: <i>30.04.08 18:16</i>
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Step-No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
22	Z010999MCVT153_STATUS_IST 5.8.5.5 At the prompt: "Do you want to stop and notice each failure?" ⇒ Click the button "YES" to proceed					✓	
23	Z010999MCVT153_STATUS_IST 5.8.5.5 ⇒ Click the button "OK" to proceed					✓	
24	Z010999MCVT101_MODE_TRANSITIONS At the prompt: "TRANSITION SAM TO SAM" ⇒ Click the button "Confirm " to proceed				SPR440/NC4160: accumulation Tm with inversed calibration curve	✓	
25	Z102999SCVT003_SREM_ACQ_START ⇒ Click the button "End TS!" to proceed					✓	
26	D102159SCVT216_ASED_TM_150_KBPS_IST ⇒ Click the button "End TS!" to proceed					✓	

Test location: <i>ESTEC</i>	Operator: <i>O. Aertin</i>	Product-Assurance: <i>R. Baussens</i>	Date: <i>30.04.08</i>	<i>19.22</i>
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Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
27	D102159SCVT162_IST_SAM_SAM ⇒ Click the button "End TS!" to proceed <i>Return Observer Mode 29 for PACS and SP111 from IST</i>					✓	
28	Z010999MCVT101_MODE_TRANSITIONS At the prompt: "IST STATUS SPACECRAFT AND EGSE (5.8.5.6)" ⇒ Click "Confirm " to proceed					✓	
29	Z010999MCVT153_STATUS_IST 5.8.5.6 At the prompt: "Do you want to stop and notice each failure?" ⇒ Click the button "YES" to proceed					✓	
30	Z010999MCVT153_STATUS_IST 5.8.5.6 ⇒ Click the button "Ok" to proceed					✓	
31	Z010999MCVT101_MODE_TRANSITIONS At the prompt: "TRANSITION SAM TO NOM" ⇒ Click the button "Confirm " to proceed					✓	

#PVS 2
 recurrence of SP111

Test location: <i>ESTEC</i>	Operator <i>O. Berlin</i>	Product-Assurance: <i>D. LAMONBY</i>	Date: <i>01.05.08 6:43</i>
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Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
32	D102159SCVT216_ASED_TM_150_KBPS_IST ⇒ Click the button "End TSI!" to proceed					✓	
33	A102109SPVT036_ACMS_STR_ON At the prompt: "Do you want to Change the current STR in use?" ⇒ Answer "no" and click the button "OK" to proceed	no				✓	
34	A102109SPVT036_ACMS_STR_ON At the prompt: "Do you want STR-2 ON in SBY Mode ?" Answer "no" and click the button "OK" to proceed	no				✓	
35	Z010999MCVT101_IST_MODE_TRANSITION The MODE TRANSITION MASTER SEQUENCE is asking to configure ACMS in OCM Mode ⇒ Perform the 3 following Steps					✓	

PVS 3 SSNT Damp

Test location: <i>ESTEC</i>	Operator: <i>O. Nerlin</i>	Product-Assurance: <i>D. LAMONBY</i>	Date: <i>01.05.08</i>
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Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
36	A102109SPVT003_ACMS_CONFIG25 In Main Menu 4.0 SAM PHASE At the prompt "Enter your choice", insert "6" to select "Transition to OCM" ⇒ Click the button "OK" to proceed					✓	
37	A102109SPVT003_ACMS_CONFIG25 ⇒ Click the button "Continue" to proceed					✓	
38	A102109SPVT036_ACMS_STR_ON At the prompt: "Do you want to Change the current STR in use?" ⇒ Kill this sequence to proceed			no	Info: STR is already ON in step 32, this is a workaround solution	✓	
39	Z010999MCVT101_MODE_TRANSITIONS ⇒ Once A102109SPVT043_TRANSITION_TO_OCM is finished and ACMS is configured in OCM Mode, click the button "OK" to proceed				FCV Duty Cycle Failed NCR 3787 [2x]		

click the button:
→ continue (PVS#4)

✓

Test location: ESTEC	Operator: C. Mach	Product-Assurance: D. LAMONBY	Date: 1.5.08 7:23
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Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
40	D102159SCVT164_IST_MM_SAM_NOM ⇒ Click the button "End TS!" to proceed					✓	
41	Z010999MCVT101_IST_MODE_TRANSITION The MODE TRANSITION MASTER SEQUENCE is asking to configure ACMS in SCM Mode ⇒ Perform the 4 following Steps					✓	
42	A102109SPVT003_ACMS_CONFIG25 In Main Menu 7.0 OCM PHASE At the prompt "Enter your choice", insert "3" to select "Transition to SCM" ⇒ Click the button "OK" to proceed					✓	
43	A102109SPVT003_ACMS_CONFIG25 ⇒ Click the button "Continue" to proceed					✓	

Test location: ESTEC	Operator e. Huch	Product-Assurance: D. LAMONBY	Date: 1.5.08 7:56
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Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
44	<p>A102109SPVT038_RWL_ON At the prompt: "Do you want to change the actual onboard" "wheel s selected in the nominal configuration?" The 4 RWLs are expected to be set as real and selected ⇒ Click the button "No" to proceed</p>	no —				✓	
45	<p>A102109SPVT042_RWL_SPINUP At the prompt "Do you want to change" "the actual Angular momentum" "to be commanded to the wheel " "selected in the UDC parameter?" ⇒ Answer "No" and click the button "OK" to proceed</p>	no —			Target wheel speed not reached after 600 s	✓	
46	<p>A102109SPVT042_RWL_SPINUP ⇒ Click the button "End TS" to proceed</p>				VCR 2130 → Resume	✓	

Test location: <i>ESTEC</i>	Operator <i>C. Much</i>	Product-Assurance: <i>D. LAMONBY</i>	Date: <i>1.5.08 11:34</i>
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Step-No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
47	Z010999MCVT101_MODE_TRANSITIONS ⇒ once A102109SPVT003ACMS_CONFIG25 set in Main Menu 5.0 and ACMS configured in SCM Mode, click the button "OK" to proceed					✓	
48	Z010999MCVT101_MODE_TRANSITIONS At the prompt: "IST STATUS SPACECRAFT AND EGSE (5.8.5.7)" ⇒ Click the button "Confirm" to proceed					✓	
49	Z010999MCVT153_STATUS_IST 5.8.5.7 At the prompt: "Do you want to stop and notice each failure?" ⇒ Click the button "YES" to proceed	yes				✓	
50	Z010999MCVT153_STATUS_IST 5.8.5.7 ⇒ Click the button "Ok" to proceed					✓	

Test location: ESTEC	Operator C. MUCH	Product-Assurance: D. LAMONBY	Date: 1.5.08	8:19
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Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
51	<p>Z010999MCVT101_MODE_TRANSITIONS</p> <p>Reply to the prompt: "TRANSITION NOM TO NOM"</p> <p>⇒ Click the button "Confirm" to proceed</p>					✓	
52	<p>Z010999MCVT101_MODE_TRANSITIONS</p> <p>Reply to the prompt: "Switching ON HIFI ICU in Stand-By Please refer to procedure HP-2-ASED-TP-0206"</p> <p>⇒ Click the button "Confirm" to proceed</p>				# PVS # 5, #6 within TP 206 ✓		
53	<p>Z010999MCVT101_MODE_TRANSITIONS</p> <p>Reply to the prompt: "Switching ON SPIRE in Stand-By Please refer to procedure HP-2-ASED-TP-0206"</p> <p>⇒ Click the button "Confirm" to proceed</p>					✓	
54	<p>Z010999MCVT101_MODE_TRANSITIONS</p> <p>Reply to the prompt: "Switching ON PACS in Stand-By Please refer to procedure HP-2-ASED-TP-0206"</p> <p>⇒ Click the button "Confirm" to proceed</p>					✓	

Test location: <i>ESTEC</i>	Operator: <i>O. Paulin</i>	Product-Assurance: <i>R. Boissens</i>	Date: <i>01.05.08 11:08</i>
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Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
55	D102159SCVT202_IST_MTL_PING_TEST ⇒ Click the button "End TS!" to proceed					✓	
56	Z010999MCVT101_MODE_TRANSITIONS Reply to the prompt: "Switching PACS in Spectro Mode and enable Real Time science downlink Please refer to procedure HP-2-ASED-TP-0206" ⇒ Click the button "Confirm" to proceed					✓	
57	Z102999SCVT002_SREM_OFF ⇒ Click the button "End TS!" to proceed				SPR440/NC4160: accumulation Tm with inversed calibration	✓	
58	D102159SCVT161_IST_MM_NOM_NOM ⇒ Click the button "End TS!" to proceed					✓	
59	Z010999MCVT101_MODE_TRANSITIONS At the prompt: "IST STATUS SPACECRAFT AND EGSE (5.8.5.8)" ⇒ Click the button "Confirm" to proceed					✓	

SPR507

⊗

PVS #7

Missing "IST-Status" 5.8.5.8.1

✓ PVS No 7

Test location: ESTEC	Operator	Product-Assurance: R. Coossens	Date: 01.05.08 12:48
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Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
60	Z010999MCVT153_STATUS_IST 5.8.5.8 At the prompt: "Do you want to stop and notice each failure?" ⇒ Click the button "OK" to proceed					✓	
61	Z010999MCVT153_STATUS_IST 5.8.5.8 ⇒ Click the button "Ok" to proceed					✓	
62	Z010999MCVT101_MODE_TRANSITIONS At the prompt: "TRANSITION NOM TO EAM Part 1" ⇒ Click the button "Confirm" to proceed			conf. 14:06		✓	
63	Z102999SCVT003_SREM_ACQ_START ⇒ Click the button "End TS!" to proceed			14:09	DEF40160 fails Rel NCR 4160	X	
64	D102159SCVT167_IST_MM_NOM_EAM ⇒ Click the button "End TS!" to proceed			14:19	NCR 4129: PACS OFF XX	X	

PVS # 8
TO RECOVER
STR-1

SPR 472
recovered

PVS # 37
STOP NOTICE
MISSING

* Add note to Operator to check that PACS IS STILL IN SCIENCE MODE

Test location: ESTEC	Operator W. Dain	Product Assurance: K. Boussens	Date: 1/5/08
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~~XX~~ CHECK OF PM049380
EXPECTED: NO PRIME
ACT: STBY SPEC
DATE 0

Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
65	Z010999MCVT101_MODE_TRANSITIONS At the prompt: "IST STATUS SPACECRAFT AND EGSE" "(5.8.5.9a, EAM intermediate state)" 2 EAM TRANS PART 1 ⇒ Click the button "Confirm" to proceed			CONF 14:20		✓	
66	Z010999MCVT153_STATUS_IST 5.8.5.9a At the prompt: "Do you want to stop and notice each failure?" ⇒ Click the button "YES" to proceed			YES 14:20			
67	Z010999MCVT153_STATUS_IST 5.8.5.9a ⇒ Click the button "OK" to proceed			14:38	RMB 18442 EXP: 125 SWITCH PACS TO SBY REF →		
68	Z010999MCVT101_MODE_TRANSITIONS At the prompt: "TRANSITION NOM TO EAM Part 2:" "GROUND SETTINGS FOR EARTH MODE" ⇒ Click the button "Confirm" to proceed			14:39 →		✓	

(RX2) Know
NCR 425
EAM PART 1
ACT 4K
NCR 4138
PUS #9

Test location: ESTEC	Operator W.D	Product Assurance: R. Goossens	Date: 1/5/08
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Continue Down to Note 2 & Run 999 and TEST CASE 14141

Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
69	Z010999MCVT101_MODE_TRANSITIONS At the prompt: "IST STATUS SPACECRAFT AND EGSE" "(5.8.5.9b, EAM final state)" 3 ⇒ Click the button "Confirm" to proceed			CONFIRM 14:43		✓	
70	Z010999MCVT153_STATUS_IST 5.8.5.9b At the prompt: "Do you want to stop and notice each failure?" ⇒ Click the button "YES" to proceed			YES 14:43			X
71	Z010999MCVT153_STATUS_IST 5.8.5.9b ⇒ Click the button "Ok" to proceed			OK 14:47		✓	
72	Z010999MCVT101_MODE_TRANSITIONS At the prompt: "TRANSITION EARTH TO EARTH" ⇒ Click the button "Confirm" to proceed			CONFIRM 14:48			X

START/STOP

*RX1 Should Check for 4K OK.
RX2 Known Pol.
SPR I-63
(AVM).*

STR-2 WAIT FOR STANDBY INCREASE TIMEOUT TIME ↓ AUTO DECT

Test location: <i>E STEC</i>	Operator: <i>WSD</i>	Product Assurance: <i>R. Goussens</i>	Date: <i>1/5/08</i>
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Step-No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
73	Z010999MCVT101_MODE_TRANSITIONS At the prompt: "By step calling sequence Z102999SCVT008_ASDGEN_SPIRESTBY2OPS click confirm" ⇒ Click the button "Confirm" to proceed			Conf. 15:25		✓	
74	S102999SCVT911_ASDDBGSPiR_STBY2OPS At the prompt: "Command SPIRE from READY to OPS mode " "in any conditions. Select NO to abort TS if not correct" ⇒ Click the button "YES" to proceed			YES 15:03		✓	INCREASE TM TIMEOUT
75	Z010999MCVT101_MODE_TRANSITIONS At the prompt <i>Photometer</i> "Once SPIRE set in Science Mode and its science data TM enabled in downlink, those science data are stored automatically inside directory /TMDUMP/ ???VC1.txt" ⇒ Check the relative file in storing SPIRE data, and click the button "OK" to proceed			OK 15:08	<i>NS mode in Simulator Science to Science is "Undefined"</i>	✓	
76	D102159SCVT168_IST_MM_EAM_EAM ⇒ Click the button "End TS!" to proceed			OK 15:17		✓	
Test location:		Operator	Product-Assurance:	Date:			
ESTEC		W.D. Down	R. Coossens	15/08			

Perform according to A-1. 2.8 for PACS IDP and HSE

Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value	P	N
77	Z010999MCVT101_MODE_TRANSITIONS At the prompt: "IST STATUS SPACECRAFT AND EGSE (5.8.5.10)" ⇒ Click the button "Confirm" to proceed			CONF. 15:18 →	✓	
78	Z010999MCVT153_STATUS_IST 5.8.5.10 At the prompt: "Do you want to stop and notice each failure?" ⇒ Click the button "YES" to proceed			YES 15:18		AS Before for RX1 + RX2 NCR 253 = SPR54
79	Z010999MCVT153_STATUS_IST 5.8.5.10 ⇒ Click the button "Ok" to proceed			OK 15:21	✓	
80	Z010999MCVT101_MODE_TRANSITIONS At the prompt: "TRANSITION EARTH TO NOM" ⇒ Click the button "Confirm" to proceed			CONF 15:23	✓	

Test location: <i>ESTEC</i>	Operator: <i>[Signature]</i>	Product Assurance: <i>[Signature]</i>	Date: <i>15/08</i>
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Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
81	Z010999MCVT101_MODE_TRANSITIONS At the prompt: "By step calling sequence Z102999SCVT008_ASDGEN_SPIRESTBY2OPS click confirm" ⇒ Click the button "Confirm" to proceed			Conf. 15:29		✓	
82	S102999SCVT911_ASDBGSPIR_STBY2OPS At the prompt: "Command SPIRE from READY to OPS mode " "in any conditions. Select NO to abort TS if not correct" ⇒ Click the button "YES" to proceed			Yes		✓	
83	Z010999MCVT101_MODE_TRANSITIONS At the prompt "Once SPIRE set in Science Mode and its science data TM enabled in downlink, those science data are stored automatically inside directory /TMDUMP/ ???VC1.txt" ⇒ Check the relative file in storing SPIRE data, and click the button "OK" to proceed			OK 15:31		✓	
84	Z102999SCVT002_SREM_OFF ⇒ Click the button "End TS!" to proceed			15:33		✓	
Test location: ESTEC		Operator: W.D.	Product-Assurance: R. Boassens	Date: 1/5/08			

Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
85	D102159SCVT169_IST_MM_EAM_NOM ⇒ Click the button "End TS!" to proceed			15:34	SPR441 reoccurrence	✓	
86	Z010999MCVT101_MODE_TRANSITIONS At the prompt: "IST STATUS SPACECRAFT AND EGSE (5.8.5.11)" ⇒ Click the button "Confirm" to proceed			CONF 15:34		✓	
87	Z010999MCVT153_STATUS_IST 5.8.5.11 At the prompt: "Do you want to stop and notice each failure?" ⇒ Click the button "YES" to proceed			YES 15:35		✓	
88	Z010999MCVT153_STATUS_IST 5.8.5.11 ⇒ Click the button "OK" to proceed			OK 15:38		✓	
89	Z010999MCVT101_MODE_TRANSITIONS At the prompt: "TRANSITION NOM TO SM" ⇒ Click the button "Confirm" to proceed			OK		✓	

Test location: ESTEC	Operator: WSDover	Product-Assurance: K. Boossens	Date: 1/5/08
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Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
90	Z102999SCVT003_SREM_ACQ_START ⇒ Click the button "End TS!" to proceed			15:36	NCR4160/SPR440	✓	
91	D102159SCVT170_IST_MM_NOM_SM At the prompt "Some TCS table entries shall be verified with respect to default value. The modification shall be harmless if this procedure shall be repeated in TBT, but may be smaller than 1° when change remain observable" ⇒ Click the button "OK" when TCS table entries are correctly set.			Conf. 16:36		✓	
92	D102159SCVT170_IST_MM_NOM_SM At the prompt: "Set UPLINK operation in RF on LGA1 at 125 bps" ⇒ Click the button "Confirm" to proceed			Conf. 16:50	IT=07 STR-1 FSIR		X

7VS# 38
✓
SPR 508
→ POS # 10 to
Dump CEL
A & R
← POS # 11
DC 95E170
RX-2 to
125 BPS.
* Add prompt

* Request about the Heaters for RES +
Piper
See over!

Test location: ESTEC	Operator: W. Dain	Product-Assurance: K. Coossens	Date: 1/5/08
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Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
93	D102159SCVT170_IST_MM_NOM_SM At the prompt: "Do you want to execute the workaround calling D102159SCVT003DISTHERMALCONTROL?" ⇒ Click the button "No" to proceed			No		✓	
94	D102159SCVT170_IST_MM_NOM_SM ⇒ Click the button "End TS" to proceed				SPR477 STR! <i>any time</i> unavailable		
95	Z010999MCVT101_MODE_TRANSITIONS At the prompt: "IST STATUS SPACECRAFT AND EGSE (5.8.5.12)" ⇒ Click the button "Confirm" to proceed			Conf.		✓	
96	Z010999MCVT153_STATUS_IST 5.8.5.12 At the prompt: "Do you want to stop and notice each failure?" ⇒ Click the button "YES" to proceed			Yes		✓	

PVS # 38

Test location: <i>ESTEC</i>	Operator: <i>WSD</i>	Product Assurance: <i>R. Boossens</i>	Date: <i>1/5/08</i>
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Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
97	Z010999MCVT153_STATUS_IST 5.8.5.12 ⇒ Click the button "OK" to proceed			conf. 17:26		✓	
98	D102159SCVT205_SAT_COM_TCT ⇒ Click the button "End TS!" to proceed			conf. 17:45	SPR480 contradiction between default TCT and dumped data	✓	
99	Z010999MCVT101_MODE_TRANSITIONS At the prompt: "TRANSITION SM to SM" ⇒ Click the button "Confirm" to proceed			CONF 17:50		✓	
100	D102159SCVT175_SET_SURV_REG Do you want to set survritsl=10177,? ⇒ Click "Continue" to proceed			CONF 17:50		✓	
101	D102159SCVT175_SET_SURV_REG ⇒ Click the button "End TS!" to proceed			18:17		✓	

Test location: ESTEC	Operator W. S. Dain	Product-Assurance: R. Grossens	Date: 1/5/08
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Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
102	D102159SCVT176_WRITE_CROME ⇒ Click the button "End TS!" to proceed			17:57		✓	
103	D102159SCVT171_IST_MM_SM_SM At the prompt "Set UPLINK operation in RF on LGA1 at 125 bps" ⇒ Click the button "Confirm" to proceed			18:08		✓	
104	D102159SCVT171_IST_MM_SM_SM At the prompt Do you want to execute the workaround calling the sequence D102159SCVT003DISTHERMALCONTROL? ⇒ Click the button "NO" to proceed			NO 18:15		✓	
105	D102159SCVT171_IST_MM_SM_SM ⇒ Click the button "End TS!" to proceed			18:18		✓	

Test location: ESTEC	Operator W. Dain	Product Assurance: R. Gossens	Date: 1/5/08
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Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value	P	N
106	Z010999MCVT101_MODE_TRANSITIONS At the prompt: "IST STATUS SPACECRAFT AND EGSE (5.8.5.13)" ⇒ Click the button "Confirm" to proceed			C-4. 18:17	/	
107	Z010999MCVT153_STATUS_IST 5.8.5.13 At the prompt: "Do you want to stop and notice each failure?" ⇒ Click the button "YES" to proceed			Y-20 18:18	/	
108	Z010999MCVT153_STATUS_IST 5.8.5.13 ⇒ Click the button "OK" to proceed			OK 18:19	/	
109	Z010999MCVT101_MODE_TRANSITIONS Operator Info: Waiting 15 mn to recover all data in 500bps					?
110	Z010999MCVT101_MODE_TRANSITIONS At the prompt: "TRANSITION SM to SAM" ⇒ Click the button "Confirm" to proceed			CONF 19:32	/	

PUS # 12
Send TC
DC 17 F 70

Test location: ESTEC	Operator W. Dain	Product Assurance: R. Boassens	Date: 4/5/08
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Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
111	D102159SCVT175_SET_SURV_REG Do you want to set survrits=303F7 and with survBits2 = f70101 ? ⇒ Click "Continue" to proceed			Cont 19:32		/	
112	D102159SCVT175_SET_SURV_REG ⇒ Click the button "End TS!" to proceed			OK 19:41		/	
113	D102159SCVT176_WRITE_CROME ⇒ Click the button "End TS!" to proceed			OK 20:02			? PVS# 13
114	Z010999MCVT153_STATUS_IST 5.8.5.14 At the prompt: "Do you want to stop and notice each failure?" ⇒ Click the button "YES" to proceed			YES 20:10		/	

Test location: ESTEC	Operator WSDain	Product Assurance: R. Grossens	Date: 1/5/08
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Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
115	Z010999MCVT153_STATUS_IST 5.8.5.14 ⇒ Click the button "OK" to proceed						
116	D102159SCVT174_IST_REDUNDANT_CONF ⇒ Click the button "End TS!" to proceed			N/A			
117	Z010999MCVT101_MODE_TRANSITIONS "PREPARATION for EAM to SAM" ⇒ Click the button "Confirm " to proceed					✓	
118	Z010999MCVT101_IST_MODE_TRANSITION The MODE TRANSITION MASTER SEQUENCE is asking to configure ACMS in OCM Mode Perform the 4 following Steps					✓	

PVS #14

PVS #15
PVS #16
PVS #17
STEP
DELETED.
SPR ~~511~~
PVS 40 17
NCR 4255

PVS #19

Test location: ESTEC	Operator O. Berlin.	Product-Assurance: D. LAMOUS	Date: 1/5/08 9:12
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PVS #18
PVS #19

Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
119	A102109SPVT003_ACMS_CONFIG25 In Main Menu 4.0 SAM PHASE At the prompt "Enter your choice", insert "6" to select "Transition to OCM" ⇨ Click the button "OK" to proceed					✓	
120	A102109SPVT003_ACMS_CONFIG25 ⇨ Click the button "Continue" to proceed					✓	
121	A102109SPVT036_ACMS_STR_ON At the prompt: "Do you want to Change the current STR in use?" ⇨ Answer No to proceed	no				✓	
122	A102109SPVT036_ACMS_STR_ON At the prompt: "Do you want STR-2 ON in SBY Mode ?" ⇨ Answer "no" and click the button "OK" to proceed	no				✓	

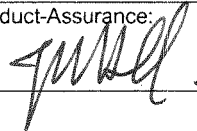
Test location: <i>ESTEC</i>	Operator: <i>O. Merlin</i>	Product-Assurance: <i>D. LAMONBY</i>	Date: <i>02.05.09 9.30</i>
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Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
123	Z010999MCVT101_MODE_TRANSITIONS ⇒ Once A102109SPVT043_TRANSITION_TO_OCM is finished and ACMS is configured in OCM Mode, click the button "OK" to proceed					✓	
124	D102159SCVT164_IST_MM_SAM_NOM ⇒ Click the button "End TS!" to proceed					✓	
125	Z010999MCVT101_IST_MODE_TRANSITION The MODE TRANSITION MASTER SEQUENCE is asking to configure ACMS in SCM Mode Perform the 5 following Steps					✓	
126	A102109SPVT003_ACMS_CONFIG25 In Main Menu 7.0 OCM PHASE At the prompt "Enter your choice", insert "3" to select "Transition to SCM" Click the button "OK" to proceed					✓	

*NCR 3787
FW duty cycle.*

Test location: <i>ESTEC</i>	Operator: <i>O. Martin</i>	Product-Assurance: <i>D. LAMONBY</i>	Date: <i>02.25.08 9.42.</i>
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Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
127	A102109SPVT003_ACMS_CONFIG25 ⇒ Click the button "Continue" to proceed					✓	
128	A102109SPVT038_RWL_ON At the prompt: "Do you want to change the actual onboard" "wheel s selected in the nominal configuration?" The 4 RWLs are expected to be set as real and selected ⇒ Click No to proceed	no				✓	
129	A102109SPVT042_RWL_SPINUP At the prompt "Do you want to change" "the actual Angular momentum" "to be commanded to the wheel " "selected in the UDC parameter?" ⇒ Answer "No" and click the button "OK" to proceed	no				✓	
130	A102109SPVT042_RWL_SPINUP ⇒ Click the button "End TS" to proceed					✓	

Test location: ESTEC	Operator M. THEUNISSEN	Product-Assurance: 	Date: 215/08	10:00
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Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
131	<p>Z010999MCVT101_MODE_TRANSITIONS</p> <p>⇒ once A102109SPVT003ACMS_CONFIG25 set in Main Menu 5.0 and ACMS configured in SCM Mode, click the button "OK" to proceed</p>					✓	
132	<p>Z010999MCVT101_MODE_TRANSITIONS</p> <p>Reply to the prompt: "Switching ON HIFI ICU in Stand-By Please refer to procedure HP-2-ASED-TP-0206"</p> <p>⇒ Click the button "Confirm" to proceed</p>					✓	
133	<p>Z010999MCVT101_MODE_TRANSITIONS</p> <p>Reply to the prompt: "Switching ON SPIRE in Stand-By Please refer to procedure HP-2-ASED-TP-0206"</p> <p>⇒ Click the button "Confirm" to proceed</p>					✓	

#PUS20
#PUS21
#PUS22,23,24
SPR513.

PUS#25

Test location: ESTEC	Operator MITHEUNISSEN	Product-Assurance: R. Goossens	Date: 02/05/08 10:06
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Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
134	Z010999MCVT101_MODE_TRANSITIONS Reply to the prompt: "Switching ON PACS in Stand-By Please refer to procedure HP-2-ASED-TP-0206" ⇒ Click the button "Confirm" to proceed						
135	D102159SCVT202_IST_MTL_PING_TEST ⇒ Click the button "End TS!" to proceed						
136	Z010999MCVT101_MODE_TRANSITIONS User Info>: WARNING HIFI as volunteer Instrument shall provide science data ⇒ Click OK to proceed						
137	D102159SCVT167_IST_MM_NOM_EAM ⇒ Click the button "End TS!" to proceed						

(Rx)
see further part.

* Perform operator note 25 for CBCP recovery

Test location:	Operator	Product-Assurance:	Date:
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AS Run From
030500 till END!

Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
123	Z010999MCVT101_MODE_TRANSITIONS ⇒ Once A102109SPVT043_TRANSITION_TO_OCM is finished and ACMS is configured in OCM Mode, click the button "OK" to proceed						
124	D102159SCVT164_IST_MM_SAM_NOM ⇒ Click the button "End TS!" to proceed						
125	Z010999MCVT101_IST_MODE_TRANSITION The MODE TRANSITION MASTER SEQUENCE is asking to configure ACMS in SCM Mode Perform the 5 following Steps						
126	A102109SPVT003_ACMS_CONFIG25 In Main Menu 7.0 OCM PHASE At the prompt "Enter your choice", insert "3" to select "Transition to SCM" Click the button "OK" to proceed					✓	

Entry Point
after NCR
← investigation

SPR 515 - NCR

Test location: ESTEC	Operator: C. Mach	Product-Assurance: R. Coossens	Date: 12:39 3.5.08
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Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
127	<p>A102109SPVT003_ACMS_CONFIG25</p> <p>⇒ Click the button "Continue" to proceed</p>					✓	
128	<p>A102109SPVT038_RWL_ON</p> <p>At the prompt:</p> <p style="text-align: center;">"Do you want to change the actual onboard" "wheel s selected in the nominal configuration?"</p> <p>The 4 RWLs are expected to be set as real and selected</p> <p>⇒ Click No to proceed</p>	no —				✓	
129	<p>A102109SPVT042_RWL_SPINUP</p> <p>At the prompt</p> <p style="text-align: center;">"Do you want to change" "the actual Angular momentum" "to be commanded to the wheel " "selected in the UDC parameter?"</p> <p>⇒ Answer "No" and click the button "OK" to proceed</p>	no				✓	
130	<p>A102109SPVT042_RWL_SPINUP</p> <p>⇒ Click the button "End TS" to proceed</p>					✓	

Test location: ESTEC	Operator: C. Much	Product-Assurance: R. Boossens	Date: 3.5.08
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Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
131	<p>Z010999MCVT101_MODE_TRANSITIONS</p> <p>⇒ once A102109SPVT003ACMS_CONFIG25 set in Main Menu 5.0 and ACMS configured in SCM Mode, click the button "OK" to proceed</p>					✓	
132	<p>Z010999MCVT101_MODE_TRANSITIONS</p> <p>Reply to the prompt: "Switching ON HIFI ICU in Stand-By Please refer to procedure HP-2-ASED-TP-0206"</p> <p>⇒ Click the button "Confirm" to proceed</p>				already done		
133	<p>Z010999MCVT101_MODE_TRANSITIONS</p> <p>Reply to the prompt: "Switching ON SPIRE in Stand-By Please refer to procedure HP-2-ASED-TP-0206"</p> <p>⇒ Click the button "Confirm" to proceed</p>				already done		

#PVS 31

Test location: <i>ESTEC</i>	Operator: <i>c. Much</i>	Product-Assurance: <i>R. Grossen</i>	Date: <i>25.08</i>
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Step-No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value	P	N
134	Z010999MCVT101_MODE_TRANSITIONS Reply to the prompt: "Switching ON PACS in Stand-By Please refer to procedure HP-2-ASED-TP-0206" ⇒ Click the button "Confirm" to proceed			already done		
135	D102159SCVT202_IST_MTL_PING_TEST ⇒ Click the button "End TS!" to proceed				✓	
136	Z010999MCVT101_MODE_TRANSITIONS User Info>: WARNING HIFI as volunteer Instrument shall provide science data Please refer to procedure # Instrument switching C#P-2-ASED TP0206 confirm ⇒ Click OK to proceed			15:05	✓	
137	D102159SCVT167_IST_MM_NOM_EAM ⇒ Click the button "End TS!" to proceed					

PVS#32

* Perform operator note 29 for OBCP recovery

Test location: ESTEC	Operator C. Much	Product-Assurance: R. Boissens	Date: 3.5.07
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202 39 SCVT 03 - SREK - #02 - Start
 ⇒ click the button "END TS" to proceed

~~IST-Mode-Transition~~
~~Transition EHM~~

Step-No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
138	Z010999MCVT101_MODE_TRANSITIONS At the prompt: "IST STATUS SPACECRAFT AND EGSE (5.8.5.17a)" ⇒ Click the button "Confirm" to proceed					✓	
139	Z010999MCVT153_STATUS_IST 5.8.5.17a At the prompt: "Do you want to stop and notice each failure?"	yes			Bus Profile still "2"	✓	
140	Z010999MCVT153_STATUS_IST 5.8.5.17a ⇒ Click the button "Ok" to proceed					✓	
141	Z010999MCVT101_MODE_TRANSITIONS At the prompt: "TRANSITION EAM to SAM" ⇒ Click the button "Confirm" to proceed					✓	
142	D102159SCVT173_IST_MM_EAM_SAM ⇒ Click the button "End TS!" to proceed					✓	

PVS#33

next

Test location: ESTEC	Operator c. Much	Product-Assurance: R. Goossens	Date: 3.5.08 17:26
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Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
143	Z010999MCVT153_STATUS_IST 5.8.5.17 At the prompt: "Do you want to stop and notice each failure?" ⇒ Click the button "YES" to proceed					✓	
144	Z010999MCVT153_STATUS_IST 5.8.5.17 ⇒ Click the button "OK" to proceed					✓	
145	Z010999MCVT101_MODE_TRANSITIONS Operator Info: Waiting 15 mn to recover all data in 500bps					✓	
146	Z010999MCVT101_MODE_TRANSITIONS At the prompt: "PREPARATION for NOM to SAM" ⇒ Click the button "Confirm" to proceed					✓	
147	D102159SCVT164_IST_MM_SAM_NOM ⇒ Click the button "End TS!" to proceed					✓	

PVS #36

Test location: <i>ESTEC</i>	Operator: <i>C MUCH</i>	Product-Assurance: <i>R. Coosens</i>	Date: <i>030508</i>
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Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
148	Z010999MCVT101_MODE_TRANSITIONS The MODE TRANSITION MASTER SEQUENCE is asking to configure ACMS in SAM Mode ⇒ Perform the 4 following Steps						
149	A102109SPVT003_ACMS_CONFIG25 In Main Menu 5.0 SCM PHASE At the prompt "Enter your choice", insert to select " Transition to SAM "	"4"			ACMS already in correct Mode		
150	A102109SPVT003_ACMS_CONFIG25 ⇒ Click the button "Continue" to proceed				No configuration requested.		
151	Z010999MCVT101_MODE_TRANSITIONS ⇒ once ACMS configured in SAM Mode, click the button "OK" to proceed						



Test location:	Operator	Product-Assurance:	Date:
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Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
152	<p>Z010999MCVT101_MODE_TRANSITIONS</p> <p>Reply to the prompt: "Switching ON HIFI ICU in Stand-By Please refer to procedure HP-2-ASED-TP-0206"</p> <p>⇒ Click the button "Confirm" to proceed</p>						
153	<p>Z010999MCVT101_MODE_TRANSITIONS</p> <p>Reply to the prompt: "Switching ON SPIRE in Stand-By Please refer to procedure HP-2-ASED-TP-0206"</p> <p>⇒ Click the button "Confirm" to proceed</p>				<p><i>Instruments still already ON. No Power ON necessary</i></p>		
154	<p>Z010999MCVT101_MODE_TRANSITIONS</p> <p>Reply to the prompt: "Switching ON PACS in Stand-By Please refer to procedure HP-2-ASED-TP-0206"</p> <p>Click the button "Confirm" to proceed</p>						

R

Test location:	Operator	Product-Assurance:	Date:
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Step-No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value	P	N
155	Z010999MCVT101_MODE_TRANSITIONS Reply to the prompt: "Switching PACS from STANDBY to BURST MODE Please refer to procedure HP-2-ASED-TP-0206" Click the button "Confirm" to proceed			18:36 reperformed on 18:01	✓	
156 <i>incorrect red line</i>	Z010999MCVT101_MODE_TRANSITIONS At the prompt: "IST STATUS SPACECRAFT AND EGSE (5.8.5.18a)" ⇒ Click the button "Confirm" to proceed	<i>incorrect red lines</i>		18:08	✓	
157	Z010999MCVT153_STATUS_IST 5.8.5.18a At the prompt: "Do you want to stop and notice each failure?" ⇒ Click the button "YES" to proceed	<i>incorrect red lines</i>			✓	
158	Z010999MCVT153_STATUS_IST 5.8.5.18a ⇒ Click the button "OK" to proceed			19:23	✓	

PVS #35 steps not deleted but performed



Test location: ESTEC	Operator O. Redin	Product-Assurance:	Date: 3.5.08 18.23
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Step- No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
159	Z010999MCVT101_MODE_TRANSITIONS At the prompt: "TRANSITION for NOM to SAM"				19:33	✓	
160	D102159SCVT164_IST_MM_NOM_SAM ⇒ Click the button "End TS!" to proceed				19:40	✓	
161	Z010999MCVT101_MODE_TRANSITIONS At the prompt: "IST STATUS SPACECRAFT AND EGSE (5.8.5.18)" ⇒ Click the button "Confirm" to proceed					✓	
162	Z010999MCVT153_STATUS_IST 5.8.5.18 At the prompt: "Do you want to stop and notice each failure?" ⇒ Click the button "YES" to proceed					✓	
163	Z010999MCVT153_STATUS_IST 5.8.5.18 ⇒ Click the button "OK" to proceed					✓	

#PVS36

⊛ Perform operator note 28 "for OBCP recovery"

Test location: <i>ESTEC</i>	Operator: <i>C. Much</i>	Product-Assurance: <i>R. Boossens</i>	Date: <i>030508</i>
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Step-No.	Integration-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
164	Z010999MCVT101_MODE_TRANSITIONS Operator Info: Waiting 15 mn to recover all data in 500bps					✓	
165	Z010999MCVT101_MODE_TRANSITIONS ⇒ Click "End Ts!"					✓	

Test location: <i>ESTEC</i>	Operator: <i>C. Much</i>	Product-Assurance: <i>R. brassens</i>	Date: <i>3.5.08 20:07</i>
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8 Summary Sheets

8.1 Procedure Variation Summary

	Test Change	Curr. No.:	
		Date	
		Page	of
Test designation	Test Procedure	Issue	Rev.
Test step changed	Reason for Change		
Prepared by:	Resp. Test Leader	Project Engineer	
PA/QA	Prime	Customer	

Table 8.1-1: Procedure Variation Sheet

8.2 Non Conformance Report (NCR) Summary

The status of all NCRs generated during the test shall be given in the table below:

NCR - No.	NCR - Title	Date	Open Closed	PA sig.

Table 8.2-2: Non-Conformance Record Sheet

Procedure Variation Summary

	Test Change	Curr. No.: #1	Date 30-4-2008	Page 1 of 1
Test designation MODE TRANSITIONS	Test Procedure TP-0189	Issue 2	Rev.	
Test step changed <i>Insert after Step 7</i>	Reason for Change <i>Additional step</i>			
<p>D102159 SCVT 216 - #SED - TM - 150 - KBPS - LT</p> <p>Click the button 'ok' to proceed</p>				
Prepared by: <i>C. Mack</i>	Resp. Test Leader <i>C. Mack</i>	Project Engineer		
PA/QA D. LAMONBY / R.	Prime	Customer		

8.1 Procedure Variation Summary

		Test Change	Curr. No.: PVS #2	
			Date 30.04.08	
			Page 1	of
Test designation Mode Transition	Test Procedure TP-189	Issue 2	Rev.	
Test step changed 27	Reason for Change Procedure Update			
<p>Step 26</p> <p>Step 27: TCs Get RMA Status AC224109 and Get RRB Status AC225109 are prompting "Abort" Yes or No. Answer "Yes" those TCs will be acknowledged and completed later (due to SDObps)</p>				
Prepared by: O. Marlin	Resp. Test Leader C. Much	Project Engineer		
PA/QA D. Lammert	Prime	Customer		

Table 8.1-1: Procedure Variation Sheet

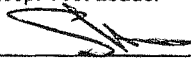
Procedure Variation Summary

	Test Change	Curr. No.: PVS3 Date 01.05.08. Page of	
Test designation Node Termination	Test Procedure TP-185	Issue 2	Rev.
Test step changed step 32	Reason for Change Avoid lost of data after Night in Standby		
<p>1) Set TR rate in 1.5 Mbps.</p> <p>2) Dump SSN to retrieve all data since Test start and avoid losing data (Night in Standby)</p> <p style="text-align: center;">call D102153 SCVT188-EST-DUDD-PKT-STORE</p> <p style="text-align: center;">0 80 1 81 282 3 83 CELA CELB</p> <p>3) restore TR rate to 150 Mbps.</p> <p style="text-align: right; margin-right: 50px;">finished on 7:10.</p>			
Prepared by: O. Marlin	Resp. Test Leader C. Much	Project Engineer	
PA/QA D. LAMONBY	Prime	Customer	

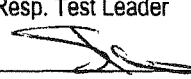
Procedure Variation Summary

	Test Change	Curr. No.: <u>4</u>	Date <u>01-05-2008</u>
		Page <u>1</u> of	
Test designation <u>MODE TRANSITIONS</u>	Test Procedure <u>TP-189</u>	Issue <u>2</u>	Rev. <u>—</u>
Test step changed <u>38</u>	Reason for Change <u>Additional comment required</u>		
<p>After the existing comments in test step 38, insert the following comment:</p> <p>Click the button "Continue" to proceed</p>			
Prepared by: <u>D. LAMONBY</u>	Resp. Test Leader <u>C. Mide</u>	Project Engineer	
PA/QA <u>D. LAMONBY</u>	Prime	Customer	

Procedure Variation Summary

	Test Change	Curr. No.: 5	Date 01-05-2008
		Page 1	of
Test designation MODE TRANSITIONS	Test Procedure TP-189/TP 206	Issue 2	Rev.
Test step changed AFTER STEPS	Reason for Change INSERT ADDITIONAL STEP		
<p style="text-align: center;">- USING TP 206 -</p> <p>THE FOLLOWING CHILD SEQUENCE SCRIPT FILE WAS HALTED AND TERMINATED :</p> <p style="text-align: center;">HIFIST_nom_STARTUP_LCU_TABLE_LOAD_WARM</p> <p>The command was then manually re-run.</p>			
Prepared by: D. LAMONBY	Resp. Test Leader 	Project Engineer	
PA/QA D. LAMONBY	Prime	Customer	

Procedure Variation Summary

	Test Change	Curr. No.: 6	Date 01-05-2008
		Page 1	of
Test designation MODE TRANSITIONS	Test Procedure TP-189/TP 206	Issue 2	Rev.
Test step changed 6	Reason for Change INSERT ADDITIONAL COMMENTS		
<p style="text-align: center;">- USING TP 206 -</p> <p>Insert the following additional comments into Test Step 6 after the sentence - "retrieved in the previous step."</p> <p>"NB. <OBSID> must be decimal value, NOT Hexadecimal"</p>			
Prepared by: D. LAMONBY	Resp. Test Leader 	Project Engineer	
PA/QA D. LAMONBY	Prime	Customer	

Procedure Variation Summary

	Test Change	Curr. No.: 7	Date 01-05-2008
		Page	of
Test designation MODE TRANSITIONS	Test Procedure TP-189	Issue 2	Rev.
Test step changed After step 57	Reason for Change Missing step in procedure		
<p>Missing step after step 57 in Procedure "0189"</p> <p>"IST STATUS spacecraft + EGSE"</p> <p>5.8.5.8.1</p>			
Prepared by: C. Much	Resp. Test Leader C. Much	Project Engineer	
PA/QA D. LAMONBY	Prime	Customer	

Procedure Variation Summary

	Test Change	Curr. No.: 8	
		Date 01-05-2008	
		Page	of
Test designation MODE TRANSITIONS	Test Procedure TP-189	Issue 2	Rev.
Test step changed 61	Reason for Change reconfigure STR		
<p>Because of STR/CLR cross check caused the STR to reconfigure, the STR usage shall be put back to STR-1 usage by executing the following commands:</p> <ul style="list-style-type: none"> - STR 1 ON - STR 1 STDB - STR 1 ATPAD - select STR 1 - declare STR 1 healthy - reconfig STR 1 <p>(see steps 21-24 of flight op. H-SVT-ADL 4 SD1)</p> <p>And switch OFF STR 2:</p> <ul style="list-style-type: none"> - ACZ42109 STR-2 SW OFF on - AC F1001 Fire 			
Prepared by: M THEUNISSEN	Resp. Test Leader C MUCH	Project Engineer	
PA/QA D LAMONTAG / R...	Prime	Customer	

Procedure Variation Summary

	Test Change	Curr. No.: 9	Date 01-05-2008
		Page 1	of 1
Test designation MODE TRANSITIONS	Test Procedure TP-189	Issue 2	Rev. -
Test step changed 67	Reason for Change Stby OBCP not triggered		
<p>Accordinging NCR 4738 (standby OBCP not triggered)</p> <p>PACS is switched to standby</p> <p>#P-2 - #SED-TP-0206 chapter 7.1.8</p>			
Prepared by: C. Koch	Resp. Test Leader	Project Engineer	
PA/QA D. LAMONBY / R. BOUSSENS	Prime	Customer	

Procedure Variation Summary

	Test Change	Curr. No.: 10	Date 01/05/2008	Page 1 of 1
Test designation <i>Mode Transition</i>	Test Procedure <i>TP - 189</i>	Issue <i>2</i>	Rev.	
Test step changed <i>After step 90</i>	Reason for Change <i>to save the test data</i>			
<p><i>change TM rate to 1.5 Mbit</i></p> <p><i>Dump Packet store Dump</i></p> <p><i>change TM rate back to 150 Kbps</i></p>				
Prepared by: <i>C. Mach</i>	Resp. Test Leader <i>C. Mel</i>	Project Engineer		
PA/QA <i>R. Gossens</i>	Prime	Customer		

8.1 Procedure Variation Summary

		Test Change	Curr. No.: #12 Date 1-3-08 Page 1 of 1	
Test designation MODE TRANSITIONS		Test Procedure TP-0189	Issue 2	Rev.
Test step changed During Step 109 Step 109		Reason for Change Try to get T _{min} to 5 kbps		
<p>Send to DC 170110 ↓ wait for 5 kbps T_{min} Send to DC 810180 (Ping!)</p>				
Prepared by: <i>[Signature]</i>		Resp. Test Leader	Project Engineer	
PA/QA <i>R. GOSSENS</i>		Prime	Customer	

Table 8.1-1: Procedure Variation Sheet

8.1 Procedure Variation Summary



	Test Change	Curr. No.: 13	
		Date 1/5/08	
		Page 1 of 1	
Test designation MODE TRANSITIONS	Test Procedure TP-0189	Issue 2	Rev.
Test step changed 113	Reason for Change TIMING PROBLEM		
<p>RECORDED THE TEST SCRIPT WROTE-OKME with PARAS AB 1</p> <p>THERE WAS A TIMING PROBLEM</p>			
Prepared by: 	Resp. Test Leader	Project Engineer	
PA/QA 	Prime	Customer	

Table 8.1-1: Procedure Variation Sheet

8.1 Procedure Variation Summary

	Test Change	Curr. No.: 16 Date 1.5.08 Page 1 of 1	
Test designation Mode Transition	Test Procedure TP-0189	Issue 2	Rev. -
Test step changed 116	Reason for Change DUMP PACKET STORE MEMORY		
<p>Change TM RATE to 1.5 Mbit ✓ Dump packet store memory ✓ change back to 500 bps 5Kbps Disable thermal control ✓</p>			
Prepared by: C. Huel	Resp. Test Leader C. Huel	Project Engineer	
PA/QA R. Grossens	Prime	Customer	

Table 8.1-1: Procedure Variation Sheet

8.1 Procedure Variation Summary

	Test Change	Curr. No.: 15 Date 2.5.08 Page 1 of 1	
Test designation Mode Transitions	Test Procedure TP-0189	Issue 2	Rev. -
Test step changed after 115	Reason for Change RE-ENABLE THERMAL CONTROL LOOPS		
<p>Re enable thermal control loops Loop Index (2,3,4,5,6,8,9,10,11,13,14...18, 20...30, 32...48, 50..54)</p>			
Prepared by: C. Much	Resp. Test Leader C. Much	Project Engineer	
PA/QA D. LAMONBY	Prime	Customer	

Table 8.1-1: Procedure Variation Sheet

8.1 Procedure Variation Summary

	Test Change	Curr. No.: 16 Date 25.08 Page of	
Test designation Mode Transitions	Test Procedure TP0189	Issue 2	Rev. —
Test step changed after 115	Reason for Change Set STR1 back to healthy state		
<p>STR1 is unhealthy, to declare it healthy again the following TCs were send.</p> <ul style="list-style-type: none"> - STR1 healthy SGM#B [ACYE8109] - select STR1 [ACZ00109] 			
Prepared by: C. Mach	Resp. Test Leader C. Mach	Project Engineer	
PA/QA D. LAMONBY	Prime	Customer	

Table 8.1-1: Procedure Variation Sheet

Procedure Variation Summary

	Test Change	Curr. No.: 17	Date 02-05-2008
		Page 17	of
Test designation MODE TRANSITIONS	Test Procedure TP-0189	Issue 2	Rev. -
Test step changed after 115	Reason for Change Procedure Update		
<p style="font-size: 1.2em;">Delete the TCs in the HTL with "overtime period"</p>			
Prepared by:	Resp. Test Leader C. MUCH	Project Engineer	
PA/QA D. LAMONBY	Prime	Customer	

Procedure Variation Summary

	Test Change	Curr. No.: 18	Date 02-05-2008	Page 1 of
Test designation MODE TRANSITIONS	Test Procedure TP-0189	Issue 2	Rev. -	
Test step changed 119	Reason for Change remove overdue TCs			
<p>Send Tc to empty the MTL from overdue TCs by sending DC82F170. (see SPR 511)</p>				
Prepared by: D. LAMONBY	Resp. Test Leader C. MUCH	Project Engineer		
PA/QA D. LAMONBY	Prime	Customer		

Procedure Variation Summary

	Test Change	Curr. No.: 19	Date 02-05-2008
		Page	of
Test designation MODE TRANSITIONS	Test Procedure TP-0189	Issue 2	Rev. -
Test step changed after 115	Reason for Change Procedure Update.		
<p>Perform the following steps with "Config 25"</p> <p>① Execute H-dbb-setup-for-SIT in A102105 SPVT102-ACNS-ops.</p> <p>② in Menu 5.0 SCM Phase.</p> <ul style="list-style-type: none"> - Select 77. Jump to another Entry Point - click continue. - Select SAP Menu 			
Prepared by:	Resp. Test Leader C. MUCM	Project Engineer	
PA/QA D. LAMONBY	Prime	Customer	

Procedure Variation Summary

	Test Change	Curr. No.: #20	Date 02-05-2008
		Page 1	of
Test designation MODE TRANSITIONS	Test Procedure TP-0189	Issue 2	Rev. -
Test step changed 131	Reason for Change Get RWL 2 out of sticktion region		
<p>RWL₂ is in sticktion region .</p> <p>Re bias the RWS .</p> <p>ACMS-CONFIG 25</p> <p>1) goto OCM , option 2</p> <p>In OCM phase menu</p> <p>2) goto SCM , option 3</p>			
Prepared by: M. THEUNISSEN	Resp. Test Leader C. MUCH	Project Engineer	
PA/QA D. LAMONBY	Prime	Customer	

Procedure Variation Summary

	Test Change	Curr. No.: 21	Date 02-05-2008
		Page	of
Test designation MODE TRANSITIONS	Test Procedure TP-0189	Issue 2	Rev. -
Test step changed "F. turn ON" Step 132	Reason for Change Thermal control is active that causes FCCT update to prevent FDR of thermal control at ambient.		
<p>I - check FCCT value using D142155 CVT204 SP/ECOTZ FCCT</p> <p>II - update using TC (8, 5, 11, 6, 7) and FCCT check Program - DCT 68170</p> <p> (1) CH1058 param 16 → 25°C range (2) CH1057 " → 25°C range (3) CH1065 " → 35°C range (4) CH1058 " → 35°C range } Dec 1105 70 33 52 Dec 1105 13 12 64 </p> <p>III - check FCCT value using SP/ECOTZ</p> <p style="margin-left: 40px;">To check that last parameter of above step 132 has been updated to appropriate value.</p> <p style="text-align: center; margin-top: 20px;">successful</p>			
Prepared by:	Resp. Test Leader C. MUCH	Project Engineer	
PA/QA D. LAMONBY	Prime <i>[Signature]</i>	Customer	

Procedure Variation Summary

	Test Change	Curr. No.: 22	Date 02-05-2008
		Page 1	of
Test designation MODE TRANSITIONS	Test Procedure TP-0189	Issue 2	Rev. -
Test step changed	Reason for Change Check that all OBCP's are Loaded		
<p>DCT 76170 [Rept on Board OBCP's]</p> <p>Before switching on PHCS check was performed if all OBCP's are loaded.</p>			
Prepared by:	Resp. Test Leader C. MUCH <i>C. Much</i>	Project Engineer	
PA/QA <i>R. Grossman</i> D. LAMONBY	Prime	Customer	

Procedure Variation Summary

	Test Change	Curr. No.: # 23	Date 02-05-2008
		Page	of
Test designation MODE TRANSITIONS	Test Procedure TP-0189	Issue 2	Rev. -
Test step changed 132	Reason for Change Switch-off HIFI SET DFE uplink TO 4K		
<p>HIFI is switched back to off.</p> <p>The reason for switching off is that it was not possible to switch HIFI in stby mode.</p> <p>This is most probably related to CCS performance problems.</p> <p>This is caused by setting the DFE uplink to 128 kbps</p> <p>- set DFE uplink to 4k to solve the problem.</p>			
Prepared by:	Resp. Test Leader C. MUY	Project Engineer	
PA/QA R. Coossens D. LAMONT	Prime	Customer	

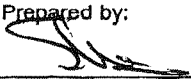
Procedure Variation Summary

	Test Change	Curr. No.: 24	Date 02-05-2008	Page	of
Test designation MODE TRANSITIONS	Test Procedure TP-0189	Issue 2	Rev. -		
Test step changed 132	Reason for Change HIFI to Standby				
<p>- switch on HIFI in STBY mode again, after "Go ahead" given by S. Hamer.</p> <p>- as the problem of fetching raw value from LEGSE occurs again.</p> <p>- switch off HIFI</p> <p>- switch off SPIRE + PHCS during the night</p>					
Prepared by: D. LAMONBY	Resp. Test Leader C. MUCH	Project Engineer			
PA/QA D. LAMONBY	Prime	Customer			

Procedure Variation Summary

	Test Change	Curr. No.: #25	Date 02-05-2008
		Page 1	of 1
Test designation MODE TRANSITIONS	Test Procedure TP-0189	Issue 2	Rev. -
Test step changed BEFORE 134	Reason for Change TO PREPARE SIC FOR ALIGNMENT ACTIVITIES		
<p style="margin-left: 40px;">0) SET TERMINATE TO 1.5 SECS</p> <p style="margin-left: 40px;">1) Dump packet stores SECS</p> <p style="margin-left: 40px;">2) Disable TCS SECS</p> <p style="margin-left: 40px;">3) perform steps 24+25 para 7.4.1 SECS of proc-134 15540 (ACMS to OCM, + Spin Down THE RAILS)</p>			
Prepared by: S. ELSLEY	Resp. Test Leader C. MUCH	Project Engineer	
PA/QA D. LAMON	Prime	Customer	

Procedure Variation Summary

	Test Change	Curr. No.: 26	Date 03-05-2008
		Page 1	of 1
Test designation MODE TRANSITIONS	Test Procedure TP-0189	Issue 2	Rev. -
Test step changed	Reason for Change NCR-4181.		
<p>1) Power ON PACS i.a.w. HP-2-ASED-TP-0206 Iss 1.2 02</p> <p>2) Connect CCS to NIFI I-EGSE i.a.w HP-2-ASED-TP-0206 Iss 1.2</p> <p>3) Power ON NIFI i.a.w. HP-2-ASED-TP-0206 Iss 1.2,</p> <p>4) If problems executing HIFIST... scripts (waiting for packet) terminate ALL SUBSCRIBE PARAMS TS Check if HIFIST... scripts now working.</p> <p>5) If step 4 unsuccessful abort HIFIST... and restart manually</p> <p>6) If step 5 still unsuccessful then reboot HPCCS and restart test session:</p> <ul style="list-style-type: none"> - RUN TS: 2010999MMXX002 UNITS - CHECK - Abort remainder of NIFI Power ON TS - Abort IST Mode Transitions TS - Abort ACS Config 25 TS - Verify CSLite up and running - Stop Test Session on CCS & Reboot - Start New Test Session: <ul style="list-style-type: none"> Name = 2008.05.03.08.07hpccsmehpws22 REALTIME MOD TRA-3 - Restart mode transition test i.a.w. PVS-27 - Complete NIFI Power on manually 1) Power on Connect to NIFI IEGSE & Patch HPSDB i.a.w 2) Power on stop with steps 2 & 5 of 7.3.1 of TP 0206 AVS 28 → 2) RUN TS: HIFIST-nom-Startup-LEU-table-load-warm 3) Check HM049190 = ENABLED 4) RUN TS: HIFIST-nom-Startup-LEU-table-read-warm 5) Check OBSID on I-EGSE (2024013/2415935507) PVS 6) Check HM249194 = OK 			
Prepared by: 	Resp. Test Leader C. MUCH	Project Engineer	
PA/QA D. LAMONB 7 D. LAMONB 7	Prime	Customer	



RVS26

7.1.2 PACS Prime OFF to Standby (SAFE)

The following will switch ON and configure PACS Prime instrument in SAFE mode in any satellite configuration (i.e. warm, or Cold Hel/Hell). HKTM packets will be generated on APIDs 1152 dec and 1154 decimal (these can be observed using TMPH with corresponding filter – note however a limited number of TMPHs should be running at any one time).

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	On HPCCS start Packet History displays for the following APIDs: 1152, 1154	OK	OK		7	
2.	From the HPCCS test conductor console start the test script to power PACS Prime to SAFE: Z102999SCVT010_ASDGEN_PACSPWRON_P		OK		7	
3.	On HPCCS when prompted: "FM PACS Switch ON in Warm or Cold conditions, FPU connected - Select NO to abort TS if not correct"	YES	YES		7	
4.	On HPCCS when prompted: " PACS FDIR OBCPs/EATs loaded and enabled? - If not select NO to abort TS"	YES	YES		7	

Enter Date Time:	3/31/08 05:40	Sign Off	TD:	PA: D. LAMONBY	Test Location:	ESTEC/ANORA
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Procedure

Herschel

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
	If in any doubt about the script being executed NO should be selected to abort the script. Before restarting consult the relevant instrument support engineer to confirm the correct script to be used for the test in question.					
	If YES is selected the test script will go on to automatically power on all PACS warm units, force boot the DPU ASW and configure the instrument to SAFE (Standby mode)					
5.	If AFO mode not already selected for CDMU the script P102999SCVT905_ASDISTPACS_PWR_ON_N will prompt that AFO will be commanded next. Click OK to continue the script if the prompt appears.	OK	N/A		✓	

Enter Date Time:	03/05/08	05:41	Sign Off	TD:	PA: D. LAMONBY	Test Location:	ESTEC N7DBA
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Doc. No: HP-2-ASED-TP-0206

Issue: 1.2

Date: 25.04.08

File: HP-2-ASED-TP-0206_Issue_1r2 Final.Doc



Procedure

Herschel

Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
6.	<p>On HPCCS when all autonomous actions have been completed by the power on script P102999SCVT905_ASDISTPACS_PWR_ON_N it will prompt:</p> <p><i>"Set Bus Profile Back to Original Setting?"</i></p> <p>Select YES if it is likely that other non-PACS instrument related activities are to be performed, otherwise select NO.</p>	NO	NO		✓	
7.	<p>If YES selected the original Bus Profile will be restored.</p> <p><i>However note that if the original Bus Profile was 0 (launch) the script will automatically leave the Bus Profile unchanged as this profile is not compatible with instruments being powered in Standby, in which case the following prompt will appear:</i></p> <p><i>"Bus Profile left unchanged, as original setting 0 (Launch)"</i></p> <p>If prompted select OK to continue</p>	OK	N/A		✓	

Enter Date Time:	3/5/08	05:53	Sign Off	TD:	PA: D. LAMONBY	Test Location:	ESTEC HYDRA
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Doc. No: HP-2-ASED-TP-0206

Issue: 1.2

Date: 25.04.08

File: HP-2-ASED-TP-0206_Issue_1r2 Final.Doc



Procedure

Herschel

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
8.	If NO selected then at the prompt: "Bus Profile left unchanged" Select OK to continue	OK	OK		✓	
9.	The script will automatically terminate	OK	OK		✓	
10.	Verify HK TM packets are being received on APIDs 1152 & 1154	OK	OK		✓	
11.	Either using the ANDs indicated verify the correct status of the following PACS specific TM parameters or if the IEGSE is connected request IEGSE Operator to confirm that PACS is in SAFE mode: DM_BOL_REC_PAC (PM038420) is incrementing	Incrementing	Incrementing	AND: PA019420	✓	
12.	PACS in SAFE mode. Return to calling Procedure	OK	OK		✓	

Enter Date Time:	3/5/08	05:58	Sign Off	TD:	PA: D. LAMONBY	Test Location:	ESTEC HYDRA
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Doc. No: HP-2-ASED-TP-0206

Issue: 1.2

Date: 25.04.08

File: HP-2-ASED-TP-0206_Issue_1r2 Final.Doc



PVS26

7.3 HIFI Instrument Full Configuration Procedures

7.3.1 HIFI I-EGSE Configuration/Connection

This procedure is independent of HIFI redundancy configuration apart from I-EGSE configuration in step 1.

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	<p>If not already on, Switch on & configure HIFI I-EGSE i.a.w. RD-6.</p> <p>If switching on Nominal units then confirm I-EGESE configured for nominal and FPU cold and LOU warm without attenuators</p> <p>If switching on Redunant units then confirm I-EGESE configured for redundant and FPU cold and LOU warm without attenuators</p>	<p>OK</p> <p>Nominal/Redundant configuration</p>	Nominal		✓	
2.	<p>From HPCCS Test Conductor console issue command to connect to HIFI I-EGSE</p> <p>connect HHIFIEGSE</p>	<p>YZS27940 = CONNECTED</p>	CONNECTED	AND SYS_PARS	✓	
	<p><i>Perform the following two steps if command parameter exchange is required between the IEGSE and HPCCS for the test concerned.</i></p>					

Enter Date Time:	31/5/08.	Sign Off	TD:	PA: D. UMANBY	Test Location:	STEC N102A
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Procedure

Herschel

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
3.	If not already running from the HPCCS test conductor console execute the test script: ALL_SubscribeParams	OK	Already running		1	
4.	Verify HPCCS-IEGSE connection by sending the following test command from manual command stack (repeater value 0) and verify received OK on IEGSE: YC00X962	OK	OK		1	
5.	Patch HIFI synthetic parameters for warm conditions by executing the following scripts: HIFIST_ASED_PatchPtvChecksum HIFIST_ASED_PatchTempLimits <i>Note these scripts replace HIFIST_CCS_conf_ptv_checksum_warm due to NCR-3652</i>	OK	OK		1	
6.	Return to calling Procedure		OK		1	

Enter Date Time:	3/5/08 06:09	Sign Off TD:		PA: D. VANOUSY	Test Location:	ESTEC N401A
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7.3.2 HIFI Nominal OFF to Standby1

The following will switch ON and configure HIFI Nominal instrument in Standby1 mode. HKTM packets will be generated on APIDs 1024 dec and 1026 decimal (these can be observed using TMPH with corresponding filter – note however a limited number of TMPHs should be running at one time).

During power on of HIFI a number of soft/hard OOLs are reported due to the sequential switch on of the units. Some of these are to be expected when in Hel conditions and the others are expected because the unit is typically cold at switch ON.

Parameters OOL when in Hel:

HM248191 – HF_AP_2K_IF_CT

HM243191 – HF_APR_SCCS_CT

HM244191 – HF_APR_S10K_CT

HM250191 – HF_AP_4K_END_CT

Parameters OOL expected to come back in limits when units warmed up:

HM187192 – HRV_ACS_1_T

HM188192 – HRV_AVS_2_T

HM062192 – HRH_ACS_1_T

HM063192 – HRH_AVS_2_T

Parameter OOL until HIFI powered in Standby1

HD247194 – HL_ptv_checksum

HM258194 – HL_MODE_S

HM259194 – HL_error_word_S

Enter Date Time:			Sign Off	TD:	PA:	Test Location:	
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Some additional parameters may exhibit OOL during the test:

Parameter OOL expected during test but which should be monitored for duration of test (should be kept below 30degC to avoid HIGH-HIGHs being reported):

HM062193 – HWV_Laser_T

HM023193 – HWH_Laser_T

Parameter OOL expected during test but which need not be monitored:

HM022193 – HWH_CCD_T

HM061193 – HWV_CCD_T

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	On HPCCS start Packet History displays for the following APIDs:1024,1026	OK	OK		✓	
2.	From the HPCCS test conductor console start the test script: Z102999SCVT014_ASDGEN_HIFIPWRON_P	OK	OK	ANDs HA000289 HA004289	✓	
3.	On HPCCS when prompted: "FM HIFI Switch ON for IST or SFT in Hel/Hell conditions with warm LOU - Select NO to abort TS if not correct"	YES	YES		✓	

Enter Date Time:	3/5/08	06:13	Sign Off	TD: [Signature]	PA: D. WAINSBY	Test Location:	ESTEC MIDRA
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Doc. No: HP-2-ASED-TP-0206

Issue: 1.2

Date: 25.04.08

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Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
	If in any doubt about the script being executed NO should be selected to abort the script when prompted in the next step. Before restarting consult the relevant instrument support engineer to confirm the correct script to be used for the test in question.					
	If YES is selected the test script will go on to automatically power on all HIFI warm units, force boot the DPU ASW and configure the instrument to Standby. NB: In principle the HIFI instrument support responsible shall be on hand to observe the status of HIFI. So he should be contacted before the next test step.					
4.	At prompt to record OBS_ID_per_hk during subsequent table readback commanding (which starts when OK is pressed); record value of HM003190 (typical reading = 9000xxxx hex), Note: at start & end value is 90000000 hex "Select OK to continue" Select OK	OK	OK		✓	

P
PVS 27
PVS 28
PVS 29
Steps 1-5

Enter Date | Time: 03/05/08 06:43 Sign Off TD: [Signature] PA: D. LAMONBY Test Location: ESTEC HYDRA

Doc. No: HP-2-ASED-TP-0206

Issue: 1.2

Date: 25.04.08

File: HP-2-ASED-TP-0206_Issue_1r2 Final.Doc



Procedure

Herschel

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
5.	Value of OBS_ID during table read commanding: HM003190		Hex=90004013 Dec=24159355	AND: HA000289	✓	
6.	Request I-EGSE operator to run the command 'verifyreadback <OBSID>' from a terminal window (opened from the terminal icon ">_" at bottom left of HIFIEGSE workstation screen) using the <OBSID> retrieved in the previous step. If the word PASS does not appear on the screen at the end of the verifyreadback, this is a nogo on this test procedure. If OK respond to prompt accordingly, otherwise contact SRON to investigate and resolve before continuing.	OK	OK		✓	
7.	On HPCCS when all autonomous actions have been completed by the power on script H102999SCVT015_ASDISTHIFI_PWR_ON_P it will prompt: "Set Bus Profile Back to Original Setting?"	NO	NO		✓	

Enter Date Time:	03/08/08 10:18	Sign Off	TD:	PA: D. LAMONBY	Test Location: ESTEC/ATDRA
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Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
8.	<p>Select YES if it is likely that other non-HIFI instrument related activities are to be performed.</p> <p><i>However note that if the original Bus Profile was 0 (launch) the script will automatically leave the Bus Profile unchanged as this profile is not compatible with instruments being powered in Standby:</i></p> <p>"Bus Profile left unchanged, as original setting 0 (Launch)"</p> <p>Select OK to continue</p>	OK	N/A		✓	
9.	<p>If NO selected then at the prompt:</p> <p>"Bus Profile left unchanged"</p> <p>Select OK to continue</p>	OK	OK		✓	
10.	<p>Verify HK TM packets are being received on APIDs 1024 & 1026</p>	OK	OK		✓	
11.	<p>Start Active Cooling of HIFI Panel i.a.w. AD-2</p>	OK	OK		✓	

Enter Date | Time: 31/08-10:18 | Sign Off TD: [Signature] | PA: D. LAMONBY | Test Location: ESTEC WDR A

Doc. No: HP-2-ASED-TP-0206

Issue: 1.2

Date: 25.04.08

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Procedure

Herschel


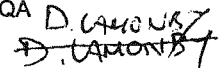
Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
12.	Using TM Plot application on CCS start monitoring the temperature of the WBS lasers; parameters: HM062193 (HWV_Laser_T) & HM023193 (HWH_Laser_T). See Section 5.3.2.1 for details of this activity.	OK	Monitored on AND		?	
13.	HIFI Nominal powered and in Standby1 mode Return to calling procedure	OK	OK		?	

Enter Date Time:	03/05/08	10:18	Sign Off	TD: <i>[Signature]</i>	PA: D. LAMONBY	Test Location:	ESTEC HIFI/A
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Procedure Variation Summary

	Test Change	Curr. No.: 27	Date 02-05-2008
		Page 1	of
Test designation MODE TRANSITIONS	Test Procedure TP-0189	Issue 2	Rev. -
Test step changed	Reason for Change VCR 4181		
<div style="display: flex; align-items: flex-start;"> <div style="width: 20px; text-align: center; margin-right: 5px;">⊗</div> <div style="width: 10px; border-left: 1px solid black; margin-left: 5px; margin-right: 5px;"></div> <div style="width: 100%; padding-left: 10px;"> <p>Due to session shut down. Restart z..IST-Modetransition and skip until. "Preparation for EHM-to-SHM". if instruments are switched on skip the instrument power on sequences. and continue.</p> <hr/> <p>For #CMS operation jump to Main Menu F.O. OCM Phase. Check with engineering / #CMS experts if transition back to SHM is needed.</p> <hr/> <p>⊗ <u>Patch the locally modified scripts</u></p> </div> </div>			
Prepared by:	Resp. Test Leader C. MUCH	Project Engineer	
PA/QA D. CAMONBY D. CAMONBY	Prime	Customer	

Procedure Variation Summary

	Test Change	Curr. No.: 28	Date 02-05-2008
		Page 1	of 1
Test designation MODE TRANSITIONS	Test Procedure TP-0189	Issue 2	Rev. -
Test step changed PVS26 Step 6-2	Reason for Change NCR-4181 continued		
<p>PVS26 Step 6-2 still did not find expected parameter/packet in the restart TS. All-Subscribe Parameters not to see if this resolves the problem.</p> <p>If no change then terminate TS</p> <p>✓ HIST_nom-Startup-Load-table-load-warm and restart.</p>			
Prepared by: 	Resp. Test Leader C. MUCH	Project Engineer	
PA/QA D. LAMONT 	Prime	Customer	

Procedure Variation Summary

	Test Change	Curr. No.: 29	Date 03-05-2008
Test designation Mode Transitions 2b	Test Procedure TP-0189	Page 2	of 2
Test step changed	Reason for Change TMTCDFE PROBLEMS		
<p style="text-align: center;">DISCONNECTED TMTCDFE FROM CCS</p> <ul style="list-style-type: none"> 7 - disconnected TMTCDFE from CCS 7 - Resynchronized TMTCDFE with CCS. 7 - connected TMTCDFE to CCS. 7 - Executed D:102459SCRIPT032TIME SYNCRO. 7 - Complete PVS26 7 - Power on SPIRE using HP-2-ASEJ-TP-026 ISS 1.2 7 - Set Bus Profile back to starting condition for Mode Transitions. 			
Prepared by: <i>W/S Home</i>	Resp. Test Leader C.MUCH	Project Engineer	
PA/QA <i>R. Grossen J.</i>	Prime	Customer	



PVS#29 7.2.2 SPIRE Prime OFF to Standby (REDY)

The following will switch ON and configure SPIRE Prime instrument in REDY (Standby) mode. HKTM packets will be generated on APIDs 1280 dec and 1282 decimal (these can be observed using TMPH with corresponding filter – note however a limited number of TMPHs should be running at one time).

During power on of SPIRE a number of soft/hard OOLs are reported due to the sequential switch on of the units. This is expected and will clear when SPIRE is in REDY mode. When in REDY mode one parameter remains OOL (soft) namely SMD2V505 this is also expected.

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	On HPCCS start Packet History displays for the following APIDs:1280,1282	OK	OK		✓	
2.	From the HPCCS test conductor console start the test script to power SPIRE Prime to REDY: Z102999SCVT004_ASDGEN_SPIREPWRON_P	OK	OK		✓	
3.	On HPCCS when prompted: "SPIRE Switch ON for IST activities in any conditions - Select NO to abort TS if not correct"	YES	YES		✓	

Enter Date Time:	03/05/08 - 10:34	Sign Off TD:	[Signature]	PA:	D. JAMESBY	Test Location:	ESTEC NW2A
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Procedure

Herschel

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
4.	If in any doubt about the script being executed NO should be selected to abort the script. Before restarting consult the relevant instrument support engineer to confirm the correct script to be used for the test in question.					
5.	If YES is selected the test script will go on to automatically power on all SPIRE warm units, force boot the DPU ASW and configure the instrument to REDY (Standby mode).					
6.	On HPCCS when all autonomous actions have been completed by the power on script S102999SCVT017_ASDGENSPIR_PWR_ON_P it will prompt: <i>"Set Bus Profile Back to Original Setting?"</i>	NO	NO		✓	

Enter Date | Time: 03/05/08 10:41 | Sign Off TD: [Signature] | PA: D. LAMONBY | Test Location: ESTEC + MIRA

Doc. No: HP-2-ASED-TP-0206

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Issue: 1.2

Date: 25.04.08

File: HP-2-ASED-TP-0206_Issue_1r2 Final.Doc



Procedure

Herschel

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
7.	Select YES if it is likely that other non-SPIRE instrument related activities are to be performed. <i>However note that if the original Bus Profile was 0 (launch) the script will automatically leave the Bus Profile unchanged as this profile is not compatible with instruments being powered in Standby:</i> "Bus Profile left unchanged, as original setting 0 (Launch)"	OK	NIA		✓	
8.	If NO selected then at the prompt: "Bus Profile left unchanged" Select OK to continue	OK	OK		✓	
9.	Verify HK TM packets are being received on APIDs 1280 & 1282		OK		✓	
10.	Either using the ANDs indicated verify the correct status of the following SPIRE specific TM parameters or if the IEGSE is connected request IEGSE Operator to confirm that: THSK (SM00T500) parameter refreshing @ 0.25 Hz	OK	OK	AND: SA_1_559	✓	

Enter Date Time:	3/5/08	10:47	Sign Off	TD:	PA: D. LAMONBY	Test Location:	ESTEC HYDRA
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Procedure

Herschel

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
	TM1N and TM2N parameters are incrementing as indicated: TM1N (SMT0N500) by 2 every 4 secs TM2N (SMT1N500) by 1 every 4 secs MODE parameter is set to "REDY" mode (RAW value 0x0200)	OK SM00M500 = 0x0200 (REDY)	OK REDY		✓	
11.	SPIRE powered and in REDY mode Return to calling Procedure		OK		✓	

Enter Date Time:	31/5/08	10:47	Sign Off TD:		PA: D. LAMONBY	Test Location:	ESTEC HYDRA
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Procedure Variation Summary

	Test Change	Curr. No.: # 29 30	12
		Date 03-05-2008	
		Page 1 of 1	
Test designation Mode Transitions 2b	Test Procedure TP-0189	Issue 2	Rev. -
Test step changed	Reason for Change unclear MTL status		
<p>Send the following commands:</p> <ul style="list-style-type: none"> - stop MTL service - start MTL service, "force rebuild", no release <p>Reason for this: it is unclear if MTL runs correct. ⇒ MTL status unclear, therefore send TC's</p> <ul style="list-style-type: none"> - STOP MTL service - Reset MTL service - start MTL service <p style="text-align: right;">D102159SCVT209_start - on-board schedule</p>			
<p>⊗ Declare STR 1 healthy</p>			
Prepared by: C Much	Resp. Test Leader C.MUCH	Project Engineer	
PA/QA R. Coorsens	Prime	Customer	

Procedure Variation Summary

	Test Change	Curr. No.: #3012	
		Date 03-05-2008	
		Page 1 of 1	
Test designation Mode Transitions 2b	Test Procedure TP-0189	Issue 2	Rev. -
Test step changed 131	Reason for Change TRANSITION to scm fails		
<p>#S transition to OCM SCM fails:</p> <p>⇒ Transition to OCM [5] of config 25 spin down the wheels</p> <p>→ transition to SCM, during RWL spinning</p> <p>→ call asgmc #102109 SPVT087 - #CHS_IST-FN "obdb"</p> <p>→ When external script TRANSITION-TO-SEM fails, (from TOPE)*, command AEE in SEM (pointing between SON and EARTH). Quotation from A... 087-AMS-IST-FN "5.8.5.11"</p> <p>* OR: from TEST CONDUCTOR CONSOLE callasgmc A... 087-AMS-IST-FN "5.8.5.11"</p>			
Prepared by: C. Much/	Resp. Test Leader C.MUCH	Project Engineer	
PA/QA R Goossens	Prime	Customer	

Procedure Variation Summary

	Test Change	Curr. No.: # 31 32 ^R	Date 03-05-2008	Page 1 of 1
Test designation Mode Transitions 2b	Test Procedure TP-0189	Issue 2	Rev. -	
Test step changed 137	Reason for Change Switch HIFI to Standby 1			
<p>During the Transition NOM-EAM OBCP does not bring HIFI from SCIENCE to Standby mode.</p> <p>Therefor</p> <p>Therefore Hifi is switched to standby using "TR 0206 issue 2"</p>				
Prepared by: C. Much	Resp. Test Leader C. MUCH	Project Engineer		
PA/QA R. Goussens	Prime	Customer		

Procedure Variation Summary

	Test Change	Curr. No.: # 33	
		Date 03-05-2008	
		Page 1 of 1	
Test designation Mode Transitions 2b	Test Procedure TP-0189	Issue 2	Rev. -
Test step changed 139	Reason for Change		
<p>- change Bus profile from 2 [HIFI] ✓ to 1 [E#M]</p> <p>- switch off XPND2 TWTH#1 ✓</p> <p>- XPND RX Rate to 125 Kbps ✓</p> <p>- switch TX1 off</p> <p>- RF DN FIRE SW1 #</p> <p>- XPND2 off</p> <p>- TX1 on</p> <p>- TWTH#1 on</p> <p>⊗ RF DN ARM SW1 POS #</p>			
Prepared by: C. Much	Resp. Test Leader C. MUCH	Project Engineer	
PAQA R. Coossens	Prime	Customer	

Procedure Variation Summary

	Test Change	Curr. No.: #34	Date 03-05-2008	Page 1 of 1
Test designation Mode Transitions 2b	Test Procedure TP-0189	Issue 2	Rev. -	
Test step changed	Reason for Change <i>upload EAT</i>			
<p><i>Upload EAT before step 146 (this should be added to spec.)</i></p> <p><i>D102 159 SCVT192_GET_EAT_Report</i></p>				
Prepared by: <i>C. Much</i>	Resp. Test Leader C.MUCH	Project Engineer		
PA/QA <i>R. Boossens</i>	Prime	Customer		

Procedure Variation Summary

	Test Change	Curr. No.: #35	Date 03-05-2008
Test designation Mode Transitions 2b	Test Procedure TP-0189	Page 1 of 1	Issue 2
Test step changed	Reason for Change RESET CIR + REGRN ACMS-IST		
<p style="font-size: 1.2em;">Reset CIR</p> <p style="font-size: 1.2em;">Regrn #102109SPVT087-ACMS-IST-FN</p> <p style="text-align: right; font-size: 1.2em;">, 5.8.5.11</p>			
Prepared by: <i>C. Much</i>	Resp. Test Leader C.MUCH	Project Engineer	
PA/QA <i>R. Goosen</i>	Prime	Customer	

Procedure Variation Summary

	Test Change	Curr. No.: # 36	
		Date 03-05-2008	
		Page 1 of 1	
Test designation	Test Procedure	Issue	Rev.
Mode Transitions 2b	TP-0189	2	-
Test step changed	Reason for Change		
	<i>Recovery from PACS OBCP fail</i>		
<p><i>For recovering from PACS OBCP triggering</i></p> <ul style="list-style-type: none"> <i>- enable/disable TC routing</i> <i>- PACS → Standby</i> <i>- PACS standby → Buust</i> <i>- start MTL</i> 			
Prepared by:	Resp. Test Leader	Project Engineer	
<i>C. Much</i>	C.MUCH		
PAQA	Prime	Customer	
<i>R. Coossens</i>			

8.3 Sign-off Sheet

To finalise the test campaign, all responsible personnel shall sign off the filled-in procedure in the following table:

	Date	Signature
Test Director	3/5/08	S. MOONEY
Test Conductor	3/5/08	C. MUGH
PA Responsible	3/5/08	J. HALL

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Annex: Script Hierarchy

===== 5.8.5 MODE TRANSITIONS =====

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|-----> Z010999MCMVT153_IST_STATUS 5.8.5.3
|-----|-----> ACMS_get_RM_status RMA
|-----|-----> ACMS_get_RM_status RMB
|-----> W102584SPVT102_PCDU_TRANSITION_MODE_TR 1
|-----> D102159SCVT086_LAUNCH_LAUNCH_IST
|-----> Z010999MCMVT153_IST_STATUS 5.8.5.4
|-----|-----> ACMS_get_RM_status RMA
|-----|-----> ACMS_get_RM_status RMB
|-----> D102159SCVT163_IST_MM_LAN_SAM
|-----|-----> D102159SCVT123_TM_LINK_150_KBPS
|-----|-----> Y102989ECVT006_TTC_DL_PORT_SET LGA1
|-----|-----|-----> Y102989ETVT019_TTC_SCOE_ACTIVITY
|-----|-----> Y102989ECVT006_TTC_DL_PORT_SET LGA1
|-----|-----|-----> Y102989ETVT019_TTC_SCOE_ACTIVITY
|-----|-----> Z010999MMXX002UNITS_CHECK
|-----> Z010999MCMVT153_IST_STATUS 5.8.5.5
|-----|-----> ACMS_get_RM_status RMA
|-----|-----> ACMS_get_RM_status RMB
|-----> W102584SPVT102_PCDU_TRANSITION_MODE_TR 2
|-----> K102999ECVT001_ASDGENCCU_MnDBOTH2
|-----> K102999ECVT001_ASDGENCCU_MnEBOTH1
|-----> D102159SCVT162_IST_MM_SAM_SAM
|-----|-----> Z102999SCVT001_SREM_ON 60
|-----|-----|-----> Z102999SCVT003_SREM_ACQ_START $argv
|-----|-----> D102159SCVT123_TM_LINK_150_KBPS
|-----> Z010999MCMVT153_IST_STATUS 5.8.5.6
|-----|-----> ACMS_get_RM_status RMA
|-----|-----> ACMS_get_RM_status RMB
|-----> D102159SCVT123_TM_LINK_150_KBPS
|-----> W102584SPVT102_PCDU_TRANSITION_MODE_TR 3
|-----> D102159SCVT164_IST_MM_SAM_NOM
|-----|-----> Z010999MMXX002UNITS_CHECK
|-----> Z010999MCMVT153_IST_STATUS 5.8.5.7
|-----|-----> ACMS_get_RM_status RMA
|-----|-----> ACMS_get_RM_status RMB
|-----> D102159SCVT161_IST_MM_NOM_NOM
|-----|-----> Z102999SCVT002_SREM_OFF
|-----|-----> Z102999SCVT014_ASDGEN_HIFIPWRON_P
|-----|-----> Z102999SCVT004_ASDGEN_SPIREPWRON_P
|-----|-----|-----> S102999SCVT017_ASDGENSPIR_PWR_ON_P
|-----|-----|-----|-----> SPIRE-IST-DBG-OFF2DPUON-SP
|-----|-----|-----|-----> SPIRE-IST-DBG-DPUON2STBY
|-----|-----|-----|-----> SPIRE-IST-DBG-LOAD-VM-TABLES
|-----|-----|-----|-----> Z010999MMXX002UNITS_CHECK

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|-----|-----> Z102999SCVT010_ASDGEN_PACSPWRON P
|-----|-----> Z102999SCVT019_ASDGEN_PACSNomSpect
|-----|-----|-----> async P102999SCVT904_ASDDDBGPACS_NomSpect
|-----|-----> D102159SCVT202_IST_MTL_PING_TEST 3 120
|-----> Z010999MCVT153_IST_STATUS 5.8.5.8
|-----|-----> ACMS_get_RM_status RMA
|-----|-----> ACMS_get_RM_status RMB
|-----> D102159SCVT167_IST_MM_NOM_EAM
|-----|-----> Z102999SCVT001_SREM_ON 60
|-----|-----|-----> Z102999SCVT003_SREM_ACQ_START $argv
|-----> Z010999MCVT153_IST_STATUS 5.8.5.9a
|-----|-----> ACMS_get_RM_status RMA
|-----|-----> ACMS_get_RM_status RMB
|-----> A102109SPVT087_ACMS_IST_FN cir_5.8.5.9
|-----|-----> ACMS_get_RM_status RMA
|-----|-----> ACMS_get_RM_status RMB
|-----|-----> ACMS_event_buffer_dump sigma
|-----|-----> ACMS_event_buffer_dump sgmb
|-----> Z010999MCVT153_IST_STATUS 5.8.5.9b
|-----|-----> ACMS_get_RM_status RMA
|-----|-----> ACMS_get_RM_status RMB
|-----> A102109SPVT087_ACMS_IST_FN 5.8.5.10
|-----|-----> ACMS_get_RM_status RMA
|-----|-----> ACMS_get_RM_status RMB
|-----|-----> ACMS_event_buffer_dump sigma
|-----|-----> ACMS_event_buffer_dump sgmb
|-----> D102159SCVT168_IST_MM_EAM_EAM
|-----> Z010999MCVT153_IST_STATUS 5.8.5.10
|-----|-----> ACMS_get_RM_status RMA
|-----|-----> ACMS_get_RM_status RMB
|-----> A102109SPVT087_ACMS_IST_FN 5.8.5.11
|-----|-----> ACMS_get_RM_status RMA
|-----|-----> ACMS_get_RM_status RMB
|-----|-----> ACMS_event_buffer_dump sigma
|-----|-----> ACMS_event_buffer_dump sgmb
|-----> D102159SCVT169_IST_MM_EAM_NOM
|-----|-----> Z102999SCVT008_ASDGEN_SPIRESTBY2OPS
|-----|-----|-----> async S102999SCVT911_ASDDBGSPIR_STBY2OPS
|-----|-----|-----> SPIRE-IST-DBG-STBY2OPS
|-----|-----> Z102999SCVT002_SREM_OFF
|-----> Z010999MCVT153_IST_STATUS 5.8.5.11
|-----|-----> ACMS_get_RM_status RMA
|-----|-----> ACMS_get_RM_status RMB
|-----> A102109SPVT087_ACMS_IST_FN 5.8.5.12
|-----|-----> ACMS_get_RM_status RMA
|-----|-----> ACMS_get_RM_status RMB
|-----|-----> ACMS_event_buffer_dump sigma
|-----|-----> ACMS_event_buffer_dump sgmb
|-----> D102159SCVT170_IST_MM_NOM_SM

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|-----|-----> Z102999SCVT001_SREM_ON 60
|-----|-----|-----> Z102999SCVT003_SREM_ACQ_START $argv
|-----|-----> K102999ECVT001_ASDGENCCU_MnDBOTH1
|-----|-----> K102999ECVT001_ASDGENCCU_MnEBOTH2
|-----|-----> D102159SCVT175_SET_SURV_REG 0x0202F7 0xF70101
|-----|-----> D102159SCVT003DISTHERMALCONTROL
|-----|-----> D102159SCVT123_TM_LINK_150_KBPS
|-----> Z010999MCVT153_IST_STATUS 5.8.5.12
|-----|-----> ACMS_get_RM_status RMA
|-----|-----> ACMS_get_RM_status RMB
|-----> D102159SCVT171_IST_MM_SM_SM
|-----|-----> R102479ETVT011_RFDN_CONF_CHECK_TWTA A B B A
|-----|-----> H102999SCVT001_ASDDBGHIFI_PWR_ON_P
|-----|-----|-----> HIFIST_Startup_force_boot
|-----|-----|-----> HIFIST_Startup_OBS_SFT
|-----|-----|-----> HIFIST_Startup_FCU_on
|-----|-----|-----> HIFIST_Startup_WBS_lasertemp40
|-----|-----|-----> HIFIST_Startup_WBSH_on
|-----|-----|-----> HIFIST_Startup_WBSV_on
|-----|-----|-----> HIFIST_Startup_HRS_on
|-----|-----|-----> HIFIST_Startup_LCU_on
|-----|-----|-----> HIFIST_Startup_LCU_table_load
|-----|-----|-----> HIFIST_Startup_LCU_table_read
|-----|-----|-----> HIFIST_Startup_LO_Nominal
|-----|-----|-----> Z010999MMXX002UNITS_CHECK
|-----|-----> D102159SCVT175_SET_SURV_REG 0x77 0x770000
|-----|-----> D102159SCVT176_WRITE_CROME BA 1
|-----|-----> D102159SCVT003DISTHERMALCONTROL
|-----|-----> D102159SCVT123_TM_LINK_150_KBPS
|-----> Z010999MCVT153_IST_STATUS 5.8.5.13
|-----|-----> ACMS_get_RM_status RMA
|-----|-----> ACMS_get_RM_status RMB
|-----> D102159SCVT172_IST_MM_SM SAM
|-----|-----> D102159SCVT175_SET_SURV_REG 0x0202F7 0xF70101
|-----|-----> D102159SCVT176_WRITE_CROME AB 1
|-----|-----> D102159SCVT123_TM_LINK_150_KBPS
|-----|-----> R102479ETVT011_RFDN_CONF_CHECK_TWTA A B A B
|-----|-----> H102999SCVT001_ASDDBGHIFI_PWR_ON_P
|-----|-----|-----> HIFIST_Startup_force_boot
|-----|-----|-----> HIFIST_Startup_OBS_SFT
|-----|-----|-----> HIFIST_Startup_FCU_on
|-----|-----|-----> HIFIST_Startup_WBS_lasertemp40
|-----|-----|-----> HIFIST_Startup_WBSH_on
|-----|-----|-----> HIFIST_Startup_WBSV_on
|-----|-----|-----> HIFIST_Startup_HRS_on
|-----|-----|-----> HIFIST_Startup_LCU_on
|-----|-----|-----> HIFIST_Startup_LCU_table_load
|-----|-----|-----> HIFIST_Startup_LCU_table_read
|-----|-----|-----> HIFIST_Startup_LO_Nominal

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|-----|-----|-----> Z010999MMXX002UNITS_CHECK
|-----> Z010999MCVT153_IST_STATUS 5.8.5.14
|-----|-----> ACMS_get_RM_status RMA
|-----|-----> ACMS_get_RM_status RMB
|-----> D102159SCVT174_IST_REDUNDANT_CONF 0 0 A 0 0 0 0
|-----|-----> D102159SCVT104_ENCODER_SELECT $tmObt $tm_Enc_Config
|-----> D102159SCVT164_IST_SAM_NOM
|-----> D102159SCVT167_IST_NOM_EAM
|-----> D102159SCVT172_IST_MM_EAM_SAM
|-----> Z010999MCVT153_IST_STATUS 5.8.5.17
|-----|-----> ACMS_get_RM_status RMA
|-----|-----> ACMS_get_RM_status RMB
|-----> D102159SCVT164_IST_SAM_NOM
|-----> D102159SCVT177_IST_MM_NOM_SAM
|-----> Z010999MCVT153_IST_STATUS 5.8.5.18
|-----|-----> ACMS_get_RM_status RMA
|-----|-----> ACMS_get_RM_status RMB
|-----> Y102989ECVT001_TMTC_LINK TM SCPRI
|-----> Y102989ECVT001_TMTC_LINK TC TTC
|-----> R102479SPVT116_IST_DUMP_ON
|-----|-----> R102479ECVT006_XPND2_TC 1553 0 0 0 1 0 0 0 0 -4
|-----|-----> Y102989ECVT006_TTC_DL_PORT_SET MGA
|-----|-----|-----> Y102989ETVT019_TTC_SCOE_ACTIVITY
|-----|-----> R102479ECVT006_XPND2_TC 1553 0 0 1 0 0 0 0 -4
|-----|-----> Y102989ECVT001_TMTC_LINK BOTH TTC
|-----> Y102989ECVT001_TMTC_LINK BOTH SCPRI
|-----> Y102989ECVT001_TMTC_LINK BOTH SCPRI
|-----> Y102989ETVT020_TTC_SCOE_OFF
|-----|-----> Y102989ECVT018_TTC_TC_OP_METHOD OFFLINE
|-----|-----|-----> Y102989ETVT017_TTC_CHECK_ROUTINE
|-----|-----|-----> Y102989ETVT019_TTC_SCOE_ACTIVITY
|-----> Z010999MMXX002UNITS_CHECK
|-----> D102159SCVT126_LCL_OFF_BEF_SC_OFF
|-----> Z010999MMXX002UNITS_CHECK
|-----> K102999ECVT001_ASDGENCCU_MnDBOTH1
|-----> K102999ECVT001_ASDGENCCU_ABPWROFF
|-----|-----> K102999ECVT001_ASDGENCCU_MnDisDLC
|-----|-----> K102999ECVT001_ASDGENCCUB_POWEROFF
|-----|-----|-----> Z010999MMXX002UNITS_CHECK
|-----|-----> K102999ECVT001_ASDGENCCUA_POWEROFF
|-----|-----|-----> Z010999MMXX002UNITS_CHECK

```

10 Annex: Session Record

Test Description	MODE TRANSITIONS
Session ID	2008_04_30_16:50_hercdmu_hpws22_REALTIME_MOD.TRA-2
Start Time:	16:50 (30-04-08)
End Time	20:02 (03-05-08)
CVS Tag for Test	IST1-PART_1_TP_0189_ISS3_MODE_TRANSITIONS-END_003
Applicable IST Specification	HP-2-ASED-SP-0939
Test conductor	C. MUKH
QA Approval	D. LAMONBY
Test Description	
Session ID	
Start Time:	
End Time	
CVS Tag for Test	
Applicable IST Specification	
Test conductor	
QA Approval	
Test Description	
Session ID	
Start Time:	
End Time	
CVS Tag for Test	
Applicable IST Specification	
Test conductor	
QA Approval	

END OF DOCUMENT

Insert actual distribution list

Attachment 4 to Section 6.1.1:

As-Run Procedure HP-2-ASED-TP-0134

Title: **Leading Procedure for Herschel Integrated Satellite Test**

AS RUN 30/04/08

CI-No:

Mode TRANSITIONS 2nd RUN
(dry RUN)

session id = 2008-04-30-16-50 - hercdmu-hpws22 -
REALTIME-MOD-TRA-2

Prepared by:	Functional Team	Date:
Checked by:	C. Much	25/4/2008
Product Assurance:	J. Hall	25/4/2008
Configuration Control:	W. Wietbrock	
TASF Engineering	G. Beaufile po.	25 APR 08
TASF Test Director	S. Mooney	25/4/2008
Project Management:	Dr. W. Fricke APPROVED AS PROJECT MANAGER SIGNATURE FOR START OF TEST	28/4/08
Project Management	Denis Montet	28/4/08

29/04/08

Distribution: See Distribution List (last page)

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Change Record:

Issue	Date	Sheet	Description of Change	Release
1	11.01.2008		Initial version	1
1.1	04.02.2008		- see change bar	
1.2	27.02.2008		Update IST START step description according to AS RUN procedures, Add Operator note in Annex D, Add IST_GUI pictures, Update Hierarchy Script	
2.0	11.03.2008		5.4.3.1 Add CCS Light in EGSE Hardware Configuration 7.1.2 change all RFDN SM values from BBBB to ABBB (See procedure variations) 7.1.2 change value of "Bat.SCOE in table for launch clean run 7.1.2 change value of "TTR in SM" in table for "FDIR" and "Nom mode Robustness" 7.1.2 Correct SSMM configuration for ACMS commissioning 7.1.3 Step 1 add script name 7.1.3 Step 2 describe how to open window 7.1.3 Step 4 additional remark N/A for "Launch Clean Run" 7.1.3 Step 5 additional remark N/A for "Launch Clean Run" 7.1.3 Step 7 additional remark N/A for "Launch Clean Run" 7.1.3 Move Step 7b as 9b 7.1.3 Step 8-9 appears always (not only for launch cases) 7.1.3 step 20 add Operator Note 11 reference 7.1.3 step 22 deleted 7.1.3 step 23 added "Satellite state displayed" 7.1.3 step 29 remark deleted 7.1.3 step 33-34 Remark moved from step 34 to step 33 7.1.3 step 39 additional remark 7.1.4.1 step 9 add SPR 282 7.1.4.2 step 4 correct script name 7.1.4.2 step 5-6-7 clarify N/A 7.1.4.2 step 8 move remark to step 10 7.1.4.2 step 10 add SPR and NCR and expected TM(5,1) 7.1.4.2 step 13 add PM_reset TC Not Acknowledged 7.3 step 2 change YES to Confirm	

			<p>7.3 step 2 add "RWL ON" condition 7.3 step 5 correct typo 7.3 step 7 add out of limit comment 7.3 add step 12a 7.3 remove step24 7.3 move step21 after WRITE_CROME step 23 7.3.1 4th Step 31 Add event TM(5,1) expected during ACC OFF Annex D add Operator Note 11</p>	
			<p>Rename Chapter 7 as IST Test Create new subchapters 7.1 HPCCS configuration for IST Test 7.1.1 Apply Tag on test files</p>	
3	17.04.08		<p>Update IST START procedure according to the AS RUN procedure for Nominal Mode Robstness (minor changes),</p> <p>4.3.1 & 4.3.2 to include SCOE Sk01J04 and to correct hcu connector ident Typo's</p> <p>7.2.1 Insert IST Start overview test flow diagram</p> <p>7.2.2 update table 5.8.12 Nom Mode Robustness table to be i.a.w. the IST Specification</p>	
4	24.04.08		<p>Update IST START procedure according to the AS RUN procedure for minor updates,</p> <p>Include step 21 in Section 7.2.4 - start a CCU log file to monitor temperature TLM's</p>	

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1 Scope

This Test Procedure contains the overall IST start-up and shutdown procedures for the satellite covering all the defined test cases as well as being the entry point for calling the appropriate test configuration.

It also contains the supporting definition of the relevant supporting infrastructure and pre test conditions required for the IST tests to be performed correctly.

All pre-requisites for the Helium II procedures shall be incorporated into a future issue of this document.

1.1 Objective

This document is the entry point for the Integrated Satellite Test - IST - test cases to be executed as part of the overall IST campaign for the Herschel project.

This document shall act as the leading procedure, to become 'as run' procedure for each IST test case that is executed, and shall be identified on the front sheet in 'Red' before start of test. A new 'as run' copy of the procedure shall be used for each test run, and will become a accurate history of the test performed. All activities will be recorded, with results obtained. Any anomalies found will be noted in the step by step section as they arise, and where applicable an SPR (Software Problem reports) will be raised.

The identification of hazardous conditions associated with the test article and the operations, which might damage equipment, cause injury or invalidate test data, will be herein provided. Precautions to be observed, with correlation to the specific areas of applicability, will be provided as well in the descriptions of the test set-up to be adopted.

1.2 Flow

The test flow is divided into two main areas: IST1 pre-environmental testing and IST2 which will be performed post environmental testing. For IST1 the tests will be grouped into 3 main test groups: Warm Case, He I, and He II condition. (See list below). For IST2 all testing shall be performed in He II condition.

IST 1

➤ Warm case

- Launch clean run
- Launch phase, separation and post separation
- Satellite Commissioning warm case
- ACMS commissioning
- Launch sequence robustness
- Mode transitions Warm case

➤ He I

- Mode transitions He I or He II
- S/C reconfiguration
- NOM mode robustness
- Test of Instrument FDIR OBCP

➤ He II

- Instruments commissioning and performance verification
- CDMS management
- DTCP worst case scenario
- Satellite/ CCU Commissioning He II only
- Reference Mission Scenario

IST 2

All tests will be performed in He II

Tests may be run in any order

2 Documents

2.1 Applicable Documents

This section contains the list of documents originator of the test procedure, the list of documents filled with the requirement applicable to the activities explained in this procedure, the list of documents used to define the activities on the items (like design reports)

AD 2.1.1 Herschel Integrated Satellite Test Specification H-P-2-ASP-0939

2.2 Reference Documents

This section contains a list of documents filled with statements necessary to organise and to detail the operative execution of the test activities

RD 2.2.1.a.	Herschel/Planck Reference Mission Scenario	SCI-PT-12759
RD 2.2.1.b.	H/P ACMS S/S AVM SIT Specification	H-P-SP-AI-0059
RD 2.2.1.c.	H CDMS SIT Specification	H-P-SP-AI-0065
RD 2.2.1.d.	H TT&C SIT Specification	H-P-SP-AI-0078
RD 2.2.1.e.	H PCS SIT Specification	H-P-SP-AI-0079
RD 2.2.1.f.	Packet Store Usage on H/P 6603	PT-CMOC-OPS-TN-
RD 2.2.1.g.	Software user's Manual	P-HPL-NOT-0029-SE
RD 2.2.1.h.	CDMU ASW Requirement Specification	H-P-SP-AI-0031
RD 2.2.1.i.	Basic Software Requirement Specification	H-P-SP-AI-0006
RD 2.2.1.m.	H/P ACMS Requirement Specification	H-P-SP-AI-0011
RD 2.2.1.n.	SVM FDIR Design Specification	H-P-TN-AI-0024
RD 2.2.1.o.	Herschel Planck PSICD	SCI-PT-ICD-07527
RD 2.2.1.p.	H-P-CDMU ASW User Manual	H-P-4-SSF-MA-0001
RD 2.2.1.q.	H-P ACMS Design Report	H-P-4-DS-TN-0011
RD 2.2.1.r.	H-P ACMS TC Definition	H-P-4-DS-TN-0024
RD 2.2.1.s.	ACMS FDIR Analysis Report	H-P-4-DS-TN-0010
RD 2.2.1.t.	CDMU HW User Manual	P-HPL-NOT-0009

2.3 Other Documents

Additional to the IST Leading procedure there are the Step by Step IST procedure for each test case and a separate Instrument Power ON/OFF Switching procedure (see the table below).

IST Step by Step Test Procedures	HP-2-ASED-	Test to be performed
Herschel IST Test Case 'Launch Phase, Separation and Post Separation'	TP-0185	
Herschel IST Test Case 'Satellite Commissioning'	TP-0186	
Herschel IST Test Case 'ACMS Commissioning'	TP-0187	
Herschel IST Test Case 'Instruments Commissioning and Performance Verification'	TP-0188	
Herschel IST Test Case 'Mode Transitions'	TP-0189	
Herschel IST Test Case 'S/C Reconfiguration'	TP-0190	
Herschel IST Test Case 'CDMS Management'	TP-0191	
Herschel IST Test Case 'DTCP Worst Case Scenario'	TP-0192	
Herschel IST Test Case 'REFERENCE Mission Scenario'	TP-0193	
Herschel IST Test Case 'Launch Clean Run'	TP-0194	
Herschel IST Test Case 'Launch Sequence Robustness'	TP-0195	
Herschel IST Test Case 'NOM Mode Robustness'	TP-0196	
Herschel IST Test Case 'Test of Instrument FDIR OBCP'	TP-0197	
Herschel Instrument Power On/Off and Mode Switching Procedure for Functional Testing	TP-0206	

3 Requirements to be verified

See AD 2.1.1 "Herschel Integrated Satellite Test Specification" section 9

4 Configuration

4.1 Hardware Configuration

The activities described in this test procedure require the complete system configuration according to the hardware matrix here below reported.

S/S	Unit	Configuration	SCOE simulated equipments	Remarks
		<i>Herschel</i>		
EGSE	CCS	1		
	CCS lite	1		
	TM/TC DFE	1		
	CDMU SCOE	1		
	ACMS SCOE	1		
	TT&C SCOE	1		
	POWER SCOE	1		
	CCU SCOE			
IGSE	HIFI IGSE	1		
	PACS IGSE	1		
	SPIRE IGSE	1		
PCS	PCDU	1+1		
	Battery	1 Installed. Only connected for Launch clean run	1	Battery Simulation for other tests
	Solar Array	30 nom sections not required for IST	1	Power SCOE
CDMS	CDMU	1+1		
ACMS	ACC	1+1		
	RWA	3+1		
	GYRO	3+1		
	STR	2		
	CRS	2		
	AAD	1+1 internal red		
	SAS	2+2 internal red		
TT&C	XPND	2		
	TWT	2		
	EPC	2		
	LGA	2 (not used during the IST)		

S/S	Unit	Configuration	SCOE simulated equipments	Remarks
	MGA	1 (not used during the IST)		
RCS		1+1 (not used during the IST)		ACMS SCOE
TCS		1 (partially installed)		
VMC		1		
SREM		1		
HIFI		1		
PACS		1		
SPIRE		1		
Telescope		1		
HSS		1		

Table 1: Satellite configuration required for IST

4.2 SW Configuration

The Satellite IST will be run with the on-board software configuration as detailed in the IST TRR.

The actual configuration of the software should be noted here to ensure correct system status

- CDMS OBSW: _____
- ACMS OBSW: _____
- STR PROM SW: _____
- STR EEPROM SW: _____
- PACS DPU SW: _____
- PACS SPU SW: _____
- PACS DMC SW: _____
- HIFI ICU SW: _____
- SPIRE DPU SW: _____

4.3 SCOE Cables Connection

For the IST there are four different SCOE cables configuration.

- Configuration 1 for "Nominal Launch" and "RMS" see 4.3.1
- Configuration 2 for " Instrument Commissioning", "Mode Transitions", "S/C Reconfiguration", "Launch Mode Robustness", "CDMS management", "ACMS Commissioning", "Satellite commissioning" and "DTCP Worst Case Scenario" " NOM Mode Robustness" 4.3.2
- Configuration 3 for " Launch Clean Run" 4.3.3

4.3.1 SCOE cable connection for "RMS"

SCOE CABLES CONNECTION to HERSCHEL S/C					
SKIN-01	PWR Panel (PCDU)				
	Connector Function	Skin Connector	S/C unit	SCOE CABLE	Flight Connector
	BS Nom Power	SK01BJ09	PCDU		PCDU Flight Plug SK01BP09 Plugged
	BS Red Power	SK01BJ10	PCDU		PCDU Flight Plug SK01BP09 Plugged
	BDR1 AIT	SK01BJ11	PCDU	LPS SCOE Cable Plugged	
	BDR2 AIT	SK01BJ12	PCDU	LPS SCOE Cable Plugged	
	SA Nom Power	SK01AJ01	PCDU	POWER SCOE Cable Plugged	
	SA Nom Power	SK01AJ02	PCDU	POWER SCOE Cable Plugged	
	SA Nom Power	SK01AJ03	PCDU	POWER SCOE Cable Plugged	
	SA Red Power	SK01AJ04	PCDU	Connector Cover	
	SA Red Power	SK01AJ05	PCDU	POWER SCOE Cable Plugged	
	SA Red Power	SK01AJ06	PCDU	POWER SCOE Cable Plugged	
	SA Red Power	SK01AJ07	PCDU	POWER SCOE Cable Plugged	
SKIN-02	PWR Panel (ACC, CDMU, RCS, 1553 & Thruster)				
	Connector Function	Skin Connector	S/C unit	SCOE CABLE	Flight Connector
	DMS 1553 Bus_A	J01	CDMU	Bus Monitor Cable Plugged	
	DMS 1553 Bus_B	J02	CDMU	Bus Monitor Cable Plugged	
	ACMS 1553 Bus_A	J03	ACC	ACMS SCOE Cable Plugged	
	ACMS 1553 Bus_B	J04	ACC	ACMS SCOE Cable Plugged	
	LV1/FCV 20N CMD S/A M	J05	ACC/RCS	ACMS SCOE Cable Plugged	
LV2/FCV 20N CMD S/A R	J06	ACC/RCS	ACMS SCOE Cable Plugged		

SKIN-02	RCS Press/Tank Temp/PT Pwr	J07	ACC/PT&TH	ACMS SCOE Cable Plugged	
SKIN-02	Thruster Temp M/LV1 Sts	J08	ACC/RCS	ACMS SCOE Cable Plugged	
SKIN-02	CDMU and ACC EEPROM reprogramming input	J09	ACC/CDMU		Flight Cap SK02P09 Plugged
SKIN-02	CDMU and ACC EEPROM reprogramming Input	J10	ACC/CDMU		Flight Cap SK02P10 Plugged
SKIN-02	Thruster Temp R/LV2 Sts	J11	ACC/RCS	ACMS SCOE Cable Plugged	
SKIN-02	Thruster C/B Heaters M	J12	ACC/CBH	ACMS SCOE Cable Plugged	
SKIN-02	Thruster C/B Heaters R	J13	ACC/CBH	ACMS SCOE Cable Plugged	
SKIN-02	Str1/2 On/Off Cmd M/Str1 Sts	J14	ACC/STR-1		ACMS Flight Cap SK02P14 Plugged
SKIN-02	Str1/2 On/Off Cmd R/Str2 Sts	J15	ACC/STR-2		ACMS Flight Cap SK02P15 Plugged
SKIN-02	Gyro A On/Off Cmd	J16	ACC/GYRO-E1		ACMS Flight Cap SK02P16 Plugged
SKIN-02	Gyro B On/Off Cmd	J17	ACC/GYRO-E2		ACMS Flight Cap SK02P17 Plugged
SKIN-03	TTC Panel				
	Connector Function	Skin Connector	S/C unit	SCOE CABLE	Flight Connector
SKIN-03	Test point TC + protection jumper EPC1	SK03J01	XPND1/EPC1		Plastic cap (See note1)
SKIN-03	Test point TC + protection jumper EPC2	SK03J02	XPND2/EPC2		Plastic cap (See note1)
	RF LINK				
	Connector Function	Skin Connector	S/C unit	SCOE CABLE	Flight Connector
	RF link for antenna LGA1	N/A	LGA1	RF SCOE LGA1 Plugged	LGA1 Anechoic Cap
	RF link for antenna LGA2	N/A	LGA2	RF SCOE LGA2 Plugged	LGA2 Anechoic Cap
	RF link for antenna MGA	N/A	MGA	RF SCOE MGA Plugged	MGA Anechoic Cap
SKIN-04	ACMS Panel (RWE)				
	Connector Function	Skin Connector	S/C unit	SCOE CABLE	Flight Connector
SKIN-04	RWL1 Sgn	J01	ACC/RWL-1		ACMS Flight Cap SK04P01 Plugged
SKIN-04	RWL2 Sgn	J02	ACC/RWL-2		ACMS Flight Cap SK04P02 Plugged
SKIN-04	RWL3 Sgn	J03	ACC/RWL-3		ACMS Flight Cap SK04P03 Plugged

SKIN-04	RWL4 Sgn	J04	ACC/RWL-4		ACMS Flight Cap SK04P04 Plugged
SKIN-05	GYR/QRS Panel				
	Connector Function	Skin Connector	S/C unit	SCOE CABLE	Flight Connector
SKIN-05	CRS1 AOCs Sgn	J01	CRS-1/ACC		ACMS Flight Cap
SKIN-05	CRS2 AOCs Sgn	J02	CRS-2/ACC		ACMS Flight Cap
SKIN-05				ACMS SCOE	
SKIN-05	GYRO RS422 / Test	J03	GYRO	Cable Plugged	
	CRS 1/2 Stimuli	J04	CRS-1,2	ACMS SCOE Cable Plugged	
SKIN-05	AAD Sgn M	J05	AAD/ACC	ACMS SCOE Cable Plugged	
SKIN-05	SAS1/2 Sgn M	J06	SAS/ACC	ACMS SCOE Cable Plugged	
SKIN-05	SAS1/2 Sgn R	J07	SAS/ACC	ACMS SCOE Cable Plugged	
SKIN-05	AAD Sgn R	J08	AAD/ACC	ACMS SCOE Cable Plugged	
SKIN-06	STR Panel				
	Connector Function	Skin Connector	S/C unit	SCOE CABLE	Flight Connector
SKIN-06	STR1 Stimuli	J01	STR1	ACMS SCOE Cable Plugged	
SKIN-06	STR2 Stimuli	J02	STR2	ACMS SCOE Cable Plugged	
SKIN-06	UMBILICAL				
	Connector Function	Connector	S/C unit	SCOE CABLE	
	Power/Data	HU1 J01	SYSTEM	SCOE's cable Plugged	
	Power/Data	HU2 J01	SYSTEM	SCOE's cable Plugged	

CryoSCOE harness setup for ACS/PR/TP No.:						
Annex No.:						
315 100	on top of					
	Connector Function	Connector	S/C unit	SCOE	CryoSCOE connected	CCU Flight connected
	Temperature Sensors	315100-J01	T117, T118, T207, T211, T238, T239, T249, T251, T253, T255, T423, T443, T463, T851, T852, T853, T861	Cryo SCOE J07 & J15		no flight
	Temperature & pressure Sensors	315100-J03	T702, T872, P101, T103, T115, T116, T704, T802, T803, T805, T806, T871	Cryo SCOE J01 & J17		no flight
	Temperature Sensors	315100-J05	T331, T333, T335, T337, T339, T341 (Telescope)	Cryo SCOE J14		X
Temperature Sensors	315100-J06	T332, T334, T336, T338, T340, T342 (Telescope)	Cryo SCOE J10		X	
316 100	on top of					
	Connector Function	Connector	S/C unit	SCOE	CryoSCOE connected	CCU Flight connected
	Valve Sensor	316100-J01	VS501, VS504			X
Valve Sensor	316100-J02	VS503, VS505			X	
321 100	on top of					
	Connector Function	Connector	S/C unit	SCOE	CryoSCOE connected	CCU Flight connected
		321100-J01	L701, H701	Cryo SCOE J11		no flight
		321100-J02	LL702, H702	Cryo SCOE J03		no flight
		321100-J03	H502, H503	Cryo SCOE J06		no flight
	321100-J04	P501	Cryo SCOE J01		no flight	

			H103, H701, L102, VT102, VT103, VT105, VT701, VH102, VH103, VH105, VH701, VS102, VS105, VS701	Cryo SCOE J11		no flight
			H104, H702, L101, VT104, VT106, VT702, VH104, VH106, VH702, VS104, VS702	Cryo SCOE J03		no flight
			H501	Cryo SCOE J06		no flight
			T502	Cryo SCOE J01		no flight
321 200	on top of					
	Connector Function	Connector	S/C unit	SCOE	CryoSCOE connected	CCU Flight connected
			T202, T212, T221, T223, T227, T228, T232, T234, T236, T242, T244, T246, T250, T254, T258, T424, T464	Cryo SCOE J08		X
			T102, T105, T106, T111, PR_P701, T421, T442, T461, H101	Cryo SCOE J04		X
			T321, T323, T501, T505, T651, T901, T903, T907, T911	Cryo SCOE J09		X
			T312, T314, T316, T905, T909, T931, T933, T935	Cryo SCOE J09		X
			VS103, H102	Cryo SCOE J04		X
321 300	on top of					
	Connector Function	Skin Connector	S/C unit	SCOE	SCOE Cable connected	Flight Cap connected

			T208, T213, T222, T224, T225, T226, T231, T233, T235, T237, T247, T248, T252, T256, T862, T444	Cryo SCOE J02		X
		321300-J02	T101, T104, T107, T112, T703, T422, T441, T462, T701, H102	Cryo SCOE J04		X
		321300-J03	P502, T322, T324, T504, T506, T507, T652, T902, T908, T912	Cryo SCOE J18		X
		321300-J04	T311, T313, T315, T904, T906, T910, T932, T934	Cryo SCOE J14		X
		321300-J05	VS106, H102	Cryo SCOE J04		X
CVSE I/F	on top of					
	Connector Function	Skin Connector	S/C unit	SCOE	SCOE Cable connected	Flight Cap connected
				Cryo SCOE J18		X
to be approved & released before start of ACS/PR/TP by Floor- Manager		Date:		Sign:		

SAFE / ARM plug setup for ACS/PR/TP No.:						
Annex No.:						
314 200	on top of					
	Connector Function	Connector	S/C unit	SAFE	ARM	Sign
	SAFE / ARM plug	314 200-J03	NED (601)	X		
	SAFE / ARM plug	314 200-J04	NED (602)	X		
	SAFE / ARM plug	314 200-J05	SI 601	X		
	SAFE / ARM plug	314 200-J06	SI 602	X		
to be approved & released before start of ACS/PR/TP by Floor-Manager		Date:		Sign:		

4.3.2 SCOE cable connection for "Nominal Launch", "Satellite Commissioning", "Instrument Commissioning "ACMS Commissioning", "Mode Transitions", S/C Reconfiguration", "CDMS management", DTCP Worst Case Scenario", "Launch Mode Robustness", "NOM Mode Robustness" and "Instrument FDIR"

SCOE CABLES CONNECTION to HERSCHEL S/C					
SKIN-01	PWR Panel (PCDU)				
	Connector Function	Skin Connector	S/C unit	SCOE CABLE	Flight Connector
	BS Nom Power	SK01BJ09	PCDU	BS SCOE Cable Plugged	
	BS Red Power	SK01BJ10	PCDU	BS SCOE Cable Plugged	
	BDR1 AIT	SK01BJ11	PCDU	LPS SCOE Cable Plugged	
	BDR2 AIT	SK01BJ12	PCDU	LPS SCOE Cable Plugged	
	SA Nom Power	SK01AJ01	PCDU	POWER SCOE Cable Plugged	
	SA Nom Power	SK01AJ02	PCDU	POWER SCOE Cable Plugged	
	SA Nom Power	SK01AJ03	PCDU	POWER SCOE Cable Plugged	
	SA Red Power	SK01AJ04	PCDU	Connector Cover	
	SA Red Power	SK01AJ05	PCDU	POWER SCOE Cable Plugged	
	SA Red Power	SK01AJ06	PCDU	POWER SCOE Cable Plugged	
	SA Red Power	SK01AJ07	PCDU	POWER SCOE Cable Plugged	
SKIN-02	PWR Panel (ACC, CDMU, RCS, 1553 & Thruster)				
	Connector Function	Skin Connector	S/C unit	SCOE CABLE	Flight Connector
	DMS 1553 Bus_A	J01	CDMU	Bus Monitor Cable Plugged	
	DMS 1553 Bus_B	J02	CDMU	Bus Monitor Cable Plugged	
	ACMS 1553 Bus_A	J03	ACC	ACMS SCOE Cable Plugged	
	ACMS 1553 Bus_B	J04	ACC	ACMS SCOE Cable Plugged	
SKIN-02	LV1/FCV 20N CMD S/A M	J05	ACC/RCS	ACMS SCOE	

				Cable Plugged	
SKIN-02	LV2/FCV 20N CMD S/A R	J06	ACC/RCS	ACMS SCOE Cable Plugged	
SKIN-02	RCS Press/Tank Temp/PT Pwr	J07	ACC/PT&TH	ACMS SCOE Cable Plugged	
SKIN-02	Thruster Temp M/LV1 Sts	J08	ACC/RCS	ACMS SCOE Cable Plugged	
SKIN-02	CDMU and ACC EEPROM reprogramming input	J09	ACC/CDMU		Flight Cap SK02P09 Plugged
SKIN-02	CDMU and ACC EEPROM reprogramming input	J10	ACC/CDMU		Flight Cap SK02P10 Plugged
SKIN-02	Thruster Temp R/LV2 Sts	J11	ACC/RCS	ACMS SCOE Cable Plugged	
SKIN-02	Thruster C/B Heaters M	J12	ACC/CBH	ACMS SCOE Cable Plugged	
SKIN-02	Thruster C/B Heaters R	J13	ACC/CBH	ACMS SCOE Cable Plugged	
SKIN-02	Str1/2 On/Off Cmd M/Str1 Sts	J14	ACC/STR-1		ACMS Flight Cap SK02P14 Plugged
SKIN-02	Str1/2 On/Off Cmd R/Str2 Sts	J15	ACC/STR-2		ACMS Flight Cap SK02P15 Plugged
SKIN-02	Gyro A On/Off Cmd	J16	ACC/GYRO-E1		ACMS Flight Cap SK02P16 Plugged
SKIN-02	Gyro B On/Off Cmd	J17	ACC/GYRO-E2		ACMS Flight Cap SK02P17 Plugged
SKIN-03	TTC Panel				
	Connector Function	Skin Connector	S/C unit	SCOE CABLE	Flight Connector
SKIN-03	Test point TC + protection jumper EPC1	SK03J01	XPND1/EPC1		Plastic cap (See note1)
SKIN-03	Test point TC + protection jumper EPC2	SK03J02	XPND2/EPC2		Plastic cap (See note1)
	RF LINK				
	Connector Function	Skin Connector	S/C unit	SCOE CABLE	Flight Connector
	RF link for antenna LGA1	N/A	LGA1	RF SCOE LGA1 Plugged	LGA1 Anechoic Cap
	RF link for antenna LGA2	N/A	LGA2	RF SCOE LGA2 Plugged	LGA2 Anechoic Cap
	RF link for antenna MGA	N/A	MGA	RF SCOE MGA Plugged	MGA Anechoic Cap
SKIN-04	ACMS Panel (RWE)				
	Connector Function	Skin Connector	S/C unit	SCOE CABLE	Flight Connector
SKIN-04	RWL1 Sgn	J01	ACC/RWL-1		ACMS Flight Cap SK04P01 Plugged
SKIN-04	RWL2 Sgn	J02	ACC/RWL-2		ACMS Flight Cap

SKIN-04					SK04P02 Plugged
SKIN-04	RWL3 Sgn	J03	ACC/RWL-3		ACMS Flight Cap SK04P03 Plugged
SKIN-04	RWL4 Sgn	J04	ACC/RWL-4		ACMS Flight Cap SK04P04 Plugged
SKIN-05	GYR/QRS Panel				
	Connector Function	Skin Connector	S/C unit	SCOE CABLE	Flight Connector
SKIN-05	CRS1 AOCs Sgn	J01	CRS-1/ACC		ACMS Flight Cap
SKIN-05	CRS2 AOCs Sgn	J02	CRS-2/ACC		ACMS Flight Cap
SKIN-05	GYRO RS422 / Test	J03	GYRO	ACMS SCOE Cable Plugged	
SKIN-05	CRS 1/2 Stimuli	J04	CRS-1,2	ACMS SCOE Cable Plugged	
SKIN-05	AAD Sgn M	J05	AAD/ACC	ACMS SCOE Cable Plugged	
SKIN-05	SAS1/2 Sgn M	J06	SAS/ACC	ACMS SCOE Cable Plugged	
SKIN-05	SAS1/2 Sgn R	J07	SAS/ACC	ACMS SCOE Cable Plugged	
SKIN-05	AAD Sgn R	J08	AAD/ACC	ACMS SCOE Cable Plugged	
SKIN-06	STR Panel				
	Connector Function	Skin Connector	S/C unit	SCOE CABLE	Flight Connector
SKIN-06	STR1 Stimuli	J01	STR1	ACMS SCOE Cable Plugged	
SKIN-06	STR2 Stimuli	J02	STR2	ACMS SCOE Cable Plugged	
	UMBILICAL				
	Connector Function	Connector	S/C unit	SCOE CABLE	
	Power/Data	HU1 J01	SYSTEM	SCOE's cable Plugged	
	Power/Data	HU2 J01	SYSTEM	SCOE's cable Plugged	

CryoSCOE harness setup for ACS/PR/TP No.:						
Annex No.:						
315 100	on top of					
	Connector Function	Connector	S/C unit	SCOE	CryoSCOE connected	CCU Flight connected
	Temperature Sensors	315100-J01	T117, T118, T207, T211, T238, T239, T249, T251, T253, T255, T423, T443, T463, T851, T852, T853, T861	Cryo SCOE J07 & J15		no flight
	Temperature & pressure Sensors	315100-J03	T702, T872, P101, T103, T115, T116, T704, T802, T803, T805, T806, T871	Cryo SCOE J01 & J17		no flight
	Temperature Sensors	315100-J05	T331, T333, T335, T337, T339, T341 (Telescope)	Cryo SCOE J14		X
	Temperature Sensors	315100-J06	T332, T334, T336, T338, T340, T342 (Telescope)	Cryo SCOE J10		X
316 100	on top of					
	Connector Function	Connector	S/C unit	SCOE	CryoSCOE connected	CCU Flight connected
	Valve Sensor	316100-J01	VS501, VS504			X
	Valve Sensor	316100-J02	VS503, VS505			X
321 100	on top of					
	Connector Function	Connector	S/C unit	SCOE	CryoSCOE connected	CCU Flight connected
		321100-J01	L701, H701	Cryo SCOE J11		no flight
		321100-J02	LL702, H702	Cryo SCOE J03		no flight
	321100-J03	H502, H503	Cryo SCOE J06		no flight	

		321100-J04	P501	Cryo SCOE J01		no flight
		321100-J05	H103, H701, L102, VT102, VT103, VT105, VT701, VH102, VH103, VH105, VH701, VS102, VS105, VS701	Cryo SCOE J11		no flight
		321100-J06	H104, H702, L101, VT104, VT106, VT702, VH104, VH106, VH702, VS104, VS702	Cryo SCOE J03		no flight
		321100-J07	H501	Cryo SCOE J06		no flight
		321100-J08	T502	Cryo SCOE J01		no flight
321 200	on top of					
	Connector Function	Connector	S/C unit	SCOE	CryoSCOE connected	CCU Flight connected
		321200-J01	T202, T212, T221, T223, T227, T228, T232, T234, T236, T242, T244, T246, T250, T254, T258, T424, T464	Cryo SCOE J08		X
		321200-J02	T102, T105, T106, T111, PR_P701, T421, T442, T461, H101	Cryo SCOE J04		X
		321200-J03	T321, T323, T501, T505, T651, T901, T903, T907, T911	Cryo SCOE J09		X
		321200-J04	T312, T314, T316, T905, T909, T931, T933, T935	Cryo SCOE J09		X
		321200-J05	VS103, H102	Cryo SCOE J04		X

321 300	on top of					
	Connector Function	Skin Connector	S/C unit	SCOPE	SCOPE Cable connected	Flight Cap connected
		321300-J01	T208, T213, T222, T224, T225, T226, T231, T233, T235, T237, T247, T248, T252, T256, T862, T444	Cryo SCOPE J02		X
		321300-J02	T101, T104, T107, T112, T703, T422, T441, T462, T701, H102	Cryo SCOPE J04		X
		321300-J03	P502, T322, T324, T504, T506, T507, T652, T902, T908, T912	Cryo SCOPE J18		X
		321300-J04	T311, T313, T315, T904, T906, T910, T932, T934	Cryo SCOPE J14		X
CVSE I/F	on top of					
	Connector Function	Skin Connector	S/C unit	SCOPE	SCOPE Cable connected	Flight Cap connected
				Cryo SCOPE J18		X
to be approved & released before start of ACS/PR/TP by Floor-Manager		Date:		Sign:		

SAFE / ARM plug setup for ACS/PR/TP No.:						
Annex No.:						
314 200	on top of					
	Connector Function	Connector	S/C unit	SAFE	ARM	Sign
	SAFE / ARM plug	314 200-J03	NED (601)	X		
	SAFE / ARM plug	314 200-J04	NED (602)	X		
	SAFE / ARM plug	314 200-J05	SI 601	X		
	SAFE / ARM plug	314 200-J06	SI 602	X		
to be approved & released before start of ACS/PR/TP by Floor-Manager			Date:		Sign:	

4.3.3 SCOE cable connection for "Launch Clean Run"

SVM / EGSE harness setup for ACS/PR/TP No.:						
Annex No.:						
SKIN-01	PWR Panel (PCDU)					
	Connector Function	SCOE	S/C unit	Skin Connector	Connection	Sign
	SA Nom Power	SAS SCOE	PCDU	SK01A J/P01	disconnected	
	SA Nom Power	SAS SCOE	PCDU	SK01A J/P02	disconnected	
	SA Nom Power	SAS SCOE	PCDU	SK01A J/P03	disconnected	
			Battery	SK01A J/P04	EMC cover	
	SA Red Power	SAS SCOE	PCDU	SK01A J/P05	disconnected	
	SA Red Power	SAS SCOE	PCDU	SK01A J/P06	disconnected	
	SA Red Power	SAS SCOE	PCDU	SK01A J/P07	disconnected	
	BS Nom Power	BS SCOE	PCDU	SK01B J/P09	Flight	
	BS Red Power	BS SCOE	PCDU	SK01B J/P10	Flight	
	BDR1 AIT	SAS SCOE	PCDU	SK01B J/P11	LPS SCOE Cable Plugged	
BDR2 AIT	SAS SCOE	PCDU	SK01B J/P12	LPS SCOE Cable Plugged		
SKIN-02	PWR Panel (ACC, CDMU, RCS, 1553 & Thruster)					
	Connector Function	SCOE	S/C unit	Skin Connector	Connection	Sign
	DMS 1553 Bus_A	CDMU SCOE	CDMU	SK02 J/P01	Flight	
	DMS 1553 Bus_B	CDMU SCOE	CDMU	SK02 J/P02	Flight	
	ACMS 1553 Bus_A	ACMS SCOE	ACC	SK02 J/P03	Flight	
	ACMS 1553 Bus_B	ACMS SCOE	ACC	SK02 J/P04	Flight	
	LV1/FCV 20N CMD S/A M	ACMS SCOE	ACC/RCS	SK02 J/P05	disconnected	
	LV2/FCV 20N CMD S/A R	ACMS SCOE	ACC/RCS	SK02 J/P06	disconnected	
	RCS Press/Tank Temp/PT Pwr	ACMS SCOE	ACC/PT&TH	SK02 J/P07	Flight	
	Thruster Temp M/LV1 Sts	ACMS SCOE	ACC/RCS	SK02 J/P08	Flight	

	Quick S/W load	grey ACMS	black CDMS	SK02 J/P09	disconnected		
	Quick S/W load	grey ACMS	black CDMS	SK02 J/P10	disconnected		
	Thruster Temp R/LV2 Sts	ACMS SCOE	ACC/RCS	SK02 J/P11	Flight		
	Thruster C/B Heaters M	ACMS SCOE	ACC/CBH	SK02 J/P12	disconnected		
	Thruster C/B Heaters R	ACMS SCOE	ACC/CBH	SK02 J/P13	disconnected		
	Str1/2 On/Off Cmd M/Str1 Sts	ACMS SCOE	ACC/STR-1	SK02 J/P14	Flight		
	Str1/2 On/Off Cmd R/Str2 Sts	ACMS SCOE	ACC/STR-2	SK02 J/P15	Flight		
	Gyro A On/Off Cmd		ACC/GYRO-E1	SK02 J/P16	Flight		
	Gyro B On/Off Cmd		ACC/GYRO-E2	SK02 J/P17	Flight		
SKIN-03	TTC Panel						
	Connector Function	SCOE	S/C unit	Skin Connector	Connection		Sign
	Test point TC + protection jumper EPC1	Plastic Cap	XPND1/EPC1	SK03 J/P01	Flight		
	Test point TC + protection jumper EPC2	Plastic Cap	XPND2/EPC2	SK03 J/P02	Flight		
	RF LINK						
	Connector Function	SCOE	S/C unit	Skin Connector	Connection		Sign
	RF link for antenna LGA1	TT&C SCOE	LGA1	LGA1 Anechoic Cap	RF-SCOE		
	RF link for antenna LGA2	TT&C SCOE	LGA2	LGA2 Anechoic Cap	RF-SCOE		
	RF link for antenna MGA	TT&C SCOE	MGA	MGA Anechoic Cap	RF-SCOE		
SKIN-04	ACMS Panel (RWE)						
	Connector Function	SCOE	S/C unit	Skin Connector	Connection		Sign
	RWL1 Sgn		ACC/RWL-1	SK04 J/P01	Flight		
	RWL2 Sgn		ACC/RWL-2	SK04 J/P02	Flight		
	RWL3 Sgn		ACC/RWL-3	SK04 J/P03	Flight		
	RWL4 Sgn		ACC/RWL-4	SK04 J/P04	Flight		

SKIN-05	GYR/QRS Panel					
	Connector Function	SCOE	S/C unit	Skin Connector	Connection	Sign
	CRS1 AOCs Sgn		CRS-1/ACC	SK05 J/P01	Flight	
	CRS2 AOCs Sgn		CRS-2/ACC	SK05 J/P02	Flight	
	GYRO RS422 / Test	ACMS SCOE	GYRO	SK05 J/P03	disconnected	
	CRS 1/2 Stimuli	ACMS SCOE	CRS-1,2	SK05 J/P04	disconnected	
	AAD Sgn M	ACMS SCOE	AAD/ACC	SK05 J/P05	Flight	
	SAS1/2 Sgn M	ACMS SCOE	SAS/ACC	SK05 J/P06	Flight	
	SAS1/2 Sgn R	ACMS SCOE	SAS/ACC	SK05 J/P07	Flight	
	AAD Sgn R	ACMS SCOE	AAD/ACC	SK05 J/P08	Flight	
SKIN-06	STR Panel					
	Connector Function	SCOE	S/C unit	Skin Connector	Connection	Sign
	STR1 Stimuli	STR1	STR1	SK06 J/P01	disconnected	
	STR2 Stimuli	STR2	STR2	SK06 J/P02	disconnected	
UMBILICAL						
	Connector Function	SCOE	S/C unit	Connector	Connection	Sign
	Power/Data	System	SYSTEM	HUJ01	SCOE	
	Power/Data	System	SYSTEM	HUJ02	SCOE	
approved SE		approved AIT		approved PA/Safety		approved Floor-Manger
sign off:						

CryoSCOE harness setup for ACS/PR/TP No.:						
Annex No.:						
315 100	on top of					
	Connector Function	Connector	S/C unit	SCOE	CryoSCOE connected	CCU Flight connected
	Temperature Sensors	315100-J01	T117, T118, T207, T211, T238, T239, T249, T251, T253, T255, T423, T443, T463, T851, T852, T853, T861	Cryo SCOE J07 & J15		no flight
	Temperature & pressure Sensors	315100-J03	T702, T872, P101, T103, T115, T116, T704, T802, T803, T805, T806, T871	Cryo SCOE J01 & J17		no flight
	Temperature Sensors	315100-J05	T331, T333, T335, T337, T339, T341 (Telescope)	Cryo SCOE J14		X
	Temperature Sensors	315100-J06	T332, T334, T336, T338, T340, T342 (Telescope)	Cryo SCOE J10		X
316 100	on top of					
	Connector Function	Connector	S/C unit	SCOE	CryoSCOE connected	CCU Flight connected
	Valve Sensor	316100-J01	VS501, VS504			X
	Valve Sensor	316100-J02	VS503, VS505			X
321 100	on top of					
	Connector Function	Connector	S/C unit	SCOE	CryoSCOE connected	CCU Flight connected
		321100-J01	L701, H701	Cryo SCOE J11		no flight
		321100-J02	LL702, H702	Cryo SCOE J03		no flight
		321100-J03	H502, H503	Cryo SCOE J06		no flight
		321100-J04	P501	Cryo SCOE J01		no flight

			H103, H701, L102, VT102, VT103, VT105, VT701, VH102, VH103, VH105, VH701, VS102, VS105, VS701	Cryo SCOE J11		no flight
			H104, H702, L101, VT104, VT106, VT702, VH104, VH106, VH702, VS104, VS702	Cryo SCOE J03		no flight
			H501	Cryo SCOE J06		no flight
			T502	Cryo SCOE J01		no flight
321 200	on top of					
	Connector Function	Connector	S/C unit	SCOE	CryoSCOE connected	CCU Flight connected
		321200-J01	T202, T212, T221, T223, T227, T228, T232, T234, T236, T242, T244, T246, T250, T254, T258, T424, T464	Cryo SCOE J08		X
		321200-J02	T102, T105, T106, T111, PR_P701, T421, T442, T461, H101	Cryo SCOE J04		X
		321200-J03	T321, T323, T501, T505, T651, T901, T903, T907, T911	Cryo SCOE J09		X
		321200-J04	T312, T314, T316, T905, T909, T931, T933, T935	Cryo SCOE J09		X
		321200-J05	VS103, H102	Cryo SCOE J04		X
321 300	on top of					
	Connector Function	Skin Connector	S/C unit	SCOE	SCOE Cable connected	Flight Cap connected

			T208, T213, T222, T224, T225, T226, T231, T233, T235, T237, T247, T248, T252, T256, T862, T444	Cryo SCOE J02		X
			T101, T104, T107, T112, T703, T422, T441, T462, T701, H102	Cryo SCOE J04		X
			P502, T322, T324, T504, T506, T507, T652, T902, T908, T912	Cryo SCOE J18		X
			T311, T313, T315, T904, T906, T910, T932, T934	Cryo SCOE J14		X
			VS106, H102	Cryo SCOE J04		X
CVSE I/F	on top of					
	Connector Function	Skin Connector	S/C unit	SCOE	SCOE Cable connected	Flight Cap connected
				Cryo SCOE J18		X
to be approved & released before start of ACS/PR/TP by Floor- Manager		Date:		Sign:		

SAFE / ARM plug setup for ACS/PR/TP No.:						
Annex No.:						
314 200	on top of					
	Connector Function	Connector	S/C unit	SAFE	ARM	Sign
	SAFE / ARM plug	314 200-J03	NED (601)	X		
	SAFE / ARM plug	314 200-J04	NED (602)	X		
	SAFE / ARM plug	314 200-J05	SI 601	X		
	SAFE / ARM plug	314 200-J06	SI 602	X		
to be approved & released before start of ACS/PR/TP by Floor-Manager		Date:		Sign:		

5 Conditions

5.1 Personnel

The following table shall be filled in detailing which personnel are required to be present for the test. The signature of the appropriate responsible is classified as agreement to start the test as stated in the TRR.

Responsibility	Required for Test (Y/N)	Name / Organization	Signature
Floor Manager	Y	M. MÜLLER	
Test Director	Y	S. MOONEY	
Test Conductor	Y	C. MUCH	<i>C. Much</i>
EGSE Operator			
SVM Support Engineer			
Cryo Support Engineer			
HIFI Instrument Support Engineer			
PACS Instrument Support Engineer			
Spire Instrument Support Engineer			
PA Responsible	Y	D. LAMONBY / B. HOLL	<i>D. Lamonby</i>
Customer Representative			

Table 2: List of IST test attendants

Persons, other than test personal as mentioned in the test team organization and participants of the TRR, are allowed to observe the test at the discretion of the Test Director and Test Conductor.

5.2 Environmental

During all the phases of the test the HERSCHEL Satellite shall be maintained in a controlled environment in order to prevent degradation or contamination of the satellite equipment and surface, which could result in operational failures.

ESTEC site clean room will be used.

Ambient conditions shall comply with ISO14644-1 for cleanliness requirement.

The characteristic shall be:

- Temperature = $22C \pm 3C$
- Relative Humidity = 50 % +/- 10%
- Delta Pressure = above 0.6 mm H₂O
- Clean Conditions = Class 100 000

The following table defines the S/C conditions for each IST test sequence with respect to Cryostat He I/He II status, tilting angle and usage of the real battery.

IST 1 Part 1 Warm preferred

Chapter of IST Spec (issue 4)		Instr. Mode	Real Battery required	Satellite X- Axis tilting	Ambient or cool down (deviating from IST Spec !!!)	He I HTI venting >20mg/sec	He II HTI venting >20mg/sec
		3 shift	4 shift	5 shift	6 shift	7 shift	8 shift
5.8.2	Launch phase, separation and post separation						
5.8.2.3	Initial configuration	OFF	Y	n.a	Preferred	alternative	alternative
5.8.2.4.2	Satellite power ON	OFF	Y	n.a	Preferred	alternative	alternative
5.8.2.4.4	Configuration for launch	OFF	Y	n.a	Preferred	alternative	alternative
5.8.2.4.5	Launch	OFF	Y	n.a	Preferred	alternative	alternative
5.8.2.4.6	Separation	OFF	Y	n.a	Preferred	alternative	alternative
5.8.2.4.7	Post separation	OFF	Y	n.a	Preferred	alternative	alternative
5.8.2.4.8	Initial check out in SAM mode	OFF	Y	n.a	Preferred	alternative	alternative
5.8.2.4.9	CDMS transition to NOM mode	OFF	Y	n.a	Preferred	alternative	alternative
5.8.2.4.10	Orbit Control Manoeuvre	OFF	Y	n.a	Preferred	alternative	alternative
5.8.2.4.11	End of the sequence	OFF	Y	n.a	Preferred	alternative	alternative
5.8.3	Satellite Commissioning						
5.8.3.3	Test start configuration	OFF	N	n.a	Preferred	alternative	alternative
5.8.3.4	TTC commissioning	OFF	N	n.a	Preferred	alternative	alternative
5.8.3.5	CDMS commissioning	OFF	N	n.a	Preferred	alternative	alternative
5.8.3.6	TCS commissioning	OFF	N	n.a	Preferred	alternative	alternative
5.8.3.7	PCS commissioning	OFF	N	n.a	Preferred	alternative	alternative
5.8.3.10	SREM commissioning	OFF	N	n.a	Preferred	alternative	alternative
5.8.3.11	TCS commissioning	OFF	N	n.a	Preferred	alternative	alternative
5.8.3.12	Telescope decontamination	OFF	N	n.a	Preferred	alternative	alternative
5.8.3.13	Cryo Cover opening	OFF	N	n.a	Preferred	alternative	alternative
5.8.3.14	Test end	OFF	N	n.a	Preferred	alternative	alternative
5.8.3.9	ACMS commissioning						
5.8.3.9.1	AAD, SAS, CRS, STR, GYR, RCS unit check	OFF	N	n.a	Preferred	alternative	alternative
5.8.3.9.2	RWLs health check	OFF	N	n.a	Preferred	alternative	alternative
5.8.3.9.3	STR functional verification	OFF	N	n.a	Preferred	alternative	alternative
5.8.3.9.4	ACC health check	OFF	N	n.a	Preferred	alternative	alternative
5.8.3.9.5	ACMS dynamic verification	OFF	N	n.a	Preferred	alternative	alternative
5.8.5	Mode transitions						
5.8.5.3	Test start configuration	OFF	N	n.a	Preferred	alternative	alternative
5.8.5.4	Launch to Launch	OFF	N	n.a	Preferred	alternative	alternative
5.8.5.5	Launch to SAM	OFF	N	n.a	Preferred	alternative	alternative
5.8.5.6	SAM to SAM	OFF	N	n.a	Preferred	alternative	alternative
5.8.5.7	SAM to NOM	OFF	N	n.a	Preferred	alternative	alternative
5.8.10	Launch clean run						
		OFF	Y	n.a	Preferred	alternative	alternative
5.8.11	Launch sequence robustness						
5.8.11.3.2	Satellite power on	OFF	N	n.a	Preferred	alternative	alternative
5.8.11.3.4	Configuration for launch (status)	OFF	N	n.a	Preferred	alternative	alternative
5.8.11.3.5	Configuration for launch	OFF	N	n.a	Preferred	alternative	alternative
5.8.11.3.6	Separation	OFF	N	n.a	Preferred	alternative	alternative
5.8.11.3.7	S/C acquisition	OFF	N	n.a	Preferred	alternative	alternative
5.8.11.3.8	Initial checkout in SAM mode	OFF	N	n.a	Preferred	alternative	alternative
5.8.11.3.9	Transition to NOM mode	OFF	N	n.a	Preferred	alternative	alternative
5.8.11.3.10	Orbit control manoeuvre	OFF	N	n.a	Preferred	alternative	alternative

IST 1 Part 2 He I or He II

Chapter of IST Spec Issue 4		Instr. Mode	Real Battery required	Satellite X- Axis tilting	Ambient or cool down (deviating from IST Spec !!!)	He I HTT venting >20mg/sec	He II HTT venting >20mg/sec
5.8.5 Mode transitions							
5.8.5.8	NOM to NOM	PACS spectro SPIRE STBY HIFI STBY	N	0.23		alternative	Preferred
5.8.5.9	NOM to EAM	PACS STBY SPIRE STBY HIFI STBY	N	0.23		alternative	Preferred
5.8.5.10	EAM to EAM	PACS STBY SPIRE STBY-> Photo->STBY HIFI STBY	N	0.23		alternative	Preferred
5.8.5.11	EAM to NOM	PACS STBY SPIRE STBY. ->Photo	N	0.23		alternative	Preferred
5.8.5.12	NOM to SM	PACS STBY->OFF SPIRE Photo->OFF HIFI STBY->OFF	N	0.23		alternative	Preferred
5.8.5.13	SM to SM	OFF	N	0.23		alternative	Preferred
5.8.5.14	SM to SAM	OFF	N	0.23		alternative	Preferred
5.8.5.17	EAM to SAM (needs new SAM to NOM and NOM to EAM)	PACS STBY SPIRE STBY HIFI Science -> STBY	N	0.23		alternative	Preferred
5.8.5.18	NOM to SAM (needs new SAM to NOM)	PACS Burst-> STBY SPIRE STBY	N	0.23		alternative	Preferred
5.8.5.19	Test end	OFF	N	0.23		alternative	Preferred
5.8.6 S/C reconfiguration							
5.8.6.2	Test start configuration	PACS STBY SPIRE STBY HIFI STBY	N	0.23		alternative	Preferred
5.8.6.3	CDMS level 3a	PACS STBY SPIRE STBY HIFI Prime.	N	0.23		alternative	Preferred
5.8.6.4	CDMS level 3b	PACS STBY SPIRE STBY HIFI STBY	N	0.23		alternative	Preferred
5.8.6.5	ACMS level 4	PACS Prime->OFF SPIRE STBY->OFF HIFI STBY->OFF	N	0.23		alternative	Preferred
5.8.6.6	ACMS recovery from Survival Mode (ACMS SASM to SAM)	OFF	N	0.23		alternative	Preferred
5.8.6.7	CDMS level 4	PACS Prime->OFF SPIRE STBY->OFF HIFI STBY->OFF	N	0.23		alternative	Preferred
5.8.6.8	Test end	OFF	N	0.23		alternative	Preferred
5.8.12 NOM mode robustness							
5.8.12.3.1	Initial State	PACS STBY SPIRE Photo HIFI STBY	N	0.23		alternative	Preferred
5.8.12.3.2	CDMS PM 1553 BC failure simulation	PACS STBY SPIRE Photo-> STBY	N	0.23		alternative	Preferred
5.8.12.3.3	CDMS PM 1553 BC failure recovery	PACS Photo SPIRE STBY HIFI STBY	N	0.23		alternative	Preferred
5.8.12.3.4	Initial state second test	PACS Photo SPIRE STBY HIFI STBY	N	0.23		alternative	Preferred
5.8.12.3.5	ACMS 1553 RT failure simulation	PACS Photo-> STBY SPIRE STBY	N	0.23		alternative	Preferred
5.8.12.3.6	ACMS 1553 RT failure recovery	PACS STBY->OFF SPIRE STBY->OFF HIFI STBY->OFF	N	0.23		alternative	Preferred
5.8.13 Test of Instrument FDIR OBCP							
5.8.13.4	SPIRE FDIR OBCP	SPIRE	N	0.23		alternative	Preferred
5.8.13.5	PACS FDIR OBCP	PACS	N	0.23		alternative	Preferred
5.8.13.6	HIFI FDIR OBCP	HIFI	N	0.23		alternative	Preferred
5.9 DEGRADED CASES							
5.9.1	S/C ability to be operated in degraded modes					alternative	Preferred

IST 1 Part 3 He II only

Chapter of IST Spec Issue 4	Instr. Mode	Real Battery required	Satellite X- Axis tilting	Ambient or cool down (deviating from IST Spec !!!)	He I HTT venting >20mg/sec	He II HTT venting >20mg/sec
Satellite Commissioning						
CCU (cryostat) commissioning	OFF	N	23			Required
Instruments commissioning and performance verification						
Test start (restart) configuration	OFF	N	23			Required
SPIRE commissioning test	SPIRE	N	23 → 90			Required
PACS commissioning test	PACS	N	23			Required
HIFI commissioning test	HIFI	N	0-23			Required
SPIRE and PACS parallel mode	SPIRE/PACS	N	23			Required
Test end or interruption	OFF	N				Required
CDMS management						
General Sequence (Integration with RMS DTCP number 2)	PACS Prime STBY → Burst → X SPIRE STBY HIFI STBY	N	0-23		alternatively if MTL is compatible with instrument operations	Preferred
MTL management	PACS Prime STBY → Burst → X SPIRE STBY HIFI STBY	N	0-23		alternatively if MTL is compatible with instrument operations	Preferred
OBCP management	PACS Prime STBY → Burst → X SPIRE STBY HIFI STBY	N	0-23		alternatively if MTL is compatible with instrument operations	Preferred
SSM/I management	PACS Prime STBY → Burst → X SPIRE STBY HIFI STBY	N	0-23		alternatively if MTL is compatible with instrument operations	Preferred
FDIR level 1 & 2	PACS Prime STBY → Burst → X SPIRE STBY HIFI STBY	N	0-23		alternatively if MTL is compatible with instrument operations	Preferred
OBT management	PACS Prime STBY → Burst → X SPIRE STBY HIFI STBY	N	0-23		alternatively if MTL is compatible with instrument operations	Preferred
DTCP worst case scenario						
	PACS (Burst) SPIRE STBY HIFI Prime	N	0-23		TBC	Preferred
REFERENCE Mission Scenario						
Test start configuration		Y				Required
Test steps		Y				Required
HIFI OD	HIFI OD	Y	0-23			Required
PACS OD	PACS OD	Y	0-23			Required
SPIRE OD	SPIRE OD	Y	0-23			Required
Test end		Y				Required

Table 3: S/C conditions for each IST test sequence

5.3 General Precautions and Safety

5.3.1 General Safety Requirements, Precautions

Special condition and hazards

The following Operational restrictions shall be carefully taken into account:

1. Before any test article modification the relevant power sources shall be switched OFF
2. Protective caps shall be installed on each harness or unit connector when these are not linked to their equipment
3. All the test data shall be recorded
4. Before starting the test sequence, care must be taken in verifying that all hardware links are correctly connected.
5. to avoid possible damages, no signal shall be applied in no powered units, except where otherwise specified
6. During testing the step by step procedure shall be followed. Changes will be possible and will be managed by a Procedure Variation Sheet approved by the AIV and PA.
7. In case of any failure, the activities shall be stopped until troubleshooting plan is generated and approved.
8. In case of non-conformance, the procedure addressed in [AD 2.1.2.b] shall be applied.
9. The time of usage (ON/OFF cycles and ON duration) of each limited life equipment (FPGAs', etc?) shall be noted and recorded by the QA.
10. No stimulus has to be applied to any CRS switched-OFF
11. The EPC cannot be switched-ON for more than 5 minutes without any TWT turned-ON.
12. Care must be exercised when working around the S/C; in particular, if real IMU(s) or CRS rate sensors are involved, which may register any mechanical vibration affecting the responses of the ACC and/or invalidating the overall test results.
13. In case of AC failure, when the AC power will be again available, preliminary checks will be performed to verify that no damage has be caused to EGSE, SLE and S/L. The test conductor can decide to restart or to continue the test depending on the point where the failure happened.
14. Considering the SVM NCR affecting the XPND FM4, the transponder will be continuously flushed with Nitrogen during the tests.
15. Due to the use of liquid Helium during the Herschel mechanical test campaign, particular safety precautions need to be taken. The cryostat operations which require handling of liquid Helium are described in a dedicated procedure.
16. It shall be ensured that, for the beginning of each IST_START, the BDR's have been switched offi in order that skin plug reconfiguration can be carried out safely in presence of the flight battery. Note : During IST End the power down sequence, commands to turn the BDR's off (to isolate the battery)are issued via the CDMU. If it is suspected for any reason the battery has not been isolated by

switching the BDR's off then the stand alone procedure "BDR Isolation" from HP-2-ASED-TP-0215 shall be executed, startup from the power down state.

17. The maximum continuous battery discharge limit of 36 A shall be respected at all times.

5.3.1.1 Instrument specific safety requirements and precautions

HIFI

LOU being at ambient temperature, IMT objectives on HIFI will be limited. Specifically, the LO power should be limited and higher frequency channel should not used (IID-B). The bias range to the mixers and electromagnets should also be restricted

PACS

Whenever PACS FPU is at HEIL conditions:

Prior to any PACS instrument switch-on within this procedure, the FDIR mechanisms as described in "PACS Failure Detection Isolation and Recovery"(PACS-ME-GP-002, Issue 1.2) must be in place and have to be up and running on the CDMU. This shall remain activate during all modes of the PACS instrument, except the off mode.

5.3.2 ESD constraints

- The spacecraft must be grounded
 - All connectors have to be covered with ESD dust caps when not mated
 - All AIT personnel have to wear antistatic shoes and clothes
-
- The clean room floor around and under the item under test shall be covered with an antistatic carpet, which is grounded to facility ground.

5.3.3 *Grounding Configuration*

A distributed single point grounding (DSPG) approach is used between the facility GSE and the satellite for electrical integration and performance tests.

Instrument signal ground isolation to the EGSE data processing electronics will be ensured.

5.3.4 Test Equipment Calibration and Performances

All equipment used for test activities shall be within their normal calibration period performed and certified either by the Facility or equipment supplier. Certification and calibration labels shall be available for inspections before activity start. Calibration shall be performed by/with qualified personnel/procedures under PA/QA supervision and approval. All the instrumentation to be used for the test shall follow the relevant PA rules.

Item Name	Item Type	Serial Number	Calibration Status

5.3.5 Special QA Requirements

The QA/PA representative shall be present during all test activities.
All documentation shall be inspected and approved before start and end of each test activity. The responsible PA engineer shall ensure that all 'as run' procedures have all the relevant information correctly recorded.

5.4 GSE

Test Equipment List					
Item	Manuf.	Model No.	SN No.	Invent No.	Next Calib.

5.4.1 MGSE

No additional mechanical GSE is required to perform the test described in this test procedure.

5.4.2 CVSE

The set-up of the CVSE will be performed according to HP-2-ASED-0095

Helium operations will be performed according

The cool down and filling procedure: HP-2-ASED-PR-0082 for Helium I

The Helium II top-up procedure: HP-2-ASED-TP-0083 for Helium II

The cover cooling procedure: HP-2-ASED-PR-0048 for special instrument stimulation

A list of the CVSE hardware which might be used is given below.

Qty.	Designation/Manufacturer	Provided by	Drawing/Ident. NR:	Calibr. Date
2	LHe Service Vacuum Pumping Unit I	BOCE	CI No. 142 310-01	
2	LHe Service Vacuum Pumping Unit II	BOCE	CI No. 142 310-02	
1	Main High Vacuum Pumping Unit	BOCE	CI No. 142 310-03	
1	Mobile High Vacuum Pumping Unit	BOCE	CI No. 142 310-03	
3	Molecular Turbo pumps	BOCE	CI No. 142 310-03	
1	Laboratory Vacuum Pump in safety unit	BOCE	CI No. 142 310-04	
1	Laboratory Vacuum Pump in scaffolding	BOCE	CI No. 142 310-04	
1	Laboratory Vacuum Pump in scaffolding (Ex proof.)	BOCE	CI No. 142 310-05	
2	CVSE Monitoring Rack	BOCE	CI No. 142 310-06	
2	Leak Detector Spectron 5000	BOCE	CI No. 142 310-07	
3	He I transfer lines (Y0211/Y0221/Y0231)	DeMaCo	CI No. 142 310-08	
3	He II transfer lines (Y0201-1, -2, -3)	De MaCo	CI No. 142 310-08	
2	Dewar to dewar transfer lines (Y0241 - Y0242)	De MaCo	CI No. 142 310-08	
1	Cover flushing line inlet (L1 + L2, separable)	AAE	CI No. 155 210	
1	Cover flushing line outlet (L3 + L4, separable)	AAE	CI No. 155 210	
1	Heater unit for cover inlet line	DeMaCo		
3	Venting line (Y0601/Y0602/Y0601-3)	DeMaCo	CI No. 142 310-09	
2	Pumping lines (Y0611-1 / Y0611-2)	DeMaCo	CI No. 142 310-09	
Set	Bake out lines (Y0633)	ASED	CI No. 142 310-09	
Set	HiVac Pumping lines (Y0673)	ASED	CI No. 142 310-09	

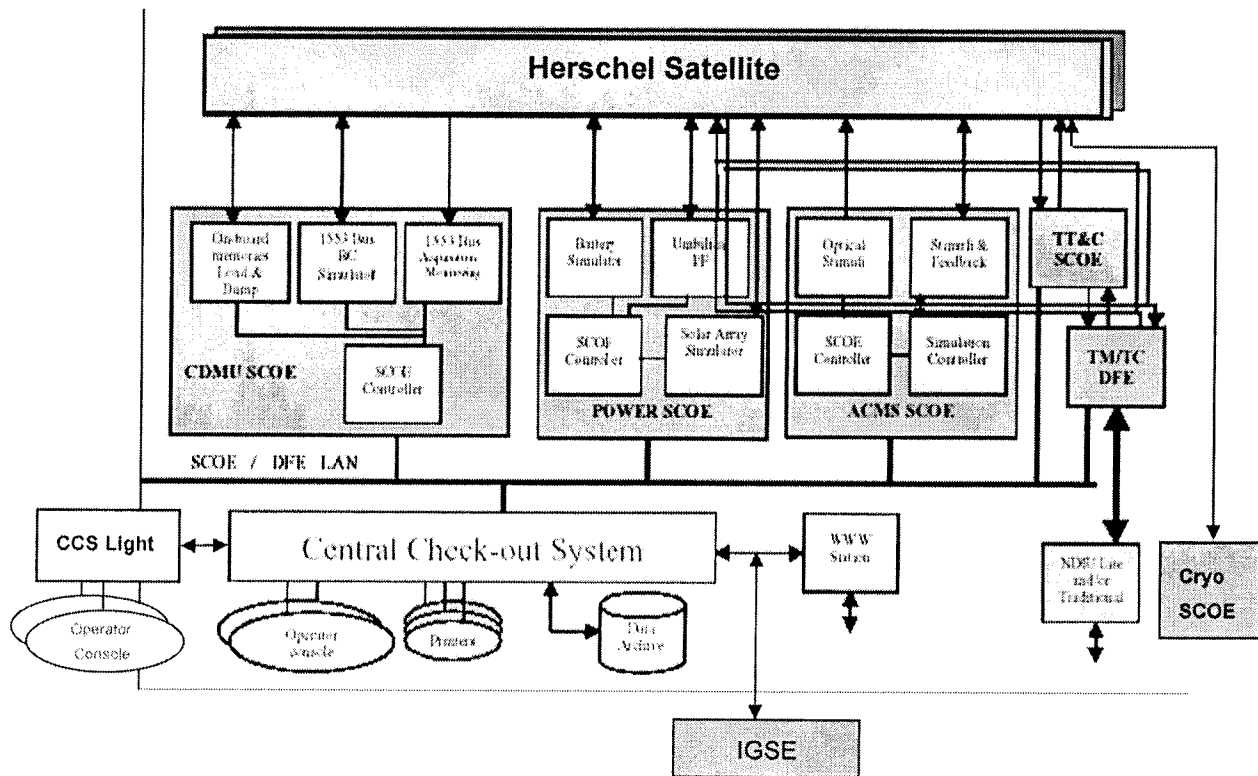
Qty.	Designation/Manufacturer	Provided by	Drawing/Ident. NR:	Calibr. Date
Set	Helium I lines (Y0612)	ASED	CI No. 142 310-09	
Set	Helium II Pumping lines (Y0602)	ASED	CI No. 142 310-09	
2	Scaffolding for He lines	ASED	CI No. 142 310-10	
10	450 LHe Dewars type HDS 450 -EIPS	Linde		
1	Spiro pump DryTel 1025	ASED		
2	Liquid level sensor	ASED		
2	Helium depth indicator	ASED		
3	Pressure indicator (Keller)	ASED		
1	Laminar flow meter (0-10 mg/s / 0-70 mg/s)	ASED		
1	Standard flow meter (0-5 g/s)	ASED		
2	Gas flow counter	ASED		
Set	Vacuum houses	ASED		
Set	Miscellaneous vacuum seals	ASED		
Set	Vacuum parts	ASED		
Set	Special tools	ASED		
1	Scale	ASED		
1	Pressure Control unit (0-1500 mbar, Ziegler)	ASED		
Set	Plastic pipes (Diameter 20-40 mm, different length)	ASED		
1	HEXA He heating unit	CryoVac	S-21-7021	
Set	Stands	ASED		
Set	Trip tray	ASED		
Set	Special adapters	ASED		
1	Gate valve DN160	ASED		
1	He II bypass valve	ASED		

5.4.3 EGSE

5.4.3.1 EGSE Hardware Configuration

The EGSE configuration, when completed, is shown in the figure below

S/S	Unit	Configuration		SCOE simulated equipments	Remarks
		<i>Herschel</i>			
EGSE	CCS	1			
	CCS Light	1			
	TM/TC DFE	1			
	CDMU SCOE	1			
	ACMS SCOE	1			
	TT&C SCOE	1			
	POWER SCOE	1			
	Cryo SCOE				
	NDIU				



The Herschel/ EGSE will be built with the following equipment:

- Central Check Out System (CCS)

- Central Check Out System Light (CCS Lite)
- The Power Control Subsystem SCOE (Power SCOE)
- The Telemetry, Tracking and Command SCOE (TT&C SCOE)
- The Telemetry and Telecommand Data Front End Equipment (TM/TC DFE)
- The Attitude and Control Measurement Subsystem SCOE (ACMS SCOE)

- The Central Data Management Unit SCOE (CDMU SCOE)
- The Cryo SCOE which performs four general tasks
 - Control and monitoring the Cryostat Instrumentation either directly by the Cryo SCOE, i.e. locally or initiated by the CCS, i.e. remotely.
 - Substitution of the real CCU if the CCU is not available
 - Monitoring of several parameters of the Cryo Vacuum Support Equipment (CVSE).
 - Simulate the launcher interface by providing "dry loop commands" to be sent to the CCU.

All the above items are interconnected through an Ethernet Local Area Network (LAN) used to exchange both data and command & control information.

The CCS Lite will be used and configured in order to have a hot TM/TC backup in case of main CCS crashes.

The NDIU will be configured to put ESOC in listening mode.

5.4.3.2 EGSE User Software

Most of the Test Software will be developed on the CCS, based on SCOS 2k, and will interface the HPSDB. It will consist mainly of:

- Test Sequences
- Synoptic Displays
- Data Evaluation and Test Analysis Software
- Simulation Software Master sequences (mainly for ACMS S/S).

On the contrary, on the SCOE's/DFE only a very peculiar type of software will be developed; it will mainly consist of:

- Configuration/set-up files for SCOE's/DFE instrumentation
- Sequence of commands
- Simulation files for Dynamic control and ACMS Sensors simulation
- Telemetry Simulation file for Missing Unit (Experiments).

A complete list of EGSE SW version (particularly CCS and HPSDB) shall be provided before start of test and attached to this procedure.

5.4.4 OGSE

No OGSE is required to carry out the test activities of the IST.

5.4.5 Special Equipment

5.4.5.1 Cooling device

The HIFI units when equipped with MLI (WEV, WEH, HRV, HRH) exceed their maximum operating temperature, WEV 35,5°C vs 30°C, HRV 40,1°C vs 40°C, WEH 35,3°C vs 30°C, HRH 41,9°C vs 40°C.

Therefore the implementation of a cooling system for the two HIFI panels (forced convection directed in these areas) is mandatory.

All the units stay in their operating temperature range with comfortable margins, except:

- GYRO baseplate 63,5°C vs 55°C, due to use of flight thermal control parameters, covered by RFD HP-300000-AI-RD-0011 issue 03.
- CRS1 and CRS2 around 50°C, due to use of flight thermal control parameters, covered by RFD H-P-300000-AI-RD-0014 issue 03.

6 Verification Requirements and Test Criteria

PASS/FAIL CRITERIA

At each test stage completion, the test success is determined comparing the results obtained against the expected values.

If the compliance between obtained and expected values has been met, and authorisation to proceed with the next stage of the test is given, then the actual test stage must be considered satisfactory completed.

The success of the overall testing activities is determined from the satisfactory completion of all test stages.

Successful criteria to be satisfied in each test stage shall be:

- Test conditions according to specification requirement;
- Complete verification of the requirement aspects according to the test specifications
- Fulfilment of test results with respect to required data;
- Verification that all the TM parameters used to monitor the SAT do not exceed the limit thresholds loaded in the HPSDB (OOL display);
- Verification that the TM (5,2), TM (5,4) and TM (1,8) received event reports are only those ones expected to fulfil the pass test criteria.

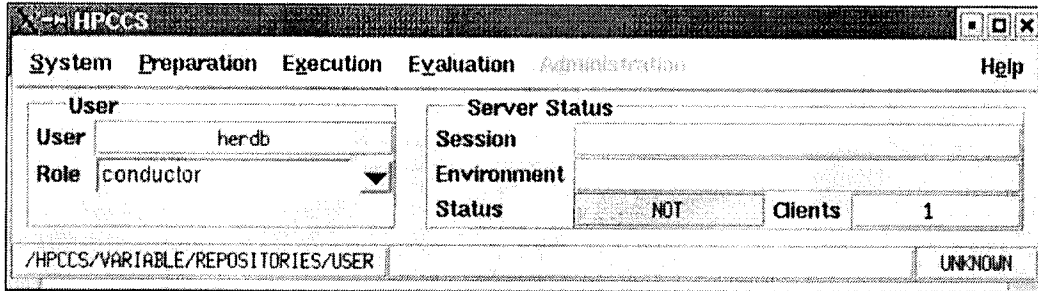
7 IST Test

7.1 HPCCS Configuration for IST Test

7.1.1 Apply Tag on test files

The **EGSE operator** has to perform the following steps **before starting IST test**:

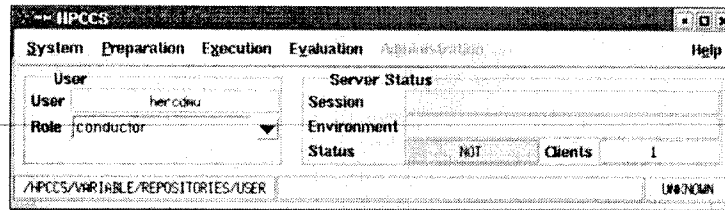
1. On a Workstation login as **herdb** (password **herctest**), being this user dedicated to DB operations for Herschel FM Checkout System, and open a shell (xterm).
2. Logged as herdb, run Startmmi and the following window will occur



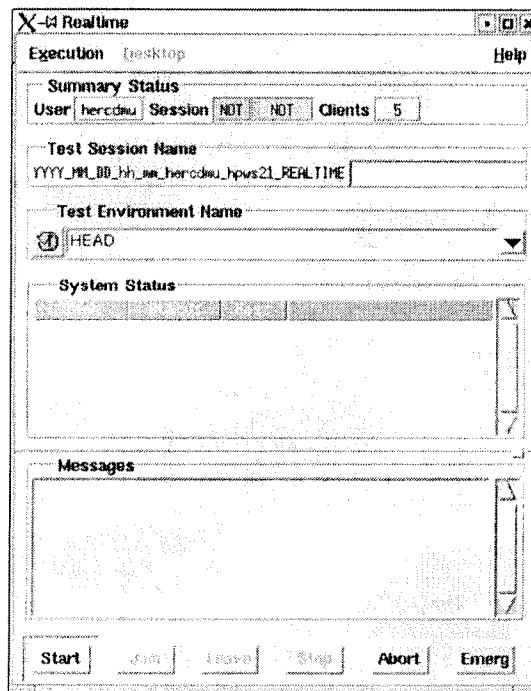
3. Logged as herdb, in HPCCS window, select menu "**Preparation → Prepare**"
4. Logged as herdb, In **PREP** window, select menu "**Preparation → Discard all**"
5. Logged as herdb, In **Confirm Discard** window, click the button **Discard**
6. Logged as herdb, in **PREP** window, select menu "**Preparation → Update**"
7. Logged as herdb, in **Check out environment** window, click the button **Check out** and then **Close**
8. Logged as herdb, in **PREP** window, select menu "**Tag → Apply**"
9. Logged as herdb, in the window **Apply Tag → New Tag**, insert TAG name
Currently, TAG name for IST has the format:
IST_x_PART_x_TP_xxxx_x_x_BEGIN_xxx
10. Logged as herdb, push **Apply → Apply**
11. Logged as herdb, confirm Tag Application Push Apply button
12. Logged as herdb, open a new **shell** window (xterm)
13. Logged as herdb, execute the command **update_tag**
14. Logged as herdb, insert the name of TAG
IST_x_PART_x_TP_xxxx_x_x_BEGIN_xxx
15. Logged as herdb, in **PREP** window, select menu "**Tag → Apply**"
16. Logged as herdb, in **Apply tag** window, select in the list the TAG
IST_x_PART_x_TP_xxxx_x_x_BEGIN_xxx
17. Logged as herdb, push **Copy selected tag**
18. Logged as herdb, modify the TAG name with **IST_x_PART_x_TP_xxxx_x_x_END_xxx**
19. Logged as herdb, push **Apply → Apply**
20. Logged as herdb, confirm Tag Application Push Apply button

7.1.2 Start test session on HPCCS

Logged as **hercdmu** or **heracms** run "startmmi"



On **HPCCS** window, select menu "**Execution** → **Start**" in order to open the following window. In the "**Test Session Name**" field, insert an abbreviation describing which IST test will be performed and click the button "**Start**" to proceed.



Once the real time session initialized, the button "**Join**" is enabled and shall be clicked. Then configure desktop of different CCS stations through the menu "Desktop" and the following menus:

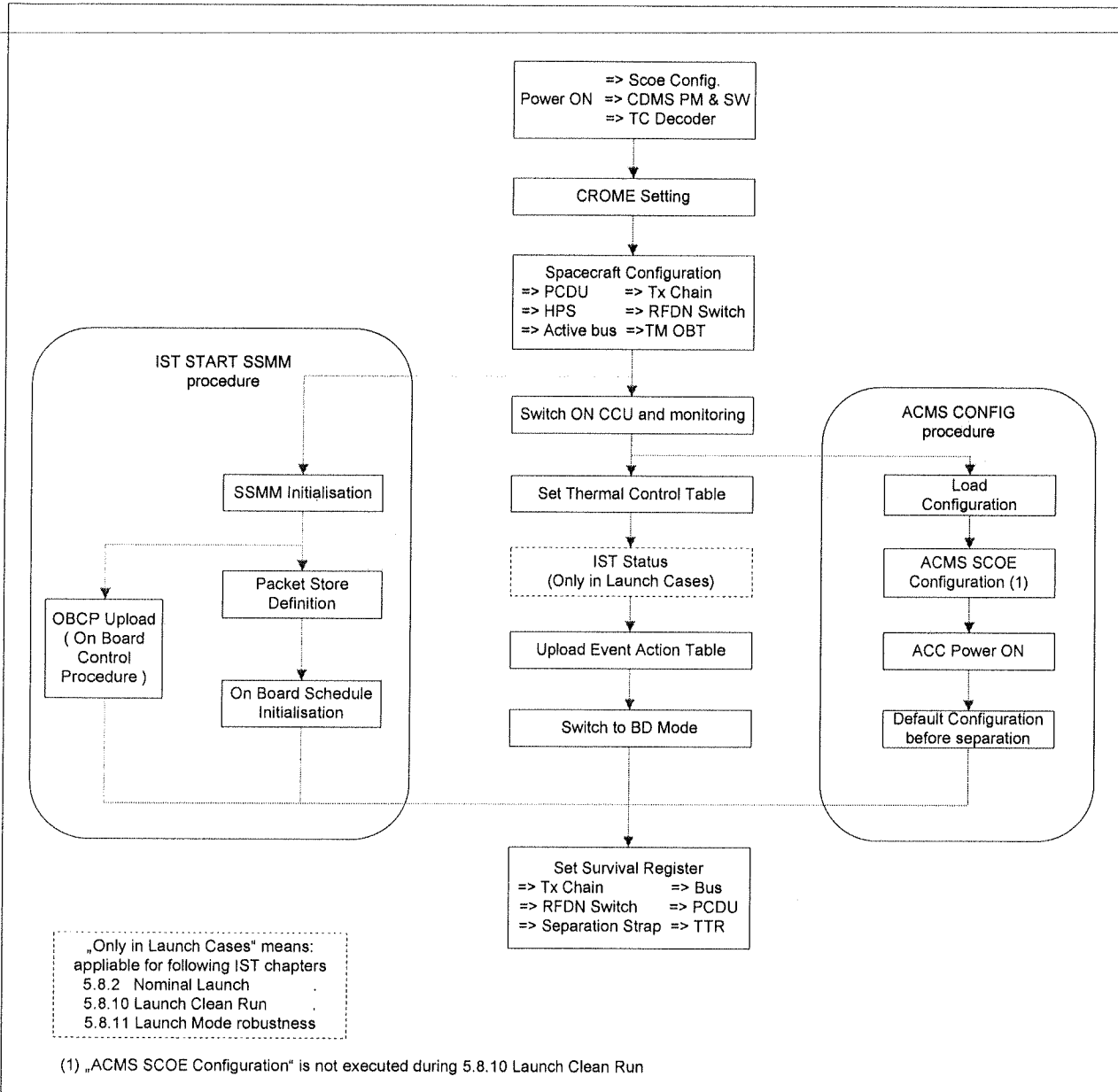
- Monitoring → Telemetry Desktop
- Monitoring → Telemetry Packet history
- Monitoring → Out of limit
- Monitoring → On Board Event History
- Test Sequences → Test Conductor Console
- Command → Telecommand History

7.2 IST START for Spacecraft configuration

7.2.1 Diagram Overview

The flow of the "IST START" sequence is depicted in the diagram below. To save time during the satellite power on, the SSMM initialising and the ACMS switch on is performed in parallel.

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7.2.2 IST Configuration Table

The Herschel Satellite configuration for each IST test case is listed in the table below.

SASLPS	Bat.	Crome	Sep.	Strap	TTR	TM	TC	PM	SSMM	Bus	PCDU	HPS	TxChain	RFDN	CCU		ACMS			
SCOE	SCOE	PAP/CCS	SM	SM	OBT	Dec.	SW		SM	SM	SM	SM	SM	SM	ON	Mode	Config. File			
5.8.2 NOMINAL LAUNCH																				
SAS	Sim. Charged + Launch	PM A Nominal	Not Separated	B	A	A	A1	A 0-1-2 B 0-1-2	A	B	A	B	A	A	B	1&3	ABBB	A&B	2	IST_FN
5.8.3a ACMS Commissioning																				
SAS	Sim. Charged	PM A Nominal	Separated	B	A	B	A1	A 0-1-2 B 0-1-2	A	B	A	B	A	A	B	1&3	ABBB	A&B	1	IST_SCA1
5.8.3b S/C Commissioning																				
SAS	Sim. Charged	PM A Nominal	Separated	B	A	A	A1	A 0-1-2 B 0-1-2	A	B	A	B	A	A	B	1&3	ABBB	A&B	1	IST_MOD
5.8.4.5.1 SPIRE Commissioning																				
SAS	Sim. Charged	PM A Nominal	Separated	B	A	A	A1	A 1 B 1	B	A	A	B	A	A	B	1&3	ABBB	A&B	1	
5.8.4.5.2 SPIRE Spectrometer Complementary Test																				
SAS	Sim. Charged	PM B Nominal	Separated	A	B	B	B1	A 3 B 3	B	A	B	A	B	B	A	2&4	AABB	A&B	1	

SASLPS	Bat.	Crome	Sep. Strap	TTR	TM	TC	PM	SSMM	Bus	PCDU	HPS	TxChain	RFDN	CCU		ACMS	
SCOE	SCOE	PAP/CCS	SM	SM	OBT	Dec.	SW		SM	SM		SM	SM	ON	Mode	Config. File	
5.8.4.6 PACS Commissioning																	
SAS	Sim. Charged	PM A Nominal	Separated	A	A	B	A1	A2 B2	B	A	B	A	B	B	A	2&4	AABB A&B 1
5.8.4.7 HIFI Commissioning																	
SAS	Sim. Charged	PM B Nominal	Separated	B	A	A	B1	A3 B3	A	B	A	B	A	A	B	1&3	ABBB A&B 1
5.8.4.8 Parallel Mode Commissioning																	
SAS	Sim. Charged	PM B Nominal	Separated	A	B	B	B1	A0 B0	A	B	B	A	B	B	A	2&4	AABB A&B 1
5.8.5 Mode Transition																	
SAS	Sim. Charged	PM A Nominal	Separated	B	A	A	A1	A1 B1	A	B	A	B	A	A	B	1&3	ABBB A&B 2 IST_MOD
5.8.6 SC Reconfiguration																	
SAS	Sim. Charged	PM A Nominal	Separated	A	B	B	A1	A2 B2	B	A	B	A	B	B	A	2&4	AABB A&B 1 IST_FD_B
5.8.7 CDMS Management																	
SAS	Sim. Charged	PM A Nominal	Separated	B	A	A	A2	A1 B1	A	B	A	B	A	A	B	1&3	ABBB A&B 2 IST_CDMS
5.8.8 DTCP Worst Case Scenario																	
SAS	Sim. Charged	PM B Nominal	Separated	A	B	B	B2	A2 B2	B	A	B	A	B	B	A	2&4	AABB A&B 2 IST_WCS



Herschel Integrated Satellite Test Procedure: Leading Procedure

Herschel

SASL Bat. Crome Sep. Strap TTR TM TC PM SSMM Bus PCDU HPS TxChain RFDN CCU ACMS
 PS SCOE PAP/CCS SM SM OBT Dec. SW SM SM SM SM ON Mode Config. File

5.8.9 RMS Reference Mission Scenario																				
SAS	Sim. Charged	PM A Nominal	Separated	B	A	A	A1	A 0-1-2 B 0	A	B	A	B	A	A	B	1&3	ABBB	A&B	1	IST_RMS
5.8.9 Launch Clean Run																				
LPS	REAL	PM A Nominal	Not Separated	B	A	A	A1	A 0-1-2 B 0-1-2	A	B	A	B	A	A	B	1&3	ABBB	A&B	2	IST_CLN
5.8.11 Launch Mode Robustness																				
SAS	Sim. Charged +Launch	PM A Nominal	Not Separated	B	A	A	A1	A 0 B 0	A	B	A	B	A	A	B	1&3	ABBB	A&B	2	IST_LSR
5.8.12 NOM Mode Robustness																				
SAS	Sim. Charged	PM A Nominal	Separated	A	B	B	A1	A 3 B 3	B	A	B	A	B	B	A	2&4	AABB	A&B	1	IST_NMR
5.8.13 Instrument FDIR																				
SAS	Sim. Charged	PM A Nominal	Separated	B	A	A	A2	A 1 B 1	A	B	A	B	A	A	B	1&3	ABBB	A&B	1	IST_CDMS

7.2.3 Initialisation

Step-No.	Initialisation-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
<u>TT&C SCOE initialisation</u>							
1	Verify that TT&C SCOE application SW is running Otherwise go on TTC SCOE or access remotely (command "startCMD ttcvnc" on shell window") and click "TTC SCOE Herschel" icon on TT&C SCOE desktop controller and wait for self test completion.					✓	
2	On TT&C SCOE application, in window ":: CONF namespace" (that can be open by menu "windows/SCOE config"), select menu "Config/Load", load the file "Herschel.conf" then click "open" button.					✓	
<u>SPACECRAFT SKIN CONNECTORS CONFIGURATION</u>							
3	Verify that all the SCOE skin connectors cables are installed <ul style="list-style-type: none"> Goto chapter 4.3 Choose according to the IST Test case the related skin configuration table Check the list and sign off (together with PA and Floor Manager). 					✓	

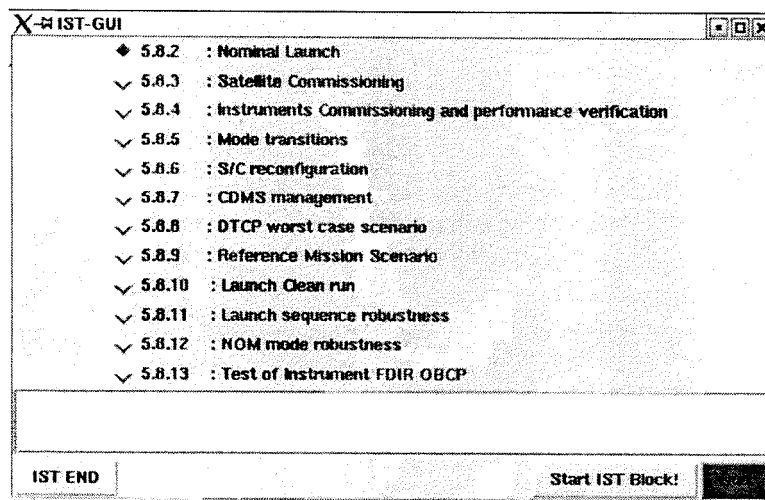
Test location: ESTEC	Operator ORA	Product-Assurance: R. Goossens	Date: 30 04 08	Time 16:56
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Step-No.	Initialisation-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
ACMS SCOE CHECK							
4 N/A for "Launch Clean Run"	Verify that the ACMS SCOE is ON and operational					✓	
5 N/A for "Launch Clean Run"	In the Clean Room, check on the ACMS SCOE that STR UCE Electrical Stimuli program on PC2 and PC3 are enabled (i.e. double click on "scroll lock" and check "01-02 & 01-03" that mouse pointer can be moved). Otherwise execute Annex D Operator Note 3					✓	

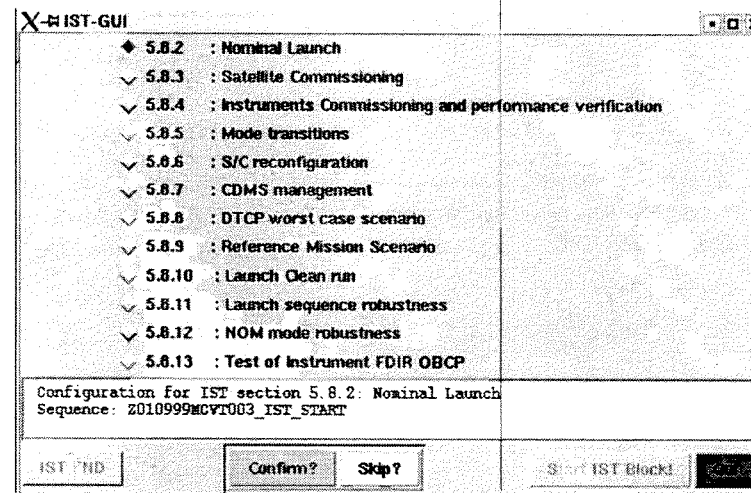
Test location: ESTEC	Operator OMA	Product-Assurance: R. Goossens	Date: 300408	Time 16:56
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7.2.4 IST Start Step by Step Procedure

At the CCS test sequence console call the sequence "Z010999MCVT201_IST_GUI " to start an IST test. When the Graphical User Interface (see Picture 1) occurs, select the appropriate test case (and note it down in this Test Procedure) followed by a click on the "Start IST Block".



Picture 1



Picture 2

Then configuring the spacecraft for the selected IST Test is proposed to be run or skipped (see Picture 2). If the button "Confirm" has been clicked, continue with step 1 of the following IST START step description. Otherwise pressing the button "Skip" will lead to chapter 7.2

Test location: <i>ESTEC</i>	Operator <i>e. Mach</i>	Product-Assurance: <i>R. Boassens</i>	Date: <i>30.4.08</i>	Time <i>16:57</i>
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Step- No.	IST_START-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
1	Z010999MCVT003_IST_START At the bottom of the window, the IST_START configuration panel displays all parameters applied during the IST_START. ⇒ Click the button "Continue" to proceed	To Check in Config. Table (Page 73)				✓	

Configuration of "IST START"

Power SAS/LPS SCOE: SAS Bat. SCOE: Simulated PCDU: A HPS: A	CDMS TM OB: A Bus: A PM: A1 PapCcs: PMAnominal Survival Register Bus: B Launch Straps: Not Separated PCDU: B TTR: B Tx Chain: B RFDN Switches Position: ABBB	Rx and Tx Chain Tx Chain (Xpnd, Tx, EPC, TWT): A TC decoder: A TM Rate: Medium (150Kbps) RFDN Switches in use: 1&3 SSMM Mass Memory: A0 and B0
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Continue?

IST_START Configuration Panel

Test location: ESTEC	Operator: C. Hudy	Product-Assurance: R. Goossens	Date: 20.4.08	Time: 16:57
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Step-No.	IST_START-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
2	<p>Z010999MCVT003_IST_START</p> <p>Note the execution diagram, resuming each configuration steps and check all parameters are set as previously (particularly if any modification has been done on configuration panel)</p> <p>"START Satellite HERSCHEL "IST_START"</p> <p>⇒ Choose "Yes" or "No"</p>	YES				✓	
3	<p>Z010999MCVT097_ASDGEN_CRIT_PARS_CHECK</p> <p>This script will run during the whole session to monitor critical parameters.</p> <p>As soon as wrong value will be detected. A popup window will occur alerting the operator about incorrect TM checks</p> <p>⇒ Minimise this window by clicking the corresponding button (on corner top right, first button from left)</p>					✓	

Test location: <i>EST EC</i>	Operator: <i>C. Mach</i>	Product-Assurance: <i>K. Goossens</i>	Date: <i>30.4.08</i>	Time: <i>16:58</i>
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Step-No.	IST_START-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
4	<p>Z010999MCVT003_IST_START</p> <p>Reply to the prompt: "SPACECRAFT POWER_ON"</p> <p>⇒ Click the button "Confirm" to proceed</p>					✓	
5	<p>Z010999MCVT001_POWER_ON_HER_IST</p> <p>Set Battery [REDACTED]</p> <p>Set TCDecoder to [REDACTED]</p> <p>Set PM_SW [REDACTED]</p> <p>Do you want to continue with the upper configuration:</p> <p>If these parameter values are in accordance with the IST Configuration Table (Page 73),</p> <p>⇒ click the button "OK" to proceed</p>	<p>To Check in Config. Table (Page 73)</p> <p>Bat.SCOE</p> <p>TCDec.</p> <p>PM/SW</p>				✓	

Test location: ESTEC	Operator: C. Much	Product-Assurance: R. Goossens	Date: 30.4.08	Time: 16 : 59
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Step-No.	IST_START-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
6	<p>Z010999MCVT001_POWER_ON_HER_IST A Popup window occurs asking to verify data reception on TM/TC Data Front End workstation: In window "System Status", check following panels</p> <ul style="list-style-type: none"> → TM chain / TM Acquisition synchronised and locked Status expected → View / TM Transfer Frame Monitor TM frame data should be received before few minutes <p>⇒ click the button "OK" to proceed</p>					✓	
7	<p>Z010999MCVT001_POWER_ON_HER_IST A Popup Window occurs asking to start a new acquisition in Bus Monitor with name IST on the CDMU SCOE: - start a new acquisition by clicking "Menu Mode/Start new Acquisition" If an acquisition is already started, please stop and restart</p> <p>⇒ click the button "OK" to proceed</p> <p>After few minutes Data transfer should be visible on the Bus Monitor.</p>				N/A for "Launch Clean Run" as the cables for CDMU BUS monitor are disconnected	✓	

Test location: <i>ESTEC</i>	Operator <i>O. Merlin</i>	Product-Assurance: <i>R. Goossens</i>	Date: <i>30.04.08</i>	Time <i>17:08</i>
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Step-No.	IST_START-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
8	D102159SCVT001_GET_ALARM_STATUS Check that both DOD ext1 and ext2 are "Not Asserted". Otherwise execute Annex D – Operator Note 8 ⇨ Click the button "End TS!" to proceed					✓	
9	D102159SCVT001_GET_ALARM_STATUS Check that both DOD ext1 and ext2 are "Not Asserted". Otherwise execute Annex D – Operator Note 8 ⇨ Click the button "End TS!" to proceed						
9b when BCR OCP are detected ACTIVE	Z010999MCVT001_POWER_ON_HER_IST Temporary workaround until SPR-107 / NCR-3312 are solved ⇨ click the button "YES" to proceed the workaround See SPR 107 / NCR 3312	YES			NCR 3492 : TTRMMemCorEr_A 1 := 0 SPR 244 : OutOfLimit for SA_Pan?_Temp_N/R (WMB0?569) SPR 284 : WARNING about missing TC SPR 285 : many TCs not acknowleged For launch clean run with real Battery fully charged, parameters BCR1, BCR2 are expected active.	✓	

Test location: <i>ESTEC</i>	Operator: <i>D. Norlin</i>	Product-Assurance: <i>K. Coossens</i>	Date: <i>30.06.08</i>	Time: <i>17:17</i>
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Step-No.	IST_START-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
10	D102159SCVT032TIMESYNCRO Wait until the synchronization between CDMS On-board Time and CCS is finished ⇒ Click the button "End TS!" to proceed				TM parameter ZE00999 out of limits and back in limits again at synchronisation to be expected.		
11	Z010999MCVT001_POWER_ON_HER_IST ⇒ Click the button "End TS!" to proceed					✓	
12	D102159SCVT001_GET_ALARM_STATUS Check that both DOD ext1 and ext2 are "Not Asserted". Otherwise execute Annex D – Operator Note 8 ⇒ Click the button "End TS!" to proceed					✓	
13	Z010999MCVT003_IST_START Reply to the prompt: <p style="text-align: center;">"CDMS Configuration:" "CROME settings [REDACTED]"</p> If the CROME settings is in accordance with the CROME PAP/CCS of IST Configuration Table (Page73), ⇒ Click the button "Confirm" to proceed	To Check in Config. Table (Page 73) CROME PAP/CCS				✓	

✓
PUS #1

✓
PUS #1



Test location: <i>ESTEC</i>	Operator: <i>O. Madon</i>	Product Assurance: <i>R. Goossens</i>	Date: <i>30.04.08</i>	Time: <i>17:16</i>
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Step-No.	IST_START-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
14	<p>D102159SCVT176_WRITE_CROME</p> <p>⇒ Click the button "End TS!" to proceed</p>					✓	
15	<p>Z010999MCVT003_IST_START</p> <p>Reply to the prompt:</p> <p style="text-align: center;">"CDMS Configuration:" "Set configuration" "Bus █ PCDU █ HPS █ TxChain █ RFDN ███" "TM-OBT █ TMrate Medium (150Kbps)"</p> <p>If all these parameter value are in accordance with the IST Configuration Table (Page 73),</p> <p>⇒ Click the button "Confirm" to proceed</p>	<p>To Check in Config. Table (Page 73)</p> <p>BUS PCDU HPS TxCh. RFDN TM-Obt</p>			Please note that the TMrate Medium (150 Kbps) is not specified in IST Config. Table on page 73.	✓	
16 Only if Encoder B is req.	<p>D102159SCVT104_ENCODER_SELECT</p> <p>⇒ Click the button "End TS!" to proceed</p>				SPR 286: TM check needs repeat		✓

Test location: ESTEC	Operator: O. Martin	Product-Assurance: K. Gossens	Date: 30.04.08	Time: 17:27
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Step-No.	IST_START-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
17	D102159SCVT174_IST_REDUNDANT_CONF ⇒ Click the button "End TS!" to proceed					✓	
18	Z010999MCVT003_IST_START Reply to the prompt: "SSMM Configuration" "????????" ⇒ Click the button "Confirm" to proceed	To Check in Config. Table (Page 73) SSMM				✓	
19	Z010999MCVT005_IST_START_SSMM Start initialising with Steps 1-2 of IST START SSMM Procedure (see Page 96). Then continue with the next test step of IST_START. NOTE: After completion of Mass Memory initialisation (roughly 12 minutes per bank), i.e. when ALL affected mass memory banks are ON, continue with step 3 of IST START SSMM Procedure (see Page 96).				In Launch cases, IST_START_SSMM shall be completely performed before next step	✓	

Test location: <i>ESTEC</i>	Operator: <i>J. Aertin</i>	Product-Assurance: <i>R. Coossens</i>	Date: <i>30.06.08</i>	Time: <i>17:22</i>
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Step-No.	IST_START-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
20	<p>Z010999MCVT003_IST_START</p> <p>Reply to the prompt: “SWITCH ON CCU  and” “START MONITORING in MODE .</p> <p>⇒ Click the button “Confirm” to proceed</p> <p>In case that TM checks for CCU valves are failed, see Annex D Operator note 11 and perform actions if required.</p>	To Check in Config. Table (Page 73) CCU On Mode			<p>NCR-3119: Alarms for TMs</p> <ul style="list-style-type: none"> o KM130300 o KM120300 o KM110300 <p>fails status consistency check during CCU A on</p> <p>And for TMs</p> <ul style="list-style-type: none"> o KM130301 o KM120301 o KM110301 <p>fails status consistency check</p> <p>The following is expected until TC DCT53170 is sent:</p> <ul style="list-style-type: none"> o Events 28417 CCU A monitoring discarded o Events 28418 CCU B monitoring discarded 	✓	

Test location: <i>EITEC</i>	Operator: <i>D. Madin</i>	Product-Assurance: <i>R. Goossens</i>	Date: <i>30.06.08</i>	Time: <i>17 : 22</i>
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Step-No.	IST_START-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
21	<p>Z010999MCVT003_IST_START</p> <p>Reply to the prompt: "Record CCU Temp In Background"</p> <p>⇒ Click the button "Confirm" to proceed</p>				Minimise Log file after starting	✓	
22 applicable only in launch (IST spec. 5.8.2 5.8.10 5.8.11)	<p>Z010999MCVT003_IST_START</p> <p>Reply to the prompt : "STATUS SPACECRAFT and EGSE (Power ON)"</p> <p>⇒ Click the button "Confirm" to proceed</p> <p>Reply to the next prompt: "Do you want to stop and notice each failure?"</p> <p>⇒ Choose "YES" to proceed</p>						✓

Test location: <i>ESTEC</i>	Operator <i>O. Nerkin</i>	Product-Assurance: <i>R. Goossens</i>	Date: <i>30.04.08</i>	Time <i>17:33</i>
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Step-No.	IST_START-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
23 applicable only in launch (IST spec. 5.8.2 5.8.10 5.8.11)	Z010999MCVT1533_IST_STATUS Check the Satellite status displayed and ⇒ Click the button "OK" to proceed						✓
24	Z010999MCVT003_IST_START Reply to the prompt: ACMS SCOE Configuration – ACMS Power ON ⇒ Click the button "Confirm" to proceed Execute ACMS CONFIG procedure (Page 100) in parallel to the IST_START master					✓	

Test location: <i>ESTEC</i>	Operator <i>J. Nordin</i>	Product-Assurance: <i>R. Goossens</i>	Date: <i>30.04.08</i>	Time <i>17:33</i>
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Step-No.	IST_START-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
25	Z010999MCVT003_IST_START Reply to the prompt: "SET TCT Table for Ambient Temperature" ⇨ Click the button "Confirm" to proceed					✓	
26	D102159SCVT032EnNomTCSLoops ⇨ Click the button "End TS!" to proceed					✓	
27	D102159SCVT115_CHECK_HCS_OFF ⇨ Click the button "End TS!" to proceed					✓	
28	Z010999MCVT003_IST_START Reply to the prompt: "EAT UPLOADING" ⇨ Click the button "Confirm" to proceed					✓	

Test location: <i>ESTEC</i>	Operator <i>O. Nertin</i>	Product-Assurance: <i>R. Goossens</i>	Date: <i>30.06.08</i>	Time <i>17:38</i>
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Step-No.	IST_START-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
29	<p>D102159SCVT192_GET_EAT_REPORT</p> <p>Check that every initial entries of the Event Action Table are successfully checked</p> <p>⇒ Click the button "End TS!" to proceed</p>					✓	
30	<p>D102159SCVT192_GET_EAT_REPORT</p> <p>Check that every initial entries of the Event Action Table are correctly set</p> <p>⇒ Click the button "End TS!" to proceed</p>					✓	
31	<p>D102159SCVT192_IST_UPLOAD_EAT</p> <p>⇒ Click the button "End TS!" to proceed</p>					✓	
32	<p>Z010999MCVT003_IST_START</p> <p>Ckeck that ACC is running on TM Packet history with filter on APID 512 (set on Step 1 of ACMS Configuration Procedure 7.2.4.2 Page 100) and checking packets reception.</p>					✓	

Test location: <i>ESTEC</i>	Operator <i>D. Nestin</i>	Product-Assurance: <i>R. Goossens</i>	Date: <i>30.06.08</i>	Time <i>17:52</i>
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Step-No.	IST_START-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
36 (only in launch test cases)	D102159SCVT219_GET_BSW_HEALTH_UIU ⇒ Click the button "End TS!" to proceed						/
37 (only in launch test cases)	D102159SCVT204_GET_MOT ⇒ Click the button "End TS!" to proceed						/
38 (only in launch test cases)	D102159SCVT192_GET_EAT_REPORT Check that every uploaded entries of the Event Action Table are correctly set ⇒ Click the button "End TS!" to proceed						/
39 (only in launch test cases)	D102159SCVT205_SAT_COM_TCT ⇒ Click the button "End TS!" to proceed				Expected that checks will fail as the uploaded TCT is for ambient but the checks are performed against the		/

Test location: ESTEC	Operator O.M	Product-Assurance: R. Goossens	Date: 30.4.08	Time 18 :22
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Step-No.	IST_START-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
33	<p>Z010999MCVT003_IST_START Do not perform before the completion of the procedures: - IST START SSMM and - ACMS Configuration Cannot be run in parallel with other "active" sequences or TCs send in parallel Reply to the prompt: "CDMS CONFIGURATION:" "SURVIVAL REGISTER SETTING" "(Bus [?], PCDU [?], RFDN [????], TxChain [?], TTR [?], Sep Strap [????])"</p> <p>⇒ Click the button "Confirm" to proceed</p>	To Check in Config. Table (Page 73) Bus PCDU RFDN TxCh. TTR Sep Strap				✓	
34	<p>D102159SCVT175_SET_SURV_REG ⇒ Click the button "End TS!" to proceed</p>				SPR 289 No TM return for TM check No recurrence.	✓	#PV52
35 (only in launch test cases)	<p>Z010999MCVT003_IST_START Prompt: "Check CDMS Tables" ⇒ Click the button "Confirm" to proceed</p>						

Test location: <i>ESTEC</i>	Operator: <i>O. Rortin</i>	Product Assurance: <i>R. Boossens</i>	Date: <i>30.06.08</i>	Time: <i>18</i> :
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Step-No.	IST_START-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
40 (only in launch test cases)	D102159SCVT207_SAT_COM_FCCT ⇒ Click the button "End TS!" to proceed						
41	Z010999MCVT003_IST_START Reply to the prompt: "DOWNLINK SSMM PACKET STORE and CEL A&B" ⇒ Click the button "Confirm" to proceed					✓	
42	D102159SCVT188_IST_DUMP_PKT_STORE ⇒ Click the button " End TS!" to proceed				With parameters: 0 80 1 81 2 82 3 83	✓	
43	D102159SCVT188_IST_DUMP_PKT_STORE ⇒ Click the button " End TS!" to proceed				With parameters: CEL_A CEL_B All events, warnings and alarms recorded before the dump, are re-occurring during this step	✓	

Test location: <i>ESTEC.</i>	Operator: <i>O. Martin</i>	Product-Assurance: <i>R. Goossens</i>	Date: <i>30.04.08</i>	Time: <i>18 : 28</i>
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Step-No.	IST_START-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
44	Z010999MCVT003_IST_START ⇒ Click the button "End TS!" to proceed					✓	

Test location: ESTEC	Operator O. Nerkin	Product-Assurance: R. Grossens	Date: 30.06.08	Time 18 : 28
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Doc. No: HP-2-ASED-TP-0134
Issue: 4.0
Date: 24.04.2008

File: HP-2-ASED-TP-0134_Herschel_IST_Leading_Procedure__iss_4_0_24-04-08

7.2.4.1 IST_START_SSMM Procedure

Step-No.	IST_START_SSMM-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
1	<p>Z010999MCVT005_IST_START_SSMM</p> <p>Reply to the prompt: "SSMM CONFIGURATION "</p> <p>⇒ Click the button "Confirm" to proceed</p>	<p>To Check in Config. Table (Page 73)</p> <p>SSMM</p>				✓	
2	<p>D102159SCVT186_IST_SSMM_ON</p> <p>Reply to the prompt "Do you want to continue" "with such configuration?"</p> <p>Check the SSMM configuration and then ⇒ Click the button "Continue" to proceed</p>				<p>Mass Memory config. takes about 12 minutes per bank. Therefore, the next step in IST_START procedure can be executed.</p>	✓	
3	<p>D102159SCVT186_IST_SSMM_ON</p> <p>⇒ Click the button "End TS!" to proceed</p>					✓	

Test location: <i>ESTEC</i>	Operator: <i>O. Martin</i>	Product-Assurance: <i>F. Boossens</i>	Date: <i>30.06.08</i>	Time: <i>17:54</i>
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Step-No.	IST_START_SSMM-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
4	<p>Z010999MCVT005_IST_START_SSMM</p> <p>Reply to the prompt: "OBCP UPLOADING"</p> <p>⇒ Click the button "Confirm" to proceed</p> <p>Let run in parallel the sequence D102159SCVT193_IST_UPLOAD_OBCP and continue with next step "Packet Store Definition"</p>				<p>occurrence of 2 BSW problems EvtID 30738 <i>expected when starting OBCP Management for the 1st time.</i></p>	✓	
5	<p>Z010999MCVT005_IST_START_SSMM</p> <p>Reply to the prompt: "Definition of the Packet Store"</p> <p>⇒ Click the button "Confirm" to proceed</p>					✓	
6	<p>If only 1 Bank (bank 0, 1, 2 or 3) is initialised on each SSMM D102159SCVT185_IST_PACKET_STORE_DEF</p> <p>If 3 banks (banks 0, 1 and 2) are initialised on each SSMM D102159SCVT189_IST_PACKET_STORE_DEF2</p> <p>If SSMM A banks 0, 1 and 2 and only SSMM B bank 0 are initialised D102159SCVT178_RMS_PKT_STORE_DEF</p> <p>When the requested SSMM bank are initialised ⇒ Click the button "Yes" to proceed</p>					✓	

Test location: <i>ESTEC</i>	Operator: <i>J. Nertin</i>	Product-Assurance: <i>K. Boossens</i>	Date: <i>30.06.08</i>	Time: <i>17:58</i>
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Step-No.	IST_START_SSMM-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
7	<p>If only 1 Bank is initialised on SSMM A & B D102159SCVT185_IST_PACKET_STORE_DEF If 3 banks are initialised on SSMM A & B D102159SCVT189_IST_PACKET_STORE_DEF2 If 3 banks on SSMM A and only 1 on SSMM B are initialised D102159SCVT178_RMS_PKT_STORE_DEF</p> <p>⇒ Click the button "End TS!" to proceed</p>				<p>NCR-3492 occurs: (TTRRMemCorEr_A 2 := 1)! <i>recurrence</i></p>	✓	
8	<p>Z010999MCVT005_IST_START_SSMM Reply to the prompt: "Initialise MTL Service Buffers"</p> <p>⇒ Click the button "Confirm" to proceed</p>				<p>TM(5,4) alarms expected: o Evt_MTLBufADel (ID:26914) o Evt_MTLBufBDel (ID:26915) <i>recurrence</i></p>	✓	
9	<p>D102159SCVT209_START_ON_BOARD_SCHEDULE</p> <p>⇒ Click the button "End TS!" to proceed</p>				<p>SPR 282 TM failure: too quick check <i>No recurrence</i></p>	✓	#PVS2 can be removed → SPR to be closed
10	<p>D102159SCVT193_IST_UPLOAD_OBCP</p> <p>⇒ Click the button "End TS!" to proceed</p>					✓	

Test location: <i>ESTEC</i>	Operator: <i>O. Mertin</i>	Product Assurance: <i>R. Goossens</i>	Date: <i>30.04.08</i>	Time: <i>18:10</i>
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Step-No.	IST_START_SSMM-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
11	Z010999MCVT005_IST_START_SSMM ⇒ Click the button "End TS!" to proceed					✓	

Test location: <i>ESTEC</i>	Operator <i>BMA</i>	Product Assurance: <i>R. Goossens</i>	Date: <i>30.06.08</i>	Time <i>18:16</i>
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7.2.4.2 ACMS Configuration Procedure

Step-No.	ACMS_CONFIG-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
1	Open the ACMS_H_BLOC MIM Display to verify the telemetry status updating. Configure a "Telemetry Packet History" window set with filter APID = 512					✓	
2	A102109SPVT003_ACMS_CONFIG25 At the prompt "Enter your choice", insert "1" to select "Select/Load ACMS_CONFIG Input File" ⇒ Click the button "OK" to proceed	1				✓	
3	A102109SPVT003_ACMS_CONFIG25 ⇒ Click the button "Continue" to proceed					✓	
4	A102109SPVT004_ACMS_LOADCONFIG1 At the prompt, "Enter your choice:" ⇒ Click the button "OK" to proceed	To Check in Config. Table (Page 73) ACMS Config. File			IST-ADD.	✓	

Test location: ESTER	Operator: O. Martin	Product-Assurance: R. Coessens	Date: 30.06.08	Time: 17:34
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Step-No.	ACMS_CONFIG-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
5 N/A for "Launch Clean Run"	A102109SPVT003_ACMS_CONFIG25 At the prompt "Enter your choice", insert "6" ⇒ Click the button "OK" to proceed	6				✓	
6 N/A for "Launch Clean Run"	A102109SPVT003_ACMS_CONFIG25 ⇒ Click the button "Continue" to proceed					✓	
7 N/A for "Launch Clean Run"	A102109SPVT003_ACMS_CONFIG25 Verify on AND YA001939 AMCS SCOE - AS_PSEUDO 1 of 1 the parameters YMACT939 (ACMS SCOE state) YMASE939 (Simulator stata) YMAMS939 (MILFE state) YMAUS939 (UIFE state)	executing executing executing executing			Alarms are expected for TM with APID 2018 and EVID 4 when the parameters on the left have not reached the executing stage yet.	✓	

Test location: ESTEC	Operator D. Martin	Product-Assurance: K. Coossens	Date: 30.06.08	Time 17:43
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Step-No.	ACMS_CONFIG-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
8	<p>A102109SPVT003_ACMS_CONFIG25</p> <p>At the prompt "Enter your choice", insert "4" to select "ACMS Power ON (in Pre-Sep configuration)"</p> <p>⇒ click the button "OK" to proceed</p>	4				✓	
9	<p>A102109SPVT003_ACMS_CONFIG25</p> <p>⇒ Click the button "CONTINUE" to proceed</p>					✓	
10	<p>A102109SPVT011_ACMS_ON</p> <p>During this sequence, following events are expected:</p> <ul style="list-style-type: none"> - TM(5,4) Event Report and Reconfiguration Log - TM(5,2) APID:2018 (ACMS_SCOE) indicates ACMS "TestDataWord" needs to be switched ON. A few seconds later when the corresponding TC is sent, this TM(5,2) must disappear. - Multiple other events TM(5,1), such as "Fdir Task Overrun" or "Fdir Rm Parity Error" 				<p>Expected Out of Limit of AEYYY109 (synchronisation) ACC may become INVALID for a short time</p> <p>SPR 245 NCR 2862: Out of Limit of HKA_ANTH?_Data</p> <p>SPR 334 OutOfLimit of Gyro Calib Curve in LCR</p>	✓	

Test location: <i>ESTEC</i>	Operator: <i>O. Berlin</i>	Product Assurance: <i>K. Goossens</i>	Date: <i>30.04.08</i>	Time: <i>17:46</i>
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Step-No.	ACMS_CONFIG-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
11	<p>A102109SPVT003_ACMS_CONFIG25</p> <p>At the prompt "Enter your choice", Insert "5" to select "Modify ACC SGM/RM content"</p> <p>⇒ Click the button "OK" to proceed</p>	5				✓	
12	<p>A102109SPVT003_ACMS_CONFIG25</p> <p>⇒ Click the button "Continue" to proceed</p>					✓	
13	<p>A102109SPVT003_ACMS_CONFIG25</p> <p>At the prompt "Enter your choice", Insert "20" for "Default configuration for separation"</p> <p>⇒ Click the button "OK" to proceed</p>	20			Expected Out of Limit of AEYYY109 (synchronisation) ACC may become INVALID for a short time TC PM_Reset (ACY42109) not acknowledge expected	✓	
14	<p>A102109SPVT003_ACMS_CONFIG25</p> <p>⇒ Click the button "Continue" to proceed</p>					✓	

Test location: <i>ESTEC</i>	Operator <i>O. Reulin</i>	Product Assurance: <i>R. Coossens</i>	Date: <i>30.06.08</i>	Time <i>17:53</i>
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Step-No.	ACMS_CONFIG-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
15	A102109SPVT003_ACMS_CONFIG25 After about 10 min verify that ACMS Sequences are correctly terminated and ACMS CONFIG MAIN MENU 1.0 is available.					✓	
16	A102109SPVT003_ACMS_CONFIG25 At the prompt "Enter your choice", Insert "99" to select "Return to Main Menu 1.0" ⇒ Click the button "OK" to proceed	99				✓	
17	A102109SPVT003_ACMS_CONFIG25 ⇒ Click the button "Continue" to proceed					✓	

Test location: <i>ESTEC</i>	Operator <i>O. Parkin</i>	Product-Assurance: <i>R. Coossens</i>	Date: <i>30.04.08</i>	Time <i>18:05</i>
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7.3 IST Test Case

According to the actual IST Test Case, IST_GUI will prompt with following window(see Figure 1) to execute the relevant test sequence / procedure as listed below.

Click the button "Confirm" to call the appropriate sequence displayed in the message box.

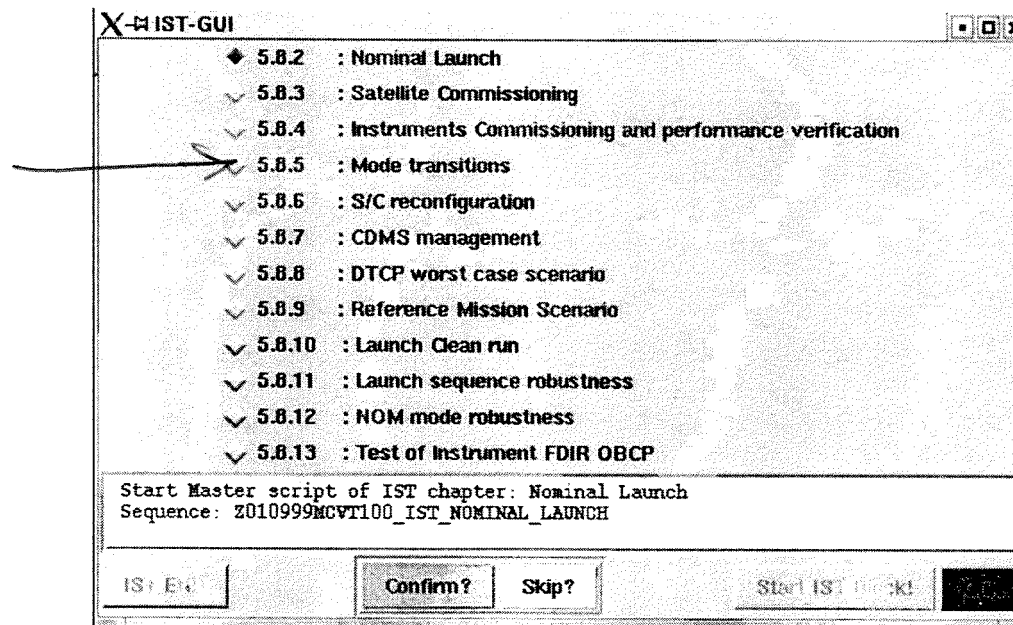


Figure 1: IST_GUI calling Master sequence, for instance "Nominal Launch"

Test location: <i>ESTEC</i>	Operator <i>OMA</i>	Product Assurance: <i>R. Goossens</i>	Date: <i>3004007</i>	Time <i>10:05</i>
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Important Note: After execution of the IST Test Case, S/C has to be switched off with the "IST END" procedure as described in chapter 7.4.

Herschel IST Test Case 'Launch Phase, Separation and Post Separation':	HP-2-ASED-TP-0185
Herschel IST Test Case 'Satellite Commissioning':	HP-2-ASED-TP-0186
Herschel IST Test Case 'ACMS Commissioning':	HP-2-ASED-TP-0187
Herschel IST Test Case 'Instruments Commissioning and Performance Verification':	HP-2-ASED-TP-0188
<u>Herschel IST Test Case 'Mode Transitions':</u>	<u>HP-2-ASED-TP-0189</u>
Herschel IST Test Case 'S/C Reconfiguration':	HP-2-ASED-TP-0190
Herschel IST Test Case 'CDMS Management': ..	HP-2-ASED-TP-0191
Herschel IST Test Case 'DTCP Worst Case Scenario': ..	HP-2-ASED-TP-0192
Herschel IST Test Case 'REFERENCE Mission Scenario':	HP-2-ASED-TP-0193
Herschel IST Test Case 'Launch Clean Run':	HP-2-ASED-TP-0194
Herschel IST Test Case 'Launch Sequence Robustness':	HP-2-ASED-TP-0195
Herschel IST Test Case 'NOM Mode Robustness':	HP-2-ASED-TP-0196
Herschel IST Test Case 'Test of Instrument FDIR OBCP'	HP-2-ASED-TP-0197

Highlight the TEST Case to be performed in the above

Test location:	Operator	Product-Assurance:	Date:	Time :
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7.4 IST END Procedure

Step-No.	IST_END-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
1.	IST_GUI ⇒ Click the button "OK" and then ⇒ Click the button "IST_END" to proceed					✓	
2.	D102159SCVT188_IST_DUMP_PKT_STORE ⇒ Click the button "Confirm" to proceed					✓	
3.	D102159SCVT188_IST_DUMP_PKT_STORE ⇒ Click the button " End TS!" to proceed				before end problem occurred with IPMOR 2BSS06		

Changed switch-off sequence followed.

Test location: <i>ESTEC</i>	Operator <i>C. Muehl</i>	Product-Assurance: <i>R. Goossens</i>	Date: <i>03 05 08</i>	Time <i>20:15</i>
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Step-No.	IST_END-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
4. Only if PACS, SPIRE or HIFI is still ON	<p>Z010999MCVT004_IST_END</p> <p>If one of the instruments is detected "ON" reply to the prompt:</p> <p style="text-align: center;">"Should the sequence"</p> <p style="text-align: center;">Z102999SCVT011_ASDGEN_PACSPWROFF_P Z102999SCVT005_ASDGEN_SPIREPWROFF_P Z102999SCVT015_ASDGEN_HIFIPWROFF_P</p> <p style="text-align: center;">"be called?"</p> <p>⇒ Click the button "YES" to proceed</p>				N/A		
5. Only if CCU A is ON	<p>Z010999MCVT004_IST_END</p> <p>If CCU is detected "ON" reply to the prompt:</p> <p>Should the sequence "K102999ECVT001_ASDGENCCU_ABPWROFF be called"</p> <p>⇒ Click the button "YES" to proceed</p>						

Test location:	Operator	Product-Assurance:	Date:	Time
				:

Step-No.	IST_END-Step-Description	Nominal Value	Tolerance	Actual Value			P	N
6. Only if RWL ON and ACMS is still in SCM	Z010999MCVT004_IST_END "Please ensure that ACMS is set in OCM mode, otherwise select the correct menu in the ACMS_CONFIG25" Perform chapter 7.4.1 then click OK							
7. Only if RWL are still spinning	Z010999MCVT004_IST_END Start the sequence A102109SPVT061_RWL_SPINDOWN? ⇒ Click the button "YES" to proceed				Out of Limits concerning RWL speed are expected during RWL spin down			
8. Only if ACMS is still ON	Z010999MCVT004_IST_END Start the sequence A102109SPVT012_ACMS_OFF ? ⇒ Click the button "YES" to proceed							

Test location:	Operator	Product-Assurance:	Date:	Time
				:

Step-No.	IST_END-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
9. Only if ACMS is still ON	<p>A102109SPVT012_ACMS_OFF</p> <p>During this sequence, following event are expected to occur:</p> <ul style="list-style-type: none"> • TM(5,2) EvtID: 33 Event Report - ACB Rx Failed • TM(5,2) EvtID: 33 Event Report - ACB Rx Failed • TM(5,4) EvtId:16426 Mode SBSM Entry • Event Report - Boot Report and Reconfiguration Log • Event Report - SDB Unhealthy • Multiple "New Tm 251004939" • Multiple "New Tm 251001939" • Multiple "New Tm 251002939" <p>This sequence needs time to be completely run, so let run in parallel with the following steps.</p>						
10. Only if SREM is still ON	<p>Z102999SCVT002_SREM_OFF</p> <p>⇒ Click the button "End TS!" to proceed</p>				SPR 35-290 NCR 3986 Wrong TM set in HPSDB		
11.	<p>D102159SCVT174_IST_REDUNDANT_CONF</p> <p>⇒ Click the button "Ens TS" to proceed</p>						

Test location:	Operator	Product-Assurance:	Date:	Time
				:

Step-No.	IST_END-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
12. Only if Survival Register set with separated flag	Z010999MCVT004_IST_END At the prompt "The survival register is set with the launch flag "separated". It must be set to "not separated" to avoid any reconfiguration during power off" ⇒ Click the button "Yes" to proceed						
13. Only if Survival Register set with separated flag	D102159SCVT175_SET_SURV_REG ⇒ Click the button "End TS!" to proceed						

Test location:	Operator	Product-Assurance:	Date:	Time :
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Step-No.	IST_END-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
14. Only if CROME wrongly set	Z010999MCVT004_IST_END Reply to the prompt "The CROME registers are not configured " " in PMA or PMB nominal " "Such configuration will block TM during Power OFF" ⇒ Click the button "YES" to proceed						
15. Only if CROME wrongly set	D102159SCVT176_WRITE_CROME ⇒ Click the button "End TS!" to proceed						
16. Only if SSMM is ON	D102159SCVT188_IST_DUMP_PKT_STORE ⇒ Click the button "End TS!" to proceed						
17. Only if SSMM is ON	D102159SCVT181_Disable_PKT_STORE ⇒ Click the button "End TS!" to proceed						

Test location:	Operator	Product-Assurance:	Date:	Time
				:

Step-No.	IST_END-Step-Description	Nominal Value	Tolerance	Actual Value			P	N
18. Only if SSMM is ON	<p>D102159SCVT187_IST_SSMM_OFF</p> <p>During this sequence, the following events are expected:</p> <ul style="list-style-type: none"> • TM(5,2) EvtId: 84 PM COCOS SPW C Reconnection • TM(5,4) EvtId: 88 MM A COCOS RT Failure • TM(5,4) EvtId: 148 MM SPW C address transfer error • TM(5,2) EvtId: 85 PM COCOS SPW C Reconnection • TM(5,4) EvtId: 89 MM A COCOS RT Failure • TM(5,4) EvtId: 149 MM SPW C address transfer error <p>⇒ Click the button "End TS!" to proceed</p>							
19. Not for Launch Cases	<p>D102159SCVT001PM_SELECT</p> <p>⇒ Click the button "End TS!" to proceed</p>							
20.	<p>Z010999MCVT002_POWER_OFF_HER_IST</p> <p>⇒ Click the button "End TS!" to proceed</p>							

Test location:	Operator	Product-Assurance:	Date:	Time :
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Step-No.	IST_END-Step-Description	Nominal Value	Tolerance	Actual Value			P	N
21 Only if TTC- SCOE is still ON	Y102989ETVT020_TTC_SCOE_OFF ⇒ Click the button "End TS!" to proceed							
21.	Z010999MCVT004_IST_END ⇒ Click the button "End TS!" to proceed							
22.	IST_GUI ⇒ Click the button "Quit" to terminate the test sequence							
23.	Update CVS Tag 1. Open a shell (xterm) 2. Execute the command update_tag Insert the name of TAG → IST_x_PART_x_TP_xxxx_x_x_END_xxx							

Test location:	Operator	Product-Assurance:	Date:	Time
				:

7.4.1 ACMS SCM to OCM transition for power off

Step-No.	IST_END-Step-Description	Nominal Value	Tolerance	Actual Value			P	N
24.	<p>A102109SPVT003_ACMS_CONFIG25</p> <p>At the prompt "Enter your choice", insert "2" to select "Transition SCM to OCM"</p> <p>⇒ Click the button "OK" to proceed, then "Continue"</p>	2						
25.	<p>A102109SPVT003_ACMS_CONFIG25</p> <p>At the prompt Menu 7 "Enter your choice", insert "5" to select "Reaction wheels spin down"</p> <p>Click the button "OK" to proceed, then "Continue"</p>	5						
26.	<p>A102109SPVT003_ACMS_CONFIG25</p> <p>At the prompt Menu 9 "Enter your choice", insert "1" to select "Switch off ACMS"</p> <p>Click the button "OK" to proceed, then "Continue"</p>	1						

Test location:	Operator	Product-Assurance:	Date:	Time
				:

Step-No.	IST_END-Step-Description	Nominal Value	Tolerance	Actual Value			P	N
27.	<p>A102109SPVT012_ACMS_OFF</p> <p>During this sequence, following event are expected to occur:</p> <ul style="list-style-type: none"> • TM(5,4) EvtId:16426 Mode SBSM Entry • Event Report - Boot Report and Reconfiguration Log • Event Report - SDB Unhealthy • TM(5,2) EvtID: 33 Event Report - ACB Rx Failed • TM(5,2) EvtID: 33 Event Report - ACB Rx Failed • Multiple "New Tm 251004939" • Multiple "New Tm 251001939"- • Multiple "New Tm 251002939"- • Multiple TM(5,1) such as "FDir Task Overrun", etc... 							
28.	<p>A102109SPVT003_ACMS_CONFIG25</p> <p>At the prompt "Enter your choice", insert "99" to select "Terminate ACMS_CONFIG25"</p> <p>Click the button "OK" to proceed, then "Confirm" and continue in parallel with the next step.</p>	99						

Test location:	Operator	Product-Assurance:	Date:	Time
				:

Step-No.	IST_END-Step-Description	Nominal Value	Tolerance	Actual Value			P	N
29.	A102109SPVT017_ACMS_CRB_BACKGROUND ⇒ Terminate the sequence.							

Test location:	Operator	Product-Assurance:	Date:	Time :
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Procedure Variation Summary

	Test Change	Curr. No.: PUS#1	Date 30-04--2008	Page 1 of 1
Test designation Mode Transitions	Test Procedure TP-1 134	Issue	Rev. -	
Test step changed 33 11/12	Reason for Change			
<p style="text-align: center;">After step 11 run the following:</p> <ul style="list-style-type: none"> • Run SCRIPT <p style="text-align: center;">A102109SPVT211_ACHS_THERMISTOR_LOG.ed</p> <p style="text-align: center;">(This will log specific ACHS related thermistor values to a file during the slc alignment tests.)</p> <p style="text-align: center;"><u>NOTE</u>: THIS SCRIPT SHOULD BE LEFT RUNNING FOR THE DURATION OF THE slc ALIGNMENT TESTS.</p> <p style="text-align: center;">Performed</p>				
Prepared by: L. Huick	Resp. Test Leader M. THELLWISSEN	Project Engineer		
PA/QA R. Coossens	Prime	Customer		

8.1 Procedure Variation Summary

	Test Change	Curr. No.: PV57F2	
		Date 30-06-08	
		Page 1 of 1	
Test designation <i>Node Transition.</i>	Test Procedure <i>TP-134</i>	Issue	Rev.
Test step changed	Reason for Change		
<p><i>7.2.6.1</i></p> <p><i>Step 6: improve explanation about expected PSW Alarm Events</i></p> <p><i>Step 9: remove SPR remarks (SPR closed).</i></p>			
Prepared by:	Resp. Test Leader	Project Engineer	
PA/QA	Prime	Customer	

Table 8.1-1: Procedure Variation Sheet

8.2 Non Conformance Report (NCR) and SPR Summary

The status of all NCRs/SPRs generated during the test shall be given in the table below:

NCR/SPR - No.	Title	Date	Open/ Closed	PA sig.

Table 8.2-2: NCR/SPR Record Sheet

8.3 Sign-off Sheet

To finalise the test campaign, all responsible personnel shall sign off the filled-in procedure in the following table:

	Date	Signature
Test Director		
Test Conductor		
PA Responsible		

Annex B: Script Hierarchy

```

===== IST START =====

>Z010999MCVT001_POWER_ON_HER_IST $PM $tcDec $batScoe
|----> Y102989EPVT007_IST_PWR_SCOE_ON $configBS
|----|----> Z010999MMXX002UNITS_CHECK
|----> async referby timeSynchronisation D102159SCVT032TIMESYNCRO
|----> D102159SCVT210_GET_ALARM_STATUS
|----> D102159SCVT210_GET_ALARM_STATUS
|----> W102584EPVT007_IST_CHECK_PCDU
|----> Z010999MMXX002UNITS_CHECK
|----> R102479ECVT009_UNITS_SELECTION
> Z010999MCVT001_POWER_ON_HER_IST $PM $tcDec $batScoe
|----> Y102989EPVT007_IST_PWR_SCOE_ON $configBS
|----|----> Z010999MMXX002UNITS_CHECK
|----> async referby timeSynchronisation D102159SCVT032TIMESYNCRO
|----> D102159SCVT210_GET_ALARM_STATUS
|----> D102159SCVT210_GET_ALARM_STATUS
|----> W102584EPVT007_IST_CHECK_PCDU
|----> Z010999MMXX002UNITS_CHECK
|----> R102479ECVT009_UNITS_SELECTION
> D102159SCVT210_GET_ALARM_STATUS
> D102159SCVT176_WRITE_CROME $papCcs 1
> D102159SCVT174_IST_REDUNDANT_CONF $bus $pcduTmTc $hps $txChain $rfdn $tmObt
$tmRate
|----> D102159SCVT104_ENCODER_SELECT $tmObt $tm_Enc_Config
> async referby istStartSSMM Z010999MCVT005_IST_START_SSMM $ssmm]
> K102999ECVT001_ASDGENCCU_ABPWRON
|----> K102999ECVT001_ASDGENCCU_MnDisDLC
|----> K102999ECVT001_ASDGENCCUA_POWERON
|----|----> Z010999MMXX002UNITS_CHECK
|----> K102999ECVT001_ASDGENCCUA_ChkEssTM
|----> K102999ECVT001_ASDGENCCUB_POWERON
|----|----> Z010999MMXX002UNITS_CHECK
|----> K102999ECVT001_ASDGENCCUB_ChkEssTM
> K102999ECVT001_ASDGENCCU_MnEBOTH2
> K102999ECVT001_ASDGENCCU_MnEBOTH1
> K102999ECVT001_ASDGENCCUA_POWERON
|----> Z010999MMXX002UNITS_CHECK
> K102999ECVT001_ASDGENCCUA_MnEnaMd2
> K102999ECVT001_ASDGENCCUA_MnEnaMd1
> K102999ECVT001_ASDGENCCUB_POWERON
|----> Z010999MMXX002UNITS_CHECK
> K102999ECVT001_ASDGENCCUB_MnEnaMd2
> K102999ECVT001_ASDGENCCUB_MnEnaMd1
> Z010999MCVT153_IST_STATUS 5.8.2.4.2
|----> ACMS_get_RM_status RMA
|----> ACMS_get_RM_status RMB
> async A102109SPVT003_ACMS_CONFIG25
|----> A102109SPVT004_ACMS_LOADCONFIG1
|----> A102109SPVT010_ACMS_SCOE_CONFIG1
|----|----> async A102109SPVT017_ACMS_CRS_BACKGROUND
|----> A102109SPVT011_ACMS_ON
|----|----> Z010999MMXX002UNITS_CHECK
|----|----> ACMS_get_RM_status RMA

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|----|----> ACMS_get_RM_status RMB
|----> A102109SPVT021_ACMS_ACC_SEPARA
> D102159SCVT032EnNomTCSLoops_ist_herschel_tcs_config
> D102159SCVT115_CHECK_HCS_OFF
> D102159SCVT192_IST_UPLOAD_EAT
|----> D102159SCVT192_GET_EAT_REPORT
|----> D102159SCVT192_GET_EAT_REPORT 1
> D102159SCVT175_SET_SURV_REG $busSM $pcduSM $rfdnSM $txChainSM $trSM $sepStsSM
> D102159SCVT219_GET_BSW_HEALTH_UIU 1
> D102159SCVT204_GET_MOT 1
> D102159SCVT192_GET_EAT_REPORT 1
> D102159SCVT205_SAT_COM_TCT 1
> D102159SCVT207_SAT_COM_FCCT 1
> D102159SCVT188_IST_DUMP_PKT_STORE 0 80 1 81 2 82 3 83
> async referby celDownlink D102159SCVT188_IST_DUMP_PKT_STORE CEL_A CEL_B

```

===== IST END =====

```

> $swOFFsequence
> A102109SPVT061_RWL_SPINDOWN
> async referby acmsOff A102109SPVT012_ACMS_OFF
> Z102999SCVT002_SREM_OFF
> D102159SCVT174_IST_REDUNDANT_CONF A A 0 0 0 0 0
|----> D102159SCVT104_ENCODER_SELECT $tmObt $tm_Enc_Config
> D102159SCVT175_SET_SURV_REG B B ABBB B B not
> D102159SCVT176_WRITE_CROME AB 1
> D102159SCVT181_DISABLE_PKT_STORE
> D102159SCVT187_IST_SSMM_OFF
> Y102989ETVT020_TTC_SCOE_OFF
|----> Y102989ECVT018_TTC_TC_OP_METHOD OFFLINE
|----|----> Y102989ETVT017_TTC_CHECK_ROUTINE
|----|----> Y102989ETVT019_TTC_SCOE_ACTIVITY
> W102584SPVT101_PCDU_TRANSITION_FDIR 5
> Z010999MCVT002_POWER_OFF
|----> D102159SCVT028SSMM_OFF
|----> D102159SCVT001PM_SELECT B
|----|----> D102159SCVT003DISTHERMALCONTROL
|----|----> Z010999MMXX002UNITS_CHECK
|----> D102159SCVT001PM_SELECT A
|----|----> D102159SCVT003DISTHERMALCONTROL
|----|----> Z010999MMXX002UNITS_CHECK
|----> R102479SMXX001_XPND_HUM_TXT
|----> Y102989EPVT002_PWR_SCOE_OFF
|----|----> Z010999MMXX003UNITS_CHECK_PWR_OFF
|----|----> Z010999MMXX003UNITS_CHECK_PWR_OFF
|----|----> Z010999MMXX003UNITS_CHECK_PWR_OFF
|----> Z010999MMXX003UNITS_CHECK_PWR_OFF

```

Annex C: Session Record

Test Description	IST MODE TRANSITIONS
Session ID	2008_04_30_16_50_herschelmu_hpas22_REALTIME_MOD-TRA-2
Start Time:	16:56 (30-04-2008)
End Time	20:15
CVS Tag for Test	
Applicable IST Specification	5.8.5
Test conductor	C. MUCH
QA Approval	D. LAMONBY

Test Description	
Session ID	
Start Time:	
End Time	
CVS Tag for Test	
Applicable IST Specification	
Test conductor	
QA Approval	

Test Description	
Session ID	
Start Time:	
End Time	
CVS Tag for Test	
Applicable IST Specification	
Test conductor	
QA Approval	

Annex D: Operation Notes

Operation Note 3

Title: ACMS SCOE does not boot	Date: 06/02/08
Observation: The ACMS SCOE does not boot. Reason: One of the STR UCE (Unit Checkout Equipment) electrical stimuli programs hangs.	
Operator Action: Until NCR / SPR is solved the following workaround is proposed (by Martijn): During powering the Power SCOE in the cleanroom: 1) Go to the STR UCE (in cleanroom) and select electrica stimuli PC on the KVM switch, press 2 time 'scroll lock' and select PC#2. 2) Kill the running application, by pressing the cross in the upper right corner. 3) Start the UCE application by double clicking the icon 'SMI', an application 'Star Mapper Analogue Chain Simulation' should start up. 4) Press 2 time 'scroll lock' and select PC#3 and repeat step 3.	

Operation Note 8

Title:	DOD Alarm	Date: 14/02/08
Observation:		
<p>During each Power on within the "IST_START" there is a check of the DOD flag. Directly after the "D102159SVT32TIMESYNCRO" the dump of the RM LOG and the DOD Flag check is performed by the "D102159SCVT210_Get_ALARM_STATUS".</p> <p>If the DOD alarm is present it has to be reset , otherwise the S/C will enter Save Mode directly after separation.</p>		
Operator Action:		
<p>For resetting the DOD alarm decrease the Vbat under the DoD threshold and then increasing the Vbat upper the DoD threshold therefore perform the following steps:</p> <p>Open a shell window -> startCMD bsvnc On the window "H-P BS SCOE" switch to local On the window "BS SCOE Config" change the Battery Voltage from 25,4 to 19 The push the button save&update On the window "BS SCOE Config" change the Battery Voltage from 19 to 25,4 The push the button save&update On the window "H-P BS SCOE" switch to remote</p> <p>Execute the script: D102159SCVT210_Get_ALARM_STATUS to dump the RM Log to check DOD Flag Check if DOD alarm is still present</p>		

Operation Note 11

Title: Failure in TM Check of CCU Valves	Date: 14/02/08
Observation: <p style="text-align: center;">If CCU Valves sensing lines are connected to CRYO SCOE instead of CCU the valves status check fails at CCU Power ON</p>	
Operator Action: <ol style="list-style-type: none"> 1) On Test conductor Console, perform "connect PFM_CRYO" 2) Thanks Telemetry Query Display (TQD) check following TMs <ul style="list-style-type: none"> - YM648958 (VLV_STATUS_V103) instead of KM269302 = "CLOSED" - YM649958 (VLV_STATUS_V106) instead of KM269303 = "CLOSED" - YM640958 (VLV_STATUS_V501) instead of KM270302 = "CLOSED" - YM641958 (VLV_STATUS_V503) instead of KM270303 = "CLOSED" - YM643 958 (VLV_STATUS_V505) instead of KM271303 = "OPEN" 3) On Test conductor Console, perform "disconnect PFM_CRYO" 	

END OF DOCUMENT

Insert actual distribution list

Attachment 5 to Section 6.1.1:

As-Run Procedure HP-2-ASED-TP-0206

as Run copy
used during "Mode transitions"
IST test case 01/05/08

Title: **Herschel Instrument Power ON-OFF and Mode Switching Procedure for Functional Testing**

CI-No:

Prepared by: S. Hamer TERMA A/S Date: 25.04.2008

Checked by: S. Idler

Product Assurance: R. Stritter *pp J. Hall* 30/4/2008

Configuration Control: W. Wietbrock

Project Management: Dr. Fricke

Project Management: D. Montet *no J. Hall* 30/4/2008

Distribution: See Distribution List (last page)

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Issue	Date	Sheet	Description of Change	Release
1	07.01.2008		Initial version	
1	21.04.2008		Revised version covering all instruments including simulated science modes. HIFI ICU only configuration	1
1	25.04.2008		Revised version HIFI "ICU only" plus HIFI Mode Transitions procedure	2



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1 Scope

1.1 Objective

This document details the Instrument (PACS, SPIRE & HIFI) procedures provided to support primarily SVM oriented IST activities. The procedures can also be used where appropriate to support other non-specific instrument tests (e.g. EMC, shipping health check). The procedures cover the following basic activities:

- Instrument (Prime & Redundant) Switch ON/OFF to/from Standby* mode
- Configuration of, and connection to, the Instrument EGSEs (I-EGSEs)
- Transition from "Standby" to a simulated** Science producing mode

* "Standby" is an artificial mode which cannot be characterised by one particular parameter for any instrument. Each instrument also uses an alternative name to indicate "Standby" mode; for PACS this is SAFE and for SPIRE it is REDY, HIFI has two standby modes Standby1 & Standby2, the primary difference between the two is whether the lasers are switched ON (2) or OFF (1).

** Simulated Science is sufficient for the needs of non-specific instrument IST activities and is representative in terms of APID allocation and bandwidth but not data content.

This document will, where necessary, evolve during the system level AIT activities in order to reflect the configuration of the instruments (completion of integration activities) and the Herschel satellite (the latter in order to handle operation of the instruments in warm, Hel and HeII conditions)

1.2 Constraints

The instrument procedures are designed to be run without the need for Instrument specific support, and for PACS, SPIRE plus HIFI ICU only without need of connection to the I-EGSEs.

For HIFI full configuration (the so called "Mode Transitions") connection to the HIFI I-EGSE is required, as is support from SRON personnel (latter TBC).

However, it is mandatory for any PACS usage that PACS OBCPs/EATs have been loaded and are enabled for the duration of the test.

HIFI and SPIRE currently do not require OBCPs/EATs to be operational; however the test itself may require this, but is not a constraint for the instruments.

1.3 Operational Flow

Chapter 7 provides the detailed step-by-step procedures for each instrument, which are summarised below:

PACS

- I-EGSE Configuration & Connection
- PACS Prime OFF to Standby (SAFE)
- PACS Prime Standby (SAFE) to OFF
- PACS Redundant OFF to Standby (SAFE)
- PACS Redundant Standby (SAFE) to OFF
- PACS Standby (SAFE) to Nominal Spectroscopy (to Standby)
- PACS Standby (SAFE) to Burst Mode (to Standby)
- I-EGSE Disconnection

SPIRE

- I-EGSE Configuration & Connection
- SPIRE Prime OFF to Standby (REDY)
- SPIRE Prime Standby (REDY) to OFF
- SPIRE Redundant OFF to Standby (REDY)
- SPIRE Redundant Standby (REDY) to OFF
- SPIRE Standby to OPS (Simulated Photometer)
- SPIRE OPS to Standby
- I-EGSE Disconnection

HIFI Full Configuration (I-EGSE Mandatory)

- I-EGSE Nominal/Redundant Configuration & Connection
- HIFI Nominal OFF to Standby1
- HIFI Nominal Standby1 to OFF
- HIFI Nominal Standby1 to PRIME (Science)
- HIFI Nominal PRIME (Science) to Standby1
- HIFI Redundant OFF to Standby1

- HIFI Redundant Standby1 to OFF
- I-EGSE Disconnection

- **HIFI ICU Configuration (without I-EGSE)**
- HIFI Nominal ICU ON
- HIFI Nominal ICU OFF
- HIFI Redundant ICU ON
- HIFI Redundant ICU OFF
- HIFI Start Simulated Science
- HIFI Stop Simulated Science

2 Documents/Drawings

This document incorporates, by dated or undated references, provisions from other publications. These normative references are cited at appropriate places in the text and publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these apply to this document only when incorporated into it by amendment or revision. For undated references, the latest edition of the publication referred to apply.

2.1 Applicable Documents

AD-1	Herschel SAT Emergency Switch Off Procedure	H-P-2-ASED-PR-071
AD-2	Procedure for setup and operation of the HIFI cooling system	HP-2-ASED-PR-125

2.2 Reference Documents

RD-1	Herschel PCDU & CDMS nominal switch on / off procedure	HP-2-ASED-PR-0070
RD-2	HIFI Switch On Procedure, Issue 1.16	SRON-G/HIFI/PR/2007-017
RD-3	PACS Switch On/Off, ref. email Helmut Feuchtgruber	17. April 2007 11:58
RD-4	SPIRE Integration System Test Debugging Procedures, Issue 1.3	SPIRE-RAL-PRC-002880
RD-5	PACS I-EGSE User Manual, Issue 1, 19-Jul-2007	PICC-ME-MN-010
RD-6	HIFI IEGSE setup procedure	SRON-U/HIFI/PR/2007-005
RD-7	SPIRE I-EGSE Set-Up, Issue 2.2	SPIRE-RAL-DOC-002841
RD-8	FIRST/PLANCK Instrument Interface Document part A	PT-IID-A-04624
RD-9	FIRST/PLANCK Instrument Interface Document part B (HIFI)	PT-IIDB/HIFI-02125
RD-10	FIRST/PLANCK Instrument Interface Document part B (PACS)	PT-IIDB/PACS-02126
RD-11	FIRST/PLANCK Instrument Interface Document part B (SPIRE)	PT-IIDB/SPIRE-02124

RD-12 LO SFT Procedure using LO Dummy, Issue 1.01

MPIfR/HIFI/PR/2006-565

RD-13 HIFI Mode Transitions Procedure, Iss 1.16

SRON-G/HIFI/PR/2007-020

2.3 Other Documents

N/A

2.4 Acronyms

See calling procedure.

3 Requirements to be verified

N/A

4 Configuration

4.1 Herschel S/C Configuration

4.1.1 *Hardware Configuration*

See relevant TRR MoM

4.1.2 *Software Configuration*

See relevant TRR MoM

4.1.3 *Test Configuration*

4.1.3.1 SVM

See relevant TRR MoM

4.1.3.2 HIFI

All warm units & FPU integrated. For this issue (1.1) Hel/Hell conditions can be supported but LOU must be warm.

If LOU is cold (i.e. for TB/TV) then this procedure must be updated according to RD2 & RD13.

4.1.3.3 PACS

All warm units and FPU is integrated and connected to the warm units. Warm or Cold Hel/Hell conditions.

4.1.3.4 SPIRE

All warm units integrated. Warm or Cold Hel/Hell conditions.

4.1.4 *Simulated Equipments*

N/A

5 Conditions

5.1 Personnel

See relevant TRR MoM

5.2 Environmental

See relevant TRR MoM

5.3 General Precautions and Safety

5.3.1 General Safety Requirements, Precautions

- For HIFI, Handling precautions according to RD-8 and RD-9 are applicable.
- For PACS, Handling precautions according to RD-8 and RD-10 are applicable.
- For SPIRE, Handling precautions according to RD-8 and RD-11 are applicable.

5.3.2 Special condition and hazards

The following Operational restrictions shall be carefully taken into account:

- In case of any failure, the activities shall be stopped until troubleshooting plan is generated and approved.

A general constraint for all instrument DPUs (or ICU in the case of HIFI), there shall be a 5 minute wait between switching off a DPU/ICU and switching it back on again.

5.3.2.1 HIFI

None when powering on/off HIFI ICU only as per sections 7.4.1 to 7.4.4.

When operating HIFI using the full configuration, ref. sections 7.3.2 to 7.3.7 the following applies:

- 1) Connection/Disconnection with the HIFI I-EGSE is required as per section 7.3.1 & 7.3.8.
- 2) The following Cryo temperature limits shall be observed when operating HIFI:

Connection of the PACS I-EGSE is not mandatory, however if MPE (PACS responsible) want to monitor the test from the I-EGSE then sections 7.1.1 & 7.1.9 apply.

5.3.2.3 SPIRE

Connection of the SPIRE I-EGSE is not mandatory, however if RAL (SPIRE responsible) want to monitor the test from the I-EGSE then sections 7.2.1 & 7.2.8 apply.

5.3.3 *ESD constraints*

See the Lead Procedure for the test concerned and the following:

- For HIFI, ESD precautions according to RD-8 and RD-9 are applicable.
- For SPIRE according to nominal ESD protection
- For PACS according to nominal ESD protection

5.3.4 Special QA Requirements

N/A

5.4 GSE

5.4.1 MGSE

N/A

5.4.2 CVSE

N/A

5.4.3 EGSE

5.4.3.1 EGSE Hardware Configuration

See TRR MoM for test concerned.

5.4.3.2 EGSE User Software

See TRR MoM for test concerned.

5.4.3.3 Grounding Configuration

N/A

5.4.3.4 Test Equipment

N/A

5.4.3.5 Data Acquisition System

N/A

5.4.4 OGSE

N/A

5.4.5 Special Equipment

N/A

6 Verification Requirements and Test Criteria

No specific requirements are verified by this procedure, it is purely acts as a supporting procedure to the main lead test procedure where the overall test criteria and verification requirements are defined.

7 Step-by-Step Procedures

7.1 PACS Instrument Procedures

7.1.1 PACS I-EGSE Configuration/Connection

The following procedure is NOT normally required for switching PACS ON or OFF.

It is only used when it is required to use the PACS I-EGSE to support the test being performed, either for monitoring of PACS specific TM on the IEGSE.

It is also required when performing PACS FDIR OBCP IST.

This procedure is independent of PACS redundancy configuration.

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	If not already on, Switch on & configure PACS I-EGSE i.a.w. RD-5					
2.	From HPCCS Test Conductor console issue command to connect to PACS I-EGSE connect HPACSEGSE	YZS28940== CONNECTED		AND: SYS_PARS		
	<i>Perform the following two steps if command parameter exchange is required between the IEGSE and HPCCS for the test concerned.</i>					

Enter Date Time:		Sign Off TD:		PA:		Test Location:	
--------------------	--	----------------	--	-----	--	----------------	--

Doc. No: HP-2-ASED-TP-0206

Issue: 1.2

Date: 25.04.08

File: HP-2-ASED-TP-0206_Issue_1r2.Doc

<i>Step-No.</i>	<i>Test-Step-Description</i>	<i>Nominal Value</i>	<i>Actual Value</i>	<i>Remarks</i>	<i>P</i>	<i>N</i>
3.	If not already running from the HPCCS test conductor console execute the test script: ALL_SubscribeParams					
4.	Verify HPCCS-IEGSE connection by sending the following test command from manual command stack (repeater value 0) and verify received OK on IEGSE: YC00X964	OK				
5.	Return to calling Procedure					

Enter Date Time:			Sign Off	TD:	PA:	Test Location:	
---------------------------	--	--	-----------------	------------	------------	-----------------------	--

Doc. No: HP-2-ASED-TP-0206

Issue: 1.2

Date: 25.04.08

7.1.2 PACS Prime OFF to Standby (SAFE)

The following will switch ON and configure PACS Prime instrument in SAFE mode in any satellite configuration (i.e. warm, or Cold Hel/HelI). HKTM packets will be generated on APIDs 1152 dec and 1154 decimal (these can be observed using TMPH with corresponding filter – note however a limited number of TMPHs should be running at any one time).

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	On HPCCS start Packet History displays for the following APIDs: 1152, 1154	OK			✓	
2.	From the HPCCS test conductor console start the test script to power PACS Prime to SAFE: Z102999SCVT010_ASDGEN_PACSPWRON_P				✓	
3.	On HPCCS when prompted: "FM PACS Switch ON in Warm or Cold conditions, FPU connected - Select NO to abort TS if not correct"	YES			✓	
4.	On HPCCS when prompted: " PACS FDIR OBCPs/EATs loaded and enabled? - If not select NO to abort TS"	YES			✓	

Enter Date Time:	1.5.08	11:10	Sign Off	TD: C. MUGH	PA: D. LAMONBY	Test Location:	ESTEC
--------------------	--------	-------	----------	-------------	----------------	----------------	-------

Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
	If in any doubt about the script being executed NO should be selected to abort the script. Before restarting consult the relevant instrument support engineer to confirm the correct script to be used for the test in question.					
	If YES is selected the test script will go on to automatically power on all PACS warm units, force boot the DPU ASW and configure the instrument to SAFE (Standby mode)				✓	
5.	If AFO mode not already selected for CDMU the script P102999SCVT905_ASDISTPACS_PWR_ON_N will prompt that AFO will be commanded next. Click OK to continue the script if the prompt appears.	OK			✓	

Enter Date Time:	11:10	1-5-08	Sign Off	TD: C. HULL	PA: D. LAMONBY	Test Location:	ETEC
--------------------	-------	--------	----------	-------------	----------------	----------------	------

Doc. No: HP-2-ASED-TP-0206

Issue: 1.2

Date: 25.04.08

File: HP-2-ASED-TP-0206_Issue_1r2.Doc

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
6.	<p>On HPCCS when all autonomous actions have been completed by the power on script P102999SCVT905_ASDISTPACS_PWR_ON_N it will prompt:</p> <p><i>"Set Bus Profile Back to Original Setting?"</i></p> <p>Select YES if it is likely that other non-PACS instrument related activities are to be performed, otherwise select NO.</p>	NO			✓	
7.	<p>If YES selected the original Bus Profile will be restored.</p> <p><i>However note that if the original Bus Profile was 0 (launch) the script will automatically leave the Bus Profile unchanged as this profile is not compatible with instruments being powered in Standby, in which case the following prompt will appear:</i></p> <p><i>"Bus Profile left unchanged, as original setting 0 (Launch)"</i></p> <p>If prompted select OK to continue</p>	OK			✓	

Enter Date Time:	11:17	Sign Off	TD: C. MUCH	PA: D. Lamontby	Test Location:	ESTEC
--------------------	-------	----------	-------------	-----------------	----------------	-------

Doc. No: HP-2-ASED-TP-0206

Issue: 1.2

Date: 25.04.08

File: HP-2-ASED-TP-0206_Issue_1r2.Doc

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
8.	If NO selected then at the prompt: "Bus Profile left unchanged" Select OK to continue	OK			✓	
9.	The script will automatically terminate	OK			✓	
10.	Verify HK TM packets are being received on APIDs 1152 & 1154	OK			✓	
11.	Either using the ANDs indicated verify the correct status of the following PACS specific TM parameters or if the IEGSE is connected request IEGSE Operator to confirm that PACS is in SAFE mode: DM_BOL_REC_PAC (PM038420) is incrementing	Incrementing ✓		AND: PA019420	✓	
12.	PACS in SAFE mode. Return to calling Procedure	OK			✓	

Enter Date Time:	01-05-08 11.32	Sign Off	TD: C. RUCK	PA: D. LAMONBY	Test Location:	ESTEC
--------------------	------------------	----------	-------------	----------------	----------------	-------

Doc. No: HP-2-ASED-TP-0206

Issue: 1.2

Date: 25.04.08

File: HP-2-ASED-TP-0206_Issue_1r2.Doc

7.1.3 PACS Prime Standby (SAFE) to OFF

The following procedure will switch PACS Prime from SAFE to OFF.

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	From the HPCCS test conductor console start the test script to power OFF PACS Prime from SAFE: Z102999SCVT011_ASDGEN_PACSPWROFF_P					
2.	On HPCCS when prompted: "FM PACS Switch OFF in Warm or Cold conditions, FPU connected - Select NO to abort TS if not correct"	YES				
	If in any doubt about the script being executed NO should be selected to abort the script. Before restarting consult the relevant instrument support engineer to confirm the correct script to be used for the test in question.					
	If YES is selected the test script will go on to automatically power off all PACS warm units.					
3.	Note: During switch off of PACS (5,2) TM event packets are expected	(5,2) events observed				

Enter Date Time:		Sign Off	TD:	PA:	Test Location:
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Date: 25.04.08

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Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
4.	On HPCCS when all autonomous actions have been completed by the power on script P102999SCVT906_ASDISTPACS_PWR_OFF_N it will prompt: <i>"Set Bus Profile Back to Original Setting?"</i>	NO				
5.	Select YES if it is likely that other non-PACS instrument related activities are to be performed. <i>However note that if the original Bus Profile was 0 (launch) the script will automatically leave the Bus Profile unchanged as this profile is not compatible with instruments being powered in Standby:</i> <i>"Bus Profile left unchanged, as original setting 0 (Launch)"</i>	OK				
6.	If NO selected then at the prompt: <i>"Bus Profile left unchanged"</i> Select OK to continue	OK				
7.	On HPCCS stop Packet History displays for the following APIDs:1152,1154	OK				

Enter Date Time:		Sign Off	TD:	PA:	Test Location:
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Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
8.	PACS OFF. Return to calling Procedure	OK				

Enter Date Time:		Sign Off	TD:	PA:	Test Location:	
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Doc. No: HP-2-ASED-TP-0206

Issue: 1.2

Date: 25.04.08

File: HP-2-ASED-TP-0206_Issue_1r2.Doc

7.1.4 PACS Redundant OFF to Standby (SAFE)

The following will switch ON and configure PACS Redundant instrument in SAFE mode in any satellite configuration (i.e. warm, or Cold: Hel/Hell). HKTM packets will be generated on APIDs 1153 dec and 1155 decimal (these can be observed using TMPH with corresponding filter – note however a limited number of TMPHs should be running at any one time).

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	On HPCCS start Packet History displays for the following APIDs:1153,1155	OK				
2.	From the HPCCS test conductor console start the test script to power PACS Redundant to SAFE: Z102999SCVT012_ASDGEN_PACSPWRON_R					
3.	On HPCCS when prompted: "FM PACS Switch ON in Warm or Cold conditions, FPU connected - Select NO to abort TS if not correct"	YES				
4.	On HPCCS when prompted: " PACS FDIR OBCPs/EATs loaded and enabled? - If not select NO to abort TS"	YES				

Enter Date Time:		Sign Off TD:	PA:	Test Location:	
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Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
	If in any doubt about the script being executed NO should be selected to abort the script. Before restarting consult the relevant instrument support engineer to confirm the correct script to be used for the test in question.					
	If YES is selected the test script will go on to automatically power on all PACS redundant warm units, force boot the DPU ASW and configure the instrument to SAFE (Standby mode).					
5.	If AFO mode not already selected for CDMU the script P102999SCVT907_ASDISTPACS_PWR_ON_R will prompt that AFO will be commanded next. Click OK to continue the script if the prompt appears.	OK				
6.	On HPCCS when all autonomous actions have been completed by the power on script P102999SCVT907_ASDISTPACS_PWR_ON_R it will prompt: <i>"Set Bus Profile Back to Original Setting?"</i>	NO				

Enter Date Time:		Sign Off	TD:	PA:	Test Location:	
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Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
7.	Select YES if it is likely that other non-PACS instrument related activities are to be performed. <i>However note that if the original Bus Profile was 0 (launch) the script will automatically leave the Bus Profile unchanged as this profile is not compatible with instruments being powered in Standby:</i> "Bus Profile left unchanged, as original setting 0 (Launch)"	OK				
8.	The script will automatically terminate					
9.	If NO selected then at the prompt: "Bus Profile left unchanged" Select OK to continue	OK				
10.	Verify HK TM packets are being received on APIDs 1153 & 1155					
11.	Either using the ANDs indicated verify the correct status of the following PACS specific TM parameters or if the IEGSE is connected request IEGSE Operator to confirm that PACS is in SAFE mode: DM_BOL_REC_PAC (PM038420) is	Incrementing		AND: PA019420		

Enter Date Time:		Sign Off TD:	PA:	Test Location:	
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Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
	incrementing					
12.	PACS in SAFE mode. Return to calling Procedure	OK				

Enter Date Time:			Sign Off	TD:	PA:	Test Location:	
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Date: 25.04.08

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7.1.5 PACS Redundant Standby (SAFE) to OFF

The following procedure will switch PACS Redundant from SAFE to OFF.

Note that during PACS switch-off, OBCPs for PACs are disabled and re-enabled at the end to avoid unwanted triggering of FDIR.

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	From the HPCCS test conductor console start the test script to power OFF PACS Redundant from SAFE: Z102999SCVT013_ASDGEN_PACSPWROFF_R					
2.	On HPCCS when prompted: "FM PACS Switch OFF in Warm or Cold conditions, FPU connected - Select NO to abort TS if not correct"	YES				
	If in any doubt about the script being executed NO should be selected to abort the script. Before restarting consult the relevant instrument support engineer to confirm the correct script to be used for the test in question.					
	If YES is selected the test script will go on to automatically power off all PACS Redundant warm units.					

Enter Date Time:		Sign Off TD:	PA:	Test Location:	
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Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
3.	Note: During switch off of PACS (5,2) TM event packets are expected	(5,2) events observed				
4.	On HPCCS when all autonomous actions have been completed by the power on script P102999SCVT908_ASDISTPACS_PWR_OFF_R it will prompt: "Set Bus Profile Back to Original Setting?"	NO				
5.	Select YES if it is likely that other non-PACS instrument related activities are to be performed. <i>However note that if the original Bus Profile was 0 (launch) the script will automatically leave the Bus Profile unchanged as this profile is not compatible with instruments being powered in Standby:</i> "Bus Profile left unchanged, as original setting 0 (Launch)"	OK				
6.	If NO selected then at the prompt: "Bus Profile left unchanged" Select OK to continue	OK				

Enter Date Time:		Sign Off TD:		PA:		Test Location:	
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Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
7.	On HPCCS stop Packet History displays for the following APIDs:1153,1155	OK				
8.	PACS OFF. Return to calling Procedure	OK				

Enter Date Time:			Sign Off	TD:	PA:	Test Location:	
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7.1.6 PACS Standby (SAFE) to Nominal Spectroscopy (to Standby)

Running the following procedure will configure PACS from SAFE to Simulated Nominal Spectroscopy for a period of 14400 seconds. The test script will autonomously return PACS to SAFE after the allotted time.

Notes:

- 1) HPCCS does not acquire the science packets in SCOS but archives them into TMDUMP files instead. However, it will route the packets to the IEGSE if the link is enabled.
- 2) If PACS is switched off autonomously the script will remain running in the background, in which case it can be terminated manually.
- 3) If it is required to stop science data production before the allotted duration the script can be terminated manually and the SAFE mode procedure executed as per section 7.1.8.

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	From the HPCCS test conductor console start the test script to put PACS in simulated Nominal Spectroscopy from SAFE: P102999SCVT904_ASDGENPACS_NomSpect				✓	

Enter Date Time:	1.5.08	12:38	Sign Off	TD: C. RUCH	PA: D. Lemanby	Test Location:	ESTEC
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⊗

Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
2.	PACS in Simulated Nominal Spectroscopy for 60 mins. ! sequence does not inform the operator when PACS is in Science Mode			If it is required to return PACS to SAFE before the script completes it is possible to abort the script and then perform section 7.1.8.		
3.	Return to or synchronise with calling Procedure					

Note this TS changes SCBP to PACS Prime ✓

choose yes or no ⇒ yes

[wording is misleading]

Enter Date	Time: 15.08	12:45	Sign Off	TD:	PA:	Test Location:	
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Doc. No: HP-2-ASED-TP-0206

Issue: 1.2

Date: 25.04.08

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7.1.7 PACS Standby (SAFE) to Burst Mode (to Standby)

Running the following procedure will configure PACS from SAFE to Simulated Burst mode for a period of 60 mins. The test script will autonomously return PACS to SAFE after the allotted time.

Notes:

- 1) HPCCS does not acquire the science packets in SCOS but archives them into TMDUMP files instead. However, it will route the packets to the IEGSE if the link is enabled.
- 2) If PACS is switched off autonomously the script will remain running in the background, in which case it can be terminated manually.
- 3) If it is required to stop science data production before the allotted duration the script can be terminated manually and the SAFE mode procedure executed as per section 7.1.8.

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	From the HPCCS test conductor console start the test script to put PACS in simulated Nominal Spectroscopy from SAFE: P102999SCVT913_ASDGENPACS_BurstMode					

Enter Date Time:		Sign Off	TD:	PA:	Test Location:
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Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
2.	PACS in Simulated Burst mode for 60 mins.			If it is required to return PACS to SAFE before the script completes it is possible to abort the script and then perform section 7.1.8.		
3.	Return to or synchronise with calling Procedure					

Enter Date Time:			Sign Off	TD:	PA:	Test Location:	
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Issue: 1.2

Date: 25.04.08

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7.1.8 PACS to Standby (SAFE)

Running the following procedure will configure PACS to SAFE from Simulated Burst or Science mode.

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	From the HPCCS test conductor console start the test script to put PACS into SAFE (Standby) mode from either simulated Burst or Science mode: <p style="text-align: center;">PACS_SAFE_Mode</p>			Ensure that PACS Prime Bus Profile is still selected		
2.	Return to or synchronise with calling Procedure					

Enter Date Time:		Sign Off	TD:	PA:	Test Location:
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7.1.9 PACS I-EGSE Disconnection

This procedure is only used if the complementary connection procedure has been performed previously. For most IST activities envisaged it is not required.

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	From HPCCS Test Conductor console issue command to disconnect PACS I-EGSE disconnect HPACSEGSE	DISCONNECTED		AND: SYS_PARS		
2.	If no longer required for other instrument activities, from the HPCCS test conductor console terminate the test script: ALL_SubscribeParams					
3.	Return to calling Procedure					

Enter Date Time:			Sign Off	TD:	PA:	Test Location:	
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7.2 SPIRE Instrument Procedures

7.2.1 SPIRE I-EGSE Configuration/Connection

The following procedure is NOT normally required for switching SPIRE ON or OFF.

It is only used when it is required to use the SPIRE I-EGSE to support the test being performed, either for monitoring of SPIRE specific TM on the IEGSE.

This procedure is independent of SPIRE redundancy configuration.

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	If not already on, Switch on & configure SPIRE I-EGSE i.a.w. RD-7					
2.	From HPCCS Test Conductor console issue command to connect to SPIRE I-EGSE connect HSPIREEGSE	YZS29940= CONNECTED		AND SYS_PARS		
	<i>Perform the following two steps if command parameter exchange is required between the IEGSE and HPCCS for the test concerned.</i>					

Enter Date Time:			Sign Off	TD:	PA:	Test Location:	
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Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
3.	If not already running from the HPCCS test conductor console execute the test script: ALL_SubscribeParams					
4.	Verify HPCCS-IEGSE connection by sending the following test command from manual command stack (repeater value 0) and verify received OK on IEGSE: YC00X966	OK				
5.	Return to calling Procedure					

Enter Date Time:		Sign Off	TD:	PA:	Test Location:	
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7.2.2 SPIRE Prime OFF to Standby (REDY)

The following will switch ON and configure SPIRE Prime instrument in REDY (Standby) mode. HKTM packets will be generated on APIDs 1280 dec and 1282 decimal (these can be observed using TMPH with corresponding filter – note however a limited number of TMPHs should be running at one time).

During power on of SPIRE a number of soft/hard OOLs are reported due to the sequential switch on of the units. This is expected and will clear when SPIRE is in REDY mode. When in REDY mode one parameter remains OOL (soft) namely SMD2V505 this is also expected.

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	On HPCCS start Packet History displays for the following APIDs:1280,1282	OK			✓	
2.	From the HPCCS test conductor console start the test script to power SPIRE Prime to REDY: Z102999SCVT004_ASDGEN_SPIREPWRON_P				✓	
3.	On HPCCS when prompted: "SPIRE Switch ON for IST activities in any conditions - Select NO to abort TS if not correct"	YES			✓	

Enter Date	Time:	01-05-08	10:46	Sign Off	TD: C. RUCH	PA: D. LAMOURY	Test Location:	ESTEC
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Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
4.	If in any doubt about the script being executed NO should be selected to abort the script. Before restarting consult the relevant instrument support engineer to confirm the correct script to be used for the test in question.				✓	
5.	If YES is selected the test script will go on to automatically power on all SPIRE warm units, force boot the DPU ASW and configure the instrument to REDY (Standby mode).				✓	
6.	On HPCCS when all autonomous actions have been completed by the power on script S102999SCVT017_ASDGENSPIR_PWR_ON_P it will prompt: "Set Bus Profile Back to Original Setting?"	<u>NO</u>			✓	

Enter Date Time:	1.5.08	11:02	Sign Off	TD: C. RUCH	PA: D. LAMONBY	Test Location:	ESTEC
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Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
7.	Select YES if it is likely that other non-SPIRE instrument related activities are to be performed. <i>However note that if the original Bus Profile was 0 (launch) the script will automatically leave the Bus Profile unchanged as this profile is not compatible with instruments being powered in Standby:</i> "Bus Profile left unchanged, as original setting 0 (Launch)"	OK				
8.	If NO selected then at the prompt: "Bus Profile left unchanged" Select OK to continue	OK				
9.	Verify HK TM packets are being received on APIDs 1280 & 1282				✓	
10.	Either using the ANDs indicated verify the correct status of the following SPIRE specific TM parameters or if the IEGSE is connected request IEGSE Operator to confirm that: THSK (SM00T500) parameter refreshing @ 0.25 Hz	OK		AND: SA_1_559	✓	

Enter Date Time:	1-5-08	11:04	Sign Off	TD: C. Uuy	PA: D. LAMOUR	Test Location:	ESTEC
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Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
	TM1N and TM2N parameters are incrementing as indicated: TM1N (SMT0N500) by 2 every 4 secs ✓ TM2N (SMT1N500) by 1 every 4 secs ✓ MODE parameter is set to "REDY" mode (RAW ✓ value 0x0200)	OK			✓	
11.	SPIRE powered and in REDY mode Return to calling Procedure				✓	

Enter Date	Time: 15.08	11:07	Sign Off	TD: C. King	PA: D. Gandy	Test Location: ESTEC
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Issue: 1.2

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7.2.3 SPIRE Prime Standby (REDY) to OFF

The following procedure will switch SPIRE Prime from REDY to OFF.

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	From the HPCCS test conductor console start the test script to power OFF SPIRE Prime from REDY: Z102999SCVT005_ASDGEN_SPIREPWROFF_P	OK				
2.	On HPCCS when prompted: "SPIRE Switch OFF for IST activities in any conditions - Select NO to abort TS if not correct"	YES				
3.	If in any doubt about the script being executed NO should be selected to abort the script. Before restarting consult the relevant instrument support engineer to confirm the correct script to be used for the test in question.					
4.	If YES is selected the test script will go on to automatically power off all SPIRE warm units.					

Enter Date Time:		Sign Off	TD:	PA:	Test Location:
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Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
5.	<p>During Switch OFF of SPIRE the following (5,1) and (5,4) event messages on APID 1280 are expected and do not indicate a problem:</p> <p>a) EVID 1313 No_MCU_Response_Error b) EVID 21773 ALARM_LSMCU_DEAD</p>					
6.	<p>On HPCCS when all autonomous actions have been completed by the power on script S102999SCVT019_ASDGENSPIR_PWR_OFF_P it will prompt:</p> <p><i>"Set Bus Profile Back to Original Setting?"</i></p>	NO				
7.	<p>Select YES if it is likely that other non-SPIRE instrument related activities are to be performed.</p> <p><i>However note that if the original Bus Profile was 0 (launch) the script will automatically leave the Bus Profile unchanged as this profile is not compatible with instruments being powered in Standby:</i></p> <p><i>"Bus Profile left unchanged, as original setting 0 (Launch)"</i></p>	OK				

Enter Date Time:		Sign Off	TD:	PA:	Test Location:	
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Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
8.	If NO selected then at the prompt: "Bus Profile left unchanged" Select OK to continue	OK				
9.	On HPCCS stop Packet History displays for the following APIDs:1280,1282	OK				
10.	SPIRE OFF. Return to calling Procedure					

Enter Date Time:		Sign Off	TD:	PA:	Test Location:	
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7.2.4 SPIRE Redundant OFF to Standby (REDY)

The following will switch ON and configure SPIRE Redundant instrument in REDY (Standby) mode. HKTm packets will be generated on APIDs 1281 dec and 1283 decimal (these can be observed using TMPH with corresponding filter – note however a limited number of TMPHs should be running at one time).

During power on of SPIRE a number of soft/hard OOLs are reported due to the sequential switch on of the units. This is expected and will clear when SPIRE is in REDY mode. When in REDY mode one parameter remains OOL (soft) namely SMD2V505 this is also expected.

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	On HPCCS start Packet History displays for the following APIDs:1281,1283	OK				
2.	From the HPCCS test conductor console start the test script to power SPIRE Prime to REDY: Z102999SCVT006_ASDGEN_SPIREPWRON_R					
3.	On HPCCS when prompted: "SPIRE Switch ON for IST activities in any conditions - Select NO to abort TS if not correct"	YES				

Enter Date Time:		Sign Off	TD:	PA:	Test Location:
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Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
4.	If in any doubt about the script being executed NO should be selected to abort the script. Before restarting consult the relevant instrument support engineer to confirm the correct script to be used for the test in question.					
5.	If YES is selected the test script will go on to automatically power on all SPIRE warm units, force boot the DPU ASW and configure the instrument to REDY (Standby mode).					
6.	On HPCCS when all autonomous actions have been completed by the power on script S102999SCVT018_ASDGENSPIR_PWR_ON_R it will prompt: <i>"Set Bus Profile Back to Original Setting?"</i>	NO				

Enter Date Time:		Sign Off	TD:	PA:	Test Location:
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Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
7.	Select YES if it is likely that other non-SPIRE instrument related activities are to be performed. <i>However note that if the original Bus Profile was 0 (launch) the script will automatically leave the Bus Profile unchanged as this profile is not compatible with instruments being powered in Standby:</i> "Bus Profile left unchanged, as original setting 0 (Launch)"	OK				
8.	If NO selected then at the prompt: "Bus Profile left unchanged" Select OK to continue	OK				
9.	Verify HK TM packets are being received on APIDs 1281 & 1283					
10.	Either using the ANDs indicated verify the correct status of the following SPIRE specific TM parameters or if the IEGSE is connected request IEGSE Operator to confirm that: THSK (SM00T500) parameter refreshing @ 0.25 Hz	OK		AND: SA_1_559		

Enter Date Time:		Sign Off	TD:	PA:	Test Location:	
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Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
	TM1N and TM2N parameters are incrementing as indicated: TM1N (SMT0N500) by 2 every 4 secs TM2N (SMT1N500) by 1 every 4 secs MODE parameter is set to "REDY" mode (RAW value 0x0200)	OK SM00M500 = 0x0200 (REDY)				
11.	SPIRE powered and in REDY mode Return to calling Procedure					

Enter Date Time:		Sign Off	TD:	PA:	Test Location:
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Doc. No: HP-2-ASED-TP-0206

Issue: 1.2

Date: 25.04.08

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7.2.5 SPIRE Redundant Standby (REDY) to OFF

The following procedure will switch SPIRE Redundant from REDY to OFF.

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	From the HPCCS test conductor console start the test script to power OFF PACS Redundant from REDY: Z102999SCVT007_ASDGEN_SPIREPWROFF_R	OK				
2.	On HPCCS when prompted: "SPIRE Switch OFF for IST activities in any conditions - Select NO to abort TS if not correct"	YES				
	If in any doubt about the script being executed NO should be selected to abort the script. Before restarting consult the relevant instrument support engineer to confirm the correct script to be used for the test in question.					
3.	If YES is selected the test script will go on to automatically power off all SPIRE warm units.					

Enter Date Time:		Sign Off	TD:	PA:	Test Location:
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Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
4.	During Switch OFF of SPIRE the following (5,1) and (5,4) event messages on APID 1281 are expected and do not indicate a problem: c) EVID 1313 No_MCU_Response_Error d) EVID 21773 ALARM_LSMCU_DEAD					
5.	On HPCCS when all autonomous actions have been completed by the power on script S102999SCVT020_ASDGENSPIR_PWR_OFF_R it will prompt: <i>"Set Bus Profile Back to Original Setting?"</i>	NO				
6.	Select YES if it is likely that other non-SPIRE instrument related activities are to be performed. <i>However note that if the original Bus Profile was 0 (launch) the script will automatically leave the Bus Profile unchanged as this profile is not compatible with instruments being powered in Standby:</i> <i>"Bus Profile left unchanged, as original setting 0 (Launch)"</i>	OK				

Enter Date Time:		Sign Off TD:		PA:		Test Location:	
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Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
7.	If NO selected then at the prompt: "Bus Profile left unchanged" Select OK to continue	OK				
8.	On HPCCS stop Packet History displays for the following APIDs:1281,1283	OK				
9.	SPIRE OFF. Return to calling Procedure					

Enter Date Time:			Sign Off	TD:	PA:	Test Location:	
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7.2.6 SPIRE Standby (REDY) to Simulated Science (OPS)

Running the following procedure will configure SPIRE from REDY to Simulated Simulated PhotometerScience (OPS) mode.

Note HPCCS does not acquire the science packets in SCOS but archives them into TMDUMP files instead. However, it will route the packets to the IEGSE if the link is enabled.

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	From the HPCCS test conductor console start the test script to put SPIRE in simulated science from REDY: Z102999SCVT008_ASDGEN_SPIRESTBY2OPS					
2.	On HPCCS when prompted: "Command SPIRE from REDY to OPS mode in any conditions - Select NO to abort TS if not correct" Select YES	YES				

Enter Date Time:		Sign Off	TD:	PA:	Test Location:
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Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
3.	On HPCCS when prompted: "Bus profile left as SPIRE PRIME while in OPS mode - OK to continue" Select OK	OK				
4.	Return to or synchronise with calling Procedure	OK				

Enter Date Time:			Sign Off	TD:	PA:	Test Location:	
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7.2.7 SPIRE Simulated Photometer Science (OPS) to Standby (REDY)

Running the following procedure will return SPIRE to REDY (Standy) from Simulated Simulated Photometer Science (Ops) mode.

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	From the HPCCS test conductor console start the test script to put SPIRE in REDY from simulated Science: Z102999SCVT009_ASDGEN_SPIREOPS2STBY					
2.	On HPCCS when prompted: "Command SPIRE from OPS to REDY mode in any conditions - Select NO to abort TS if not correct" Select YES	YES				
3.	On HPCCS when prompted: "Bus profile left as SPIRE PRIME, change manually after if required - OK to continue" Select OK	OK				

Enter Date Time:		Sign Off	TD:	PA:	Test Location:	
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<i>Step- No.</i>	<i>Test-Step-Description</i>	<i>Nominal Value</i>	<i>Actual Value</i>	<i>Remarks</i>	<i>P</i>	<i>N</i>
4.	Return to or synchronise with calling Procedure	OK				

Enter Date Time:			Sign Off	TD:	PA:	Test Location:	
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7.2.8 SPIRE I-EGSE Disconnection

This procedure is only used if the complementary connection procedure has been performed previously. For most IST activities envisaged it is not required.

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	From HPCCS Test Conductor console issue command to disconnect PACS I-EGSE disconnect HSPIREEGSE	DISCONNECTED		AND: SYS_PARS		
2.	If no longer required for other instrument activities, from the HPCCS test conductor console terminate the test script: ALL_SubscribeParams					
3.	Return to calling Procedure					

Enter Date Time:			Sign Off	TD:	PA:	Test Location:	
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7.3 HIFI Instrument Full Configuration Procedures

7.3.1 HIFI I-EGSE Configuration/Connection

This procedure is independent of HIFI redundancy configuration apart from I-EGSE configuration in step 1.

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	<p>If not already on, Switch on & configure HIFI I-EGSE i.a.w. RD-6.</p> <p>If switching on Nominal units then confirm I-EGESE configured for nominal and FPU cold and LOU warm without attenuators</p> <p>If switching on Redunant units then confirm I-EGESE configured for redundant and FPU cold and LOU warm without attenuators</p>	<p>OK</p> <p>Nominal/Redundant configuration</p>				
2.	<p>From HPCCS Test Conductor console issue command to connect to HIFI I-EGSE</p> <p style="text-align: center;">connect HHIFIEGSE</p>	<p>YZS27940 = CONNECTED</p>		<p>AND SYS_PARS</p>		
	<p><i>Perform the following two steps if command parameter exchange is required between the IEGSE and HPCCS for the test concerned.</i></p>					

Enter Date Time:			Sign Off TD:	PA:	Test Location:
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Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
3.	If not already running from the HPCCS test conductor console execute the test script: ALL_SubscribeParams	OK			✓	
4.	Verify HPCCS-IEGSE connection by sending the following test command from manual command stack (repeater value 0) and verify received OK on IEGSE: YC00X962	OK			✓	
5.	Patch HIFI synthetic parameters for warm conditions by executing the following scripts: HIFIST_ASED_PatchPtvChecksum HIFIST_ASED_PatchTempLimits <i>Note these scripts replace HIFIST_CCS_conf_ptv_checksum_warm due to NCR-3652</i>	OK			✓ ✓	
6.	Return to calling Procedure				✓	

Enter Date Time:	1.5.08	9:27	Sign Off	TD: C. ROU	PA: D. GAMBAY	Test Location:	ESTEC
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7.3.2 HIFI Nominal OFF to Standby1

The following will switch ON and configure HIFI Nominal instrument in Standby1 mode. HKTm packets will be generated on APIDs 1024 dec and 1026 decimal (these can be observed using TMPH with corresponding filter – note however a limited number of TMPHs should be running at one time).

During power on of HIFI a number of soft/hard OOLs are reported due to the sequential switch on of the units. Some of these are to be expected when in Hel conditions and the others are expected because the unit is typically cold at switch ON.

Parameters OOL when in Hel:

- HM248191 – HF_AP_2K_IF_CT
- HM243191 – HF_APR_SCCS_CT
- HM244191 – HF_APR_S10K_CT
- HM250191 – HF_AP_4K_END_CT

Parameters OOL expected to come back in limits when units warmed up:

- HM187192 – HRV_ACS_1_T
- HM188192 – HRV_AVS_2_T
- HM062192 – HRH_ACS_1_T
- HM063192 – HRH_AVS_2_T

Parameter OOL until HIFI powered in Standby1

- HD247194 – HL_ptv_checksum
- HM258194 – HL_MODE_S
- HM259194 – HL_error_word_S

Enter Date Time:		Sign Off	TD:	PA:	Test Location:	
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Procedure

Herschel

Some additional parameters may exhibit OOL during the test:

Parameter OOL expected during test but which should be monitored for duration of test (should be kept below 30degC to avoid HIGH-HIGHs being reported):

HM062193 – HWV_Laser_T

HM023193 – HWH_Laser_T

Parameter OOL expected during test but which need not be monitored:

HM022193 – HWH_CCD_T


HM061193 – HWV_CCD_T

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	On HPCCS start Packet History displays for the following APIDs:1024,1026	OK				
2.	From the HPCCS test conductor console start the test script: Z102999SCVT014_ASDGEN_HIFIPWRON_P	OK		ANDs HA000289 HA004289	✓	
3.	On HPCCS when prompted: "FM HIFI Switch ON for IST or SFT in Hel/Hell conditions with warm LOU - Select NO to abort TS if not correct"	YES —			✓	

PVS#5
(see next page)
→

Enter Date Time:	15.08	9:29	Sign Off	TD: C. RUIH	PA: D. LAMONBY	Test Location:	ESTEC
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Procedure Variation Summary

Test Change		Curr. No.: 5
		Date 01-05-2008
		Page 1 of
Test designation MODE TRANSITIONS	Test Procedure TP-189/TP 206	Issue 2
Test step changed AFTER STEPS	Reason for Change INSERT ADDITIONAL STEP	
<p style="margin: 0;">- USING TP 206 - THE FOLLOWING CHILD SEQUENCE SCRIPT FILE WAS HALTED AND TERMINATED : HIF1ST_NOM_STARTUP_LCU_TABLE_LOAD_WARM</p> <p style="margin: 0;">The command was then manually re-run.</p>		
Prepared by: D. LANDRIS 7	Resp. Test Leader  Prine	Project Engineer
PA/DA D. JAMONBY 7		Customer

Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
	If in any doubt about the script being executed NO should be selected to abort the script when prompted in the next step. Before restarting consult the relevant instrument support engineer to confirm the correct script to be used for the test in question.					
	If YES is selected the test script will go on to automatically power on all HIFI warm units, force boot the DPU ASW and configure the instrument to Standby. NB: In principle the HIFI instrument support responsible shall be on hand to observe the status of HIFI. So he should be contacted before the next test step.					
4.	At prompt to record OBS_ID_per_hk during subsequent table readback commanding (which starts when OK is pressed); record value of HM003190 (typical reading = 9000xxxx hex), Note: at start & end value is 90000000 hex "Select OK to continue" Select OK	OK	OK.		✓	

Enter Date Time:	1-5-08	9:38	Sign Off	TD: C. MUIH	PA: D. GAMBAY	Test Location:	ESTEC
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Doc. No: HP-2-ASED-TP-0206

Issue: 1.2

Date: 25.04.08

File: HP-2-ASED-TP-0206_Issue_1/2.Doc

Procedure Variation Summary

Test Change		Curr. No.: 6	Date 01-05-2008	
		Page 1	of	
Test designation MODE TRANSITIONS	Test Procedure TP-189/TP 206	Issue 2	Rev.	
Test step changed 6	Reason for Change INSERT ADDITIONAL COMMENTS			
<p>— USING TP 206 —</p> <p>Insert the following additional comments into Test Step 6 after the sentence - "retrieved in the previous step." "NB. <OBSID> must be decimal value, NOT Hexadecimal"</p>				
Prepared by: D. JAMONBY	Resp. Test Leader  Prime	Project Engineer		
PA/QA D. JAMONBY	Customer			

PVS #6
NB <OBSID>
must be
decimal
value not
Hexadecimal
(see next page)
7

Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
5.	Value of OBS_ID during table read commanding: HM003190		9000 3FDC 2415935452	AND: HA000289 Hex Dec	✓	
6.	Request I-EGSE operator to run the command 'verifyreadback <OBSID>' from a terminal window (opened from the terminal icon " >_" at bottom left of HIFIEGSE workstation screen) using the <OBSID> retrieved in the previous step. If the word PASS does not appear on the screen at the end of the verifyreadback, this is a nogo on this test procedure. If OK respond to prompt accordingly, otherwise contact SRON to investigate and resolve before continuing.	OK		pass	✓	
7.	On HPCCS when all autonomous actions have been completed by the power on script H102999SCVT015_ASDISTHIFI_PWR_ON_P it will prompt: "Set Bus Profile Back to Original Setting?"	NO			✓	

Enter Date Time:	01-05-08	10:10	Sign Off	TD: C. MUCH	PA: D. LAMONBY	Test Location:	ESTEC
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Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
8.	<p>Select YES if it is likely that other non-HIFI instrument related activities are to be performed.</p> <p><i>However note that if the original Bus Profile was 0 (launch) the script will automatically leave the Bus Profile unchanged as this profile is not compatible with instruments being powered in Standby:</i></p> <p>"Bus Profile left unchanged, as original setting 0 (Launch)"</p> <p>Select OK to continue</p>	OK			✓	
9.	<p>If NO selected then at the prompt:</p> <p>"Bus Profile left unchanged"</p> <p>Select OK to continue</p>	OK			✓	
10.	<p>Verify HK TM packets are being received on APIDs 1024 & 1026</p>	OK				
11.	<p>Start Active Cooling of HIFI Panel i.a.w. AD-2</p>	OK		10:40	✓	

Enter Date Time:	1.5.08	10:44	Sign Off	TD: CRON	PA: D. LAMONBY	Test Location:	ESTEC
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Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
12.	Using TM Plot application on CCS start monitoring the temperature of the WBS lasers; parameters: HM062193 (HWV_Laser_T) & HM023193 (HWH_Laser_T). See Section 5.3.2.1 for details of this activity.	OK			✓	
13.	HIFI Nominal powered and in Standby1 mode Return to calling procedure	OK				

Enter Date Time:	1.5.08	10:50	Sign Off	TD: C. AUCH	PA: D. Lamonty	Test Location:	ESTEC
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7.3.3 HIFI Nominal Standby1 to OFF

The following procedure will switch HIFI Nominal from Standby1 to OFF.

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	Stop Active Cooling of HIFI Panel i.a.w. AD-2	OK				
2.	From the HPCCS test conductor console start the test script: Z102999SCVT015_ASDGEN_HIFIPWROFF_P	OK				
3.	On HPCCS when prompted: "FM HIFI Switch OFF for IST or SFT in Hel/Hell conditions with warm LOU - Select NO to abort TS if not correct"	YES				
	If in any doubt about the script being executed NO should be selected to abort the script. Before restarting consult the relevant instrument support engineer to confirm the correct script to be used for the test in question.					
	If YES is selected the test script will go on to automatically power off all HIFI warm units.					

Enter Date Time:		Sign Off TD:	PA:	Test Location:
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Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
4.	On HPCCS when all autonomous actions have been completed by the power on script H102999SCVT016_ASDISTHIFI_PWR_OFF_P it will prompt: <i>"Set Bus Profile Back to Original Setting?"</i>	NO				
5.	Select YES if it is likely that other non-HIFI instrument related activities are to be performed. <i>However note that if the original Bus Profile was 0 (launch) the script will automatically leave the Bus Profile unchanged as this profile is not compatible with instruments being powered in Standby:</i> <i>"Bus Profile left unchanged, as original setting 0 (Launch)"</i>	OK				
6.	If NO selected then at the prompt: <i>"Bus Profile left unchanged"</i> Select OK to continue	OK				

Enter Date Time:		Sign Off	TD:	PA:	Test Location:	
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Issue: 1.2

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Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
7.	On HPCCS stop Packet History displays for the following APIDs:1024,1026	OK				
8.	HIFI OFF Return to calling Procedure	OK				

Enter Date Time:			Sign Off	TD:	PA:	Test Location:	
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7.3.4 HIFI Redundant OFF to Standby1

The following will switch ON and configure HIFI Redundant instrument in Standby1 mode (Lasers OFF). HKTM packets will be generated on APIDs 1025 dec and 1027 decimal (these can be observed using TMPH with corresponding filter – note however a limited number of TMPHs should be running at one time).

During power on of HIFI a number of soft/hard OOLs are reported due to the sequential switch on of the units. Some of these are to be expected when in Hel conditions and the others are expected because the unit is typically cold at switch ON:

Parameters OOL when in Hel:

- HM248191 – HF_AP_2K_IF_CT
- HM243191 – HF_APR_SCCS_CT
- HM244191 – HF_APR_S10K_CT
- HM250191 – HF_AP_4K_END_CT

Parameters OOL expected to come back in limits when units warmed up:

- HM187192 – HRV_ACS_1_T
- HM188192 – HRV_AVS_2_T
- HM062192 – HRH_ACS_1_T
- HM063192 – HRH_AVS_2_T

Parameters OOL until HIFI powered in Standby1

- HD247194 – HL_ptv_checksum
- HM258194 – HL_MODE_S
- HM259194 – HL_error_word_S

Enter Date Time:			Sign Off	TD:	PA:	Test Location:	
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Some additional parameters may exhibit OOL during the test:

Parameters OOL expected during test but which should be monitored for duration of test (should be kept below 30degC to avoid HIGH-HIGHS being reported):

HM062193 – HWV_Laser_T

HM023193 – HWH_Laser_T

Parameter OOL expected during test but which need not be monitored:

HM022193 – HWH_CCD_T

HM061193 – HWV_CCD_T

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	On HPCCS start Packet History displays for the following APIDs:1025,1027	OK				
2.	From the HPCCS test conductor console start the test script: Z102999SCVT016_ASDGEN_HIFIPWRON_R	OK		ANDs HA000289 HA004289		
	If in any doubt about the script being executed NO should be selected to abort the script when prompted in the next step. Before restarting consult the relevant instrument support engineer to confirm the correct script to be used for the test in question.					

Enter Date Time:			Sign Off TD:	PA:	Test Location:	
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Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
3.	On HPCCS when prompted: "FM HIFI Switch ON for IST or SFT in Hel/Hell conditions with warm LOU - Select NO to abort TS if not correct"	YES				
	If YES is selected the test script will go on to automatically power on all HIFI warm units, force boot the DPU ASW and configure the instrument to Standby. NB: In principle the HIFI instrument support responsible shall be on hand to observe the status of HIFI. So he should be contacted before the next test step.					
4.	At prompt to record OBS_ID_per_hk during subsequent table readback commanding (which starts when OK is pressed); record value of HM003190 (typical reading = 9000xxxx hex), Note: at start & end value is 90000000 hex "Select OK to continue" Select OK	OK				

Enter Date Time:		Sign Off TD:	PA:	Test Location:
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Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
5.	Value of OBS_ID during table read commanding: HM003190			AND: HA000289		
6.	Request I-EGSE operator to run the command 'verifyreadback <OBSID>' from a terminal window (opened from the terminal icon " >_" at bottom left of HIFIEGSE workstation screen) using the <OBSID> retrieved in the previous step. If the word PASS does not appear on the screen at the end of the verifyreadback, this is a nogo on this test procedure. If OK respond to prompt accordingly, otherwise contact SRON to investigate and resolve before continuing.	OK				
7.	On HPCCS when all autonomous actions have been completed by the power on script H102999SCVT017_ASDISTHIFI_PWR_ON_R it will prompt: "Set Bus Profile Back to Original Setting?"	NO				

Enter Date Time:		Sign Off	TD:	PA:	Test Location:
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Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
8.	<p>Select YES if it is likely that other non-HIFI instrument related activities are to be performed.</p> <p><i>However note that if the original Bus Profile was 0 (launch) the script will automatically leave the Bus Profile unchanged as this profile is not compatible with instruments being powered in Standby:</i></p> <p>"Bus Profile left unchanged, as original setting 0 (Launch)"</p> <p>Select OK to continue</p>	OK				
9.	<p>If NO selected then at the prompt:</p> <p>"Bus Profile left unchanged"</p> <p>Select OK to continue</p>	OK				
10.	<p>Verify HK TM packets are being received on APIDs 1025 & 1027</p>	OK				
11.	<p>Start Active Cooling of HIFI Panel i.a.w. AD-2</p>	OK				

Enter Date Time:		Sign Off	TD:	PA:	Test Location:
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Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
12.	Using TM Plot application on CCS start monitoring the temperature of the WBS lasers; parameters: HM062193 (HWV_Laser_T) & HM023193 (HWH_Laser_T). See Section 5.3.2.1 for details of this activity.	OK				
13.	HIFI Redundant powered and in Standby1 mode Return to calling procedure	OK				

Enter Date Time:			Sign Off	TD:	PA:	Test Location:	
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7.3.5 HIFI Redundant Standby1 to OFF

The following procedure will switch HIFI Redundant from Standby1 to OFF.

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	Stop Active Cooling of HIFI Panel i.a.w. AD-2	OK				
2.	From the HPCCS test conductor console start the test script: Z102999SCVT017_ASDGEN_HIFIPWROFF_R	OK				
3.	On HPCCS when prompted: "FM HIFI Switch OFF for IST or SFT in Hel/Hell conditions with warm LOU - Select NO to abort TS if not correct"	YES				
	If in any doubt about the script being executed NO should be selected to abort the script. Before restarting consult the relevant instrument support engineer to confirm the correct script to be used for the test in question.					
	If YES is selected the test script will go on to automatically power off all HIFI warm units.					

Enter Date Time:		Sign Off TD:	PA:	Test Location:
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Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
4.	On HPCCS when all autonomous actions have been completed by the power on script H102999SCVT018_ASDISTHIFI_PWR_OFF_R it will prompt: "Set Bus Profile Back to Original Setting?"	NO				
5.	Select YES if it is likely that other non-HIFI instrument related activities are to be performed. <i>However note that if the original Bus Profile was 0 (launch) the script will automatically leave the Bus Profile unchanged as this profile is not compatible with instruments being powered in Standby:</i> "Bus Profile left unchanged, as original setting 0 (Launch)"	OK				
6.	If NO selected then at the prompt: "Bus Profile left unchanged" Select OK to continue	OK				

Enter Date Time:		Sign Off TD:	PA:	Test Location:
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Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
7.	On HPCCS stop Packet History displays for the following APIDs:1025,1027	OK				
8.	HIFI OFF Return to calling Procedure	OK				

Enter Date Time:		Sign Off	TD:	PA:	Test Location:
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7.3.6 HIFI Nominal Standby1 to Science (PRIME)

Running the following procedure will configure HIFI Nominal from STANDBY1 to Prime mode via Standby2 mode.

When in Prime mode, simulated science is started which will generate packets on APIDs 1028, 1029, 1030 & 1031. It should be noted that HPCCS does not acquire the science packets in SCOS but archives them into TMDUMP files instead. However, it will route the packets to the IEGSE if the link is enabled.

Note: Transitions above Standby1 are not considered for HIFI Redundant at present.

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	From the HPCCS test conductor console start the test script to put HIFI into science from Standby1: Z102999SCVT020_ASDGEN_HIFISTBY1_2OPS_P	OK			✓	
2.	On HPCCS when prompted: "Command HIFI from STANDBY1 via STANDBY2 to PRIME mode in Hel/Hell with WARM LOU - Select NO to abort TS if not correct" Select YES	YES			✓	

Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
3.	On HPCCS when prompted: "Bus profile left as HIFI PRIME while in Science Prime mode - OK to continue" Select OK	OK			✓	
4.	HIFI Nominal in Science Prime Return to or synchronise with calling Procedure	OK				

Enter Date Time:	3.5.08	15.09	Sign Off	TD: <i>C. Much</i>	PA: <i>D. Kennedy</i>	Test Location:	ESTEC
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7.3.7 HIFI Nominal Science (PRIME) to Standby1

Running the following procedure will configure HIFI from Science (Prime) to STANDBY1 via Standby2 mode. The transition from Standby2 to Standby1 switches off the WEV & WEH lasers. The active cooling from external GSE (see section 5.3.2.1 for details) should therefore be stopped.

Note: Transitions above Standby1 are not considered for HIFI Redundant at present.

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	From the HPCCS test conductor console start the test script to put HIFI in Standby1 from simulated Science: Z102999SCVT021_ASDGEN_HIFIOPS2_STBY1_P	OK				
2.	On HPCCS when prompted: "Command HIFI from PRIME via STANDBY2 to STANDBY1 mode in Hel/Hell with WARM LOU - Select NO to abort TS if not correct" Select YES	YES				

Enter Date Time:		Sign Off TD:	PA:	Test Location:
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Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
3.	On HPCCS when prompted: "Bus profile left as HIFI PRIME, change manually after if required - OK to continue" Select OK	OK				
4.	HIFI Nominal in Standby1 Return to or synchronise with calling Procedure	OK				

Enter Date Time:			Sign Off TD:	PA:	Test Location:	
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7.3.8 HIFI I-EGSE Disconnection

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	From HPCCS Test Conductor console issue command to disconnect PACS I-EGSE disconnect HHIFIEGSE	DISCONNECTED		AND: SYS_PARS		
2.	If no longer required for other instrument activities, from the HPCCS test conductor console terminate the test script: ALL_SubscribeParams					
3.	Return to calling Procedure					

Enter Date Time:			Sign Off	TD:	PA:	Test Location:	
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Doc. No: HP-2-ASED-TP-0206

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Date: 25.04.08

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7.4 HIFI Instrument ICU Only Configuration Procedures

7.4.1 HIFI Nominal OFF to ICU ON

The following will switch ON and configure HIFI Nominal ICU. HKTM packets will be generated on APIDs 1024 dec and 1026 decimal (these can be observed using TMPH with corresponding filter – note however a limited number of TMPHs should be running at one time).

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	On HPCCS start Packet History displays for the following APIDs:1024,1026	OK				
2.	From the HPCCS test conductor console start the test script: Z102999SCVT014_ASDGEN_HIFIPWRON_P	OK		ANDs HA000289 HA004289		
3.	On HPCCS when prompted: "FM HIFI ICU Standalone Switch ON - Select NO to abort TS if not correct"	YES				

Enter Date Time:			Sign Off	TD:	PA:	Test Location:	
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Issue: 1.2

Date: 25.04.08

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Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
4.	<p>On HPCCS when all autonomous actions have been completed by the power on script H102999SCVT009_ASDGENHIFI_ICU_ON_P it will prompt:</p> <p><i>"Set Bus Profile Back to Original Setting?"</i></p>	NO				
5.	<p>Select YES if it is likely that other non-HIFI instrument related activities are to be performed.</p> <p><i>However note that if the original Bus Profile was 0 (launch) the script will automatically leave the Bus Profile unchanged as this profile is not compatible with instruments being powered in Standby:</i></p> <p><i>"Bus Profile left unchanged, as original setting 0 (Launch)"</i></p> <p>Select OK to continue</p>	OK				
6.	<p>If NO selected then at the prompt:</p> <p><i>"Bus Profile left unchanged"</i></p> <p>Select OK to continue</p>	OK				

Enter Date Time:		Sign Off	TD:	PA:	Test Location:
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Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
7.	Verify HK TM packets are being received on APIDs 1024 & 1026	OK				
8.	HIFI Nominal ICU powered Return to calling procedure	OK				

Enter Date Time:			Sign Off TD:	PA:	Test Location:	
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Issue: 1.2

Date: 25.04.08

File: HP-2-ASED-TP-0206_Issue_1r2.Doc

7.4.2 HIFI Nominal ICU ON to OFF

The following procedure will switch HIFI Nominal ICU OFF.

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	From the HPCCS test conductor console start the test script: Z102999SCVT015_ASDGEN_HIFIPWROFF_P	OK				
2.	On HPCCS when prompted: "FM HIFI ICU Standalone Switch OFF - Select NO to abort TS if not correct"	YES				
	If in any doubt about the script being executed NO should be selected to abort the script. Before restarting consult the relevant instrument support engineer to confirm the correct script to be used for the test in question.					
	If YES is selected the test script will go on to automatically power off all HIFI warm units.					

Enter Date Time:		Sign Off	TD:	PA:	Test Location:
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Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
3.	On HPCCS when all autonomous actions have been completed by the power on script H102999SCVT010_ASDGENHIFI_ICU_OFF_P it will prompt: <i>"Set Bus Profile Back to Original Setting?"</i>	NO				
4.	Select YES if it is likely that other non-HIFI instrument related activities are to be performed. <i>However note that if the original Bus Profile was 0 (launch) the script will automatically leave the Bus Profile unchanged as this profile is not compatible with instruments being powered in Standby:</i> <i>"Bus Profile left unchanged, as original setting 0 (Launch)"</i>	OK				
5.	If NO selected then at the prompt: <i>"Bus Profile left unchanged"</i> Select OK to continue	OK				

Enter Date Time:		Sign Off	TD:	PA:	Test Location:
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Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
6.	On HPCCS stop Packet History displays for the following APIDs:1024,1026	OK				
7.	HIFI OFF Return to calling Procedure	OK				

Enter Date Time:			Sign Off	TD:	PA:	Test Location:	
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Doc. No: HP-2-ASED-TP-0206

Issue: 1.2

Date: 25.04.08

File: HP-2-ASED-TP-0206_Issue_1r2.Doc

7.4.3 HIFI Redundant OFF to ICU ON

The following will switch ON and configure HIFI Redundant ICU. HKTM packets will be generated on APIDs 1025 dec and 1027 decimal (these can be observed using TMPH with corresponding filter – note however a limited number of TMPHs should be running at one time).

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	On HPCCS start Packet History displays for the following APIDs:1025,1027	OK				
2.	From the HPCCS test conductor console start the test script: Z102999SCVT014_ASDGEN_HIFIPWRON_R	OK		ANDs HA000289 HA004289		
3.	On HPCCS when prompted: "FM HIFI ICU Standalone Switch ON - Select NO to abort TS if not correct"	YES				

Enter Date Time:		Sign Off	TD:	PA:	Test Location:
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Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
4.	On HPCCS when all autonomous actions have been completed by the power on script H102999SCVT011_ASDGENHIFI_ICU_ON_R it will prompt: "Set Bus Profile Back to Original Setting?"	NO				
5.	Select YES if it is likely that other non-HIFI instrument related activities are to be performed. <i>However note that if the original Bus Profile was 0 (launch) the script will automatically leave the Bus Profile unchanged as this profile is not compatible with instruments being powered in Standby:</i> "Bus Profile left unchanged, as original setting 0 (Launch)" Select OK to continue	OK				
6.	If NO selected then at the prompt: "Bus Profile left unchanged" Select OK to continue	OK				

Enter Date Time:		Sign Off	TD:	PA:	Test Location:	
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Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
7.	Verify HK TM packets are being received on APIDs 1025 & 1027	OK				
8.	HIFI Redundant ICU powered Return to calling procedure	OK				

Enter Date Time:			Sign Off	TD:	PA:	Test Location:	
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Doc. No: HP-2-ASED-TP-0206

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7.4.4 HIFI Redundant ICU ON to OFF

The following procedure will switch HIFI Nominal ICU OFF.

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	From the HPCCS test conductor console start the test script: Z102999SCVT015_ASDGEN_HIFIPWROFF_P	OK				
2.	On HPCCS when prompted: "FM HIFI ICU Standalone Switch OFF - Select NO to abort TS if not correct"	YES				
	If in any doubt about the script being executed NO should be selected to abort the script. Before restarting consult the relevant instrument support engineer to confirm the correct script to be used for the test in question.					
	If YES is selected the test script will go on to automatically power off all HIFI warm units.					

Enter Date Time:		Sign Off TD:	PA:	Test Location:	
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Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
3.	On HPCCS when all autonomous actions have been completed by the power on script H102999SCVT010_ASDGENHIFI_ICU_OFF_P it will prompt: <i>"Set Bus Profile Back to Original Setting?"</i>	NO				
4.	Select YES if it is likely that other non-HIFI instrument related activities are to be performed. <i>However note that if the original Bus Profile was 0 (launch) the script will automatically leave the Bus Profile unchanged as this profile is not compatible with instruments being powered in Standby:</i> <i>"Bus Profile left unchanged, as original setting 0 (Launch)"</i>	OK				
5.	If NO selected then at the prompt: <i>"Bus Profile left unchanged"</i> Select OK to continue	OK				

Enter Date Time:		Sign Off TD:	PA:	Test Location:
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Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
6.	On HPCCS stop Packet History displays for the following APIDs:1025,1027	OK				
7.	HIFI OFF Return to calling Procedure	OK				

Enter Date Time:			Sign Off	TD:	PA:	Test Location:	
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Doc. No: HP-2-ASED-TP-0206

Issue: 1.2

Date: 25.04.08

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7.4.5 HIFI Nominal ICU ON to Simulated Science

Running the following procedure will configure HIFI from ICU ON to Simulated Science mode.

Note HPCCS does not acquire the science packets in SCOS but archives them into TMDUMP files instead. However, it will route the packets to the IEGSE if the link is enabled.

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	From the HPCCS test conductor console start the test script to put HIFI into simulated science: Z102999SCVT020_ASDGEN_HIFISTBY1_2OPS_P	OK				
2.	On HPCCS when prompted: "Command HIFI from ICU ON to Simulated Science mode in Hel/Hell conditions - Select NO to abort TS if not correct" Select YES	YES				

Enter Date Time:		Sign Off	TD:	PA:	Test Location:	
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Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
3.	On HPCCS when prompted: "Bus profile left as HIFI PRIME while in Science Prime mode - OK to continue" Select OK	OK				
4.	HIFI Nominal in Simulated Science Return to or synchronise with calling Procedure	OK				

Enter Date Time:			Sign Off	TD:	PA:	Test Location:	
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Doc. No: HP-2-ASED-TP-0206

Issue: 1.2

Date: 25.04.08

File: HP-2-ASED-TP-0206_Issue_1r2.Doc

7.4.6 HIFI Nominal Simulated Science (PRIME) to ICU ON

Running the following procedure will configure HIFI from Simulated Science (Prime) to ICU ON.

When in Prime mode, simulated science is started which will generate packets on APIDs 1028, 1029, 1030 & 1031. It should be noted that HPCCS does not acquire the science packets in SCOS but archives them into TMDUMP files instead. However, it will route the packets to the IEGSE if the link is enabled.

Note: Transitions above Standby1 are not considered for HIFI Redundant at present.

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	From the HPCCS test conductor console start the test script to HIFI Stop simulated Science: Z102999SCVT021_ASDGEN_HIFIOPS2_STBY1_P	OK				
2.	On HPCCS when prompted: "Command HIFI from Simulated Science mode to ICU ON in Hel/Hell conditions - Select NO to abort TS if not correct" Select YES	YES				

Enter Date Time:		Sign Off	TD:	PA:	Test Location:
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Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
3.	On HPCCS when prompted: "Bus profile left as HIFI PRIME, change manually after if required - OK to continue" Select OK	OK				
4.	HIFI Nominal in ICU ON Return to or synchronise with calling Procedure	OK				

Enter Date Time:		Sign Off	TD:	PA:	Test Location:	
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Doc. No: HP-2-ASED-TP-0206

Issue: 1.2

Date: 25.04.08

File: HP-2-ASED-TP-0206_Issue_1r2.Doc

8 ANNEX - Script hierarchy

Detailed in the following sub-sections:

8.1 General

ALL_SubscribeParams

8.2 PACS

Z102999SCVT010_ASDGEN_PACSPWRON_P

-> P102999SCVT905_ASDISTPACS_PWR_ON_N
-> -> Z010999MMXX002UNITS_CHECK

Z102999SCVT011_ASDGEN_PACSPWROFF_P

-> P102999SCVT906_ASDISTPACS_PWR_OFF_N
-> -> Z010999MMXX002UNITS_CHECK

Z102999SCVT012_ASDGEN_PACSPWRON_R

P102999SCVT907_ASDISTPACS_PWR_ON_R
-> -> Z010999MMXX002UNITS_CHECK

Z102999SCVT013_ASDGEN_PACSPWROFF_R

-> P102999SCVT908_ASDISTPACS_PWR_OFF_R
-> -> Z010999MMXX002UNITS_CHECK

P102999SCVT904_ASDGENPACS_NomSpect

P102999SCVT913_ASDGENPACS_BurstMode

PACS_SAFE_Mode

8.3 SPIRE

Z102999SCVT004_ASDGEN_SPIREPWRON_P

-> S102999SCVT017_ASDGENSPIR_PWR_ON_P
-> -> SPIRE-IST-DBG-OFF2DPUON-SP
-> -> SPIRE-IST-DBG-DPUON2STBY
-> -> SPIRE-IST-DBG-LOAD-VM-TABLES
-> -> Z010999MMXX002UNITS_CHECK

Z102999SCVT005_ASDGEN_SPIREPWROFF_P

-> S102999SCVT019_ASDGENSPIR_PWR_OFF_P
-> -> SPIRE-IST-DBG-STBY2OFF
-> -> Z010999MMXX002UNITS_CHECK

Z102999SCVT006_ASDGEN_SPIREPWRON_R

-> S102999SCVT018_ASDGENSPIR_PWR_ON_R
-> -> SPIRE-IST-DBG-OFF2DPUON
-> -> SPIRE-IST-DBG-DPUON2STBY
-> -> SPIRE-IST-DBG-LOAD-VM-TABLES
-> -> Z010999MMXX002UNITS_CHECK

Z102999SCVT007_ASDGEN_SPIREPWROFF_R

-> S102999SCVT020_ASDGENSPIR_PWR_OFF_R
-> -> SPIRE-IST-DBG-STBY2OFF
-> -> Z010999MMXX002UNITS_CHECK

Z102999SCVT008_ASDGEN_SPIRESTBY2OPS

-> S102999SCVT911_ASDDBGSPIR_STBY2OPS
-> -> SPIRE-IST-DBG-STBY2OPS

Z102999SCVT009_ASDGEN_SPIREOPS2STBY

-> S102999SCVT912_ASDDBGSPIR_OPS2STBY
-> -> SPIRE-IST-DBG-OPS2STBY

8.4 HIFI Full Configuration

HIFIST_ASED_PatchPtvChecksum

HIFIST_ASED_PatchTempLimits

Note that the above 2 scripts have to be maintained in line with latest version of HIFI script(s) HIFIST_CCS_conf_ptv_checksum_<env>.tcl (where <env> = warm or cold) based on satellite environmental conditions.

Z102999SCVT014_ASDGEN_HIFIPWRON_P

```
-> H102999SCVT005_ASDGENHIFI_PWR_ON_P
-> -> HIFIST_nom_Startup_force_boot_warm
-> -> HIFIST_nom_Startup_OBS_SFT_warm
-> -> HIFIST_nom_Startup_FCU_on_warm
-> -> HIFIST_nom_Startup_lasertemp_override_warm
-> -> HIFIST_nom_Startup_WBSH_on_warm
-> -> HIFIST_nom_Startup_WBSV_on_warm
-> -> HIFIST_nom_Startup_HRS_on_warm
-> -> HIFIST_nom_Startup_LCU_on_warm
-> -> HIFIST_nom_Startup_LCU_table_load_warm
-> -> HIFIST_nom_Startup_LCU_table_read_warm
-> -> Z010999MMXX002UNITS_CHECK
```

Z102999SCVT015_ASDGEN_HIFIPWROFF_P

```
-> H102999SCVT006_ASDGENHIFI_PWR_OFF_P
-> -> HIFIST_nom_Startup_FPU_standby_warm
-> -> HIFIST_nom_Startup_WBS_standby_warm
-> -> HIFIST_nom_Startup_HRS_standby_warm
-> -> HIFIST_nom_Startup_all_off_warm
-> -> Z010999MMXX002UNITS_CHECK
```

Z102999SCVT016_ASDGEN_HIFIPWRON_R

```
-> H102999SCVT007_ASDGENHIFI_PWR_ON_R
-> -> HIFIST_red_Startup_force_boot_warm
-> -> HIFIST_red_Startup_OBS_SFT_warm
-> -> HIFIST_red_Startup_FCU_on_warm
-> -> HIFIST_red_Startup_lasertemp_override_warm
-> -> HIFIST_red_Startup_WBSH_on_warm
-> -> HIFIST_red_Startup_WBSV_on_warm
-> -> HIFIST_red_Startup_HRS_on_warm
-> -> HIFIST_red_Startup_LCU_on_warm
-> -> HIFIST_red_Startup_LCU_table_load_warm
-> -> HIFIST_red_Startup_LCU_table_read_warm
-> -> Z010999MMXX002UNITS_CHECK
```

Z102999SCVT017_ASDGEN_HIFIPWROFF_R

```
-> H102999SCVT008_ASDGENHIFI_PWR_OFF_R
-> -> HIFIST_red_Startup_FPU_standby_warm
-> -> HIFIST_red_Startup_WBS_standby_warm
```

- > -> HIFIST_red_Startup_HRS_standby_warm
- > -> HIFIST_red_Startup_all_off_warm
- > -> Z010999MMXX002UNITS_CHECK

Z102999SCVT020_ASDGEN_HIFISTBY1_2OPS_P

- > H102999SCVT028_ASDISTHIFI_STBY1_2PRIME_P
- > -> HIFIST_nom_HIFI_STBY_2_warm
- > -> HIFIST_nom_HIFI_Primary_warm

Z102999SCVT021_ASDGEN_HIFIOPS2_STBY1_P

- > H102999SCVT029_ASDISTHIFI_PRIME_2STBY1_P
- > -> HIFIST_nom_HIFI_STBY_2_warm
- > -> HIFIST_nom_HIFI_STBY_1_warm

8.5 HIFI ICU Configuration**H102999SCVT009_ASDGENHIFI_ICU_ON_P****H102999SCVT010_ASDGENHIFI_ICU_OFF_P****H102999SCVT011_ASDGENHIFI_ICU_ON_R****H102999SCVT012_ASDGENHIFI_ICU_OFF_R****H102999SCVT030_ASDISTHIFI_ICUON_2SIMSCI****H102999SCVT031_ASDISTHIFI_SIMSCI_2ICUON**

8.6 Procedure Variation Summary

	Test Change	Curr. No.:	
		Date	
		Page	of
Test designation	Test Procedure	Issue	Rev.
Test step changed	Reason for Change		
Prepared by:	Resp. Test Leader	Project Engineer	
PA/QA	Prime	Customer	

Table 8.6-1: Procedure Variation Sheet

8.7 Non Conformance Report (NCR) Summary

NCR - No.	NCR - Title	Date	Open Closed	PA sig.

Table 8.7-1: Non-Conformance Record Sheet

8.8 Sign-off Sheet

	Date	Signature
Test Director	1-5-08	S. MCONEY
Test Conductor	1-5-08	C. MOCH
PA Responsible	01-05-08	D. Lamonty
ESA Representative		

END OF DOCUMENT

	Name	Dep./Comp.		Name	Dep./Comp.
X	Alberti von Mathias Dr.	ASG22		Schweickert Gunn	ASG22
	Baldock Richard	FAE12	X	Sonn Nico	ASG51
	Barlage Bernhard	AED13		Steininger Eric	AED32
	Bayer Thomas	ASA42	X	Stritter Rene	AED11
	Brune Holger	ASA45		Suess Rudi	OTN/ASA44
	Edelhoff Dirk	AED2		Theunissen Martijn	Dutch Space
	Fehringer Alexander	ASG13		Wagner Klaus	ASG22
X	Fricke Wolfgang Dr.	AED 65	X	Wietbrock Walter	AET12
	Geiger Hermann	ASA42		Wöhler Hans	ASG22
	Grasl Andreas	OTN/ASA44		Wössner Ulrich	ASE252
X	Grasshoff Brigitte	AET12			
X	Hamer Simon	Terma			
	Hendry David	Terma			
	Hengstler Reinhold	ASA42			
	Hinger Jürgen	ASG22			
X	Hohn Rüdiger	AED65			
	Hölzle Edgar Dr.	AED32			
	Huber Johann	ASA42			
	Hund Walter	ASE252			
X	Idler Siegmund	AED312			
	Ivány von András	FAE12			
	Jahn Gerd Dr.	ASG22			
	Kalde Clemens	ASM2			
	Kameter Rudolf	OTN/ASA42			
	Kettner Bernhard	AET42			
	Knoblauch August	AET32		Alcatel Alenia Space Cannes	AAS-F
X	Koelle Markus	ASA43		Alcatel Alenia Space Torino	AAS-I
X	Koppe Axel	AED312		ESA/ESTEC	ESA
X	Kroeker Jürgen	AED65			
X	La Gioia Valentina	Terma		Instruments:	
	Lang Jürgen	ASE252	X	MPE (PACS)	MPE
	Langenstein Rolf	AED15	X	RAL (SPIRE)	RAL
	Langfermann Michael	ASA41	X	SRON (HIFI)	SRON
X	Maukisch Jan	ASA43			
X	Much Christoph	ASA43			
	Müller Jörg	ASA42		Subcontractors:	
	Müller Martin	ASA43		Alcatel Alenia Space Antwerp	ABSP
	Peltz Heinz-Willi	ASG13		Austrian Aerospace	AAE
	Pietroboni Karin	AED65		Austrian Aerospace	AAEM
	Platzer Wilhelm	AED2		BOC Edwards	BOCE
	Reichle Konrad	ASA42		Dutch Space Solar Arrays	DSSA
	Runge Axel	OTN/ASA44		EADS Astrium Sub-Subsyst. & Equipment	ASSE
	Schink Dietmar	AED32		EADS CASA Espacio	CASA
	Schlosser Christian	OTN/ASA44		EADS CASA Espacio	ECAS
	Schmidt Rudolf	FAE12		European Test Services	ETS
	Schmidt Thomas	ASA42		Patria New Technologies Oy	PANT
	Schuler Günter	ASA42		SENER Ingenieria SA	SEN

Attachment 6 to Section 6.1.1:

As-Run Procedure HP-2-ASED-TP-0206

AS RUN COPY
used during "Mode transitions"
1st test case 02/05/08
NOTE! SPECIFIC HiFi PARTS RERUN
THIS DAY. INDICATED AS
"020508-2ND RUN"

Title: **Herschel Instrument Power ON-OFF and Mode Switching Procedure for Functional Testing**

CI-No:

some parts run on 03-05-08
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Issue	Date	Sheet	Description of Change	Release
1	07.01.2008		Initial version	
1	21.04.2008		Revised version covering all instruments including simulated science modes. HIFI ICU only configuration	1
1	25.04.2008		Revised version HIFI "ICU only" plus HIFI Mode Transitions procedure	2

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1 Scope

1.1 Objective

This document details the Instrument (PACS, SPIRE & HIFI) procedures provided to support primarily SVM oriented IST activities. The procedures can also be used where appropriate to support other non-specific instrument tests (e.g. EMC, shipping health check). The procedures cover the following basic activities:

- Instrument (Prime & Redundant) Switch ON/OFF to/from Standby* mode
- Configuration of, and connection to, the Instrument EGSEs (I-EGSEs)
- Transition from "Standby" to a simulated** Science producing mode

* "Standby" is an artificial mode which cannot be characterised by one particular parameter for any instrument. Each instrument also uses an alternative name to indicate "Standby" mode; for PACS this is SAFE and for SPIRE it is REDY, HIFI has two standby modes Standby1 & Standby2, the primary difference between the two is whether the lasers are switched ON (2) or OFF (1).

** Simulated Science is sufficient for the needs of non-specific instrument IST activities and is representative in terms of APID allocation and bandwidth but not data content.

This document will, where necessary, evolve during the system level AIT activities in order to reflect the configuration of the instruments (completion of integration activities) and the Herschel satellite (the latter in order to handle operation of the instruments in warm, Hel and Hell conditions)

1.2 Constraints

The instrument procedures are designed to be run without the need for Instrument specific support, and for PACS, SPIRE plus HIFI ICU only without need of connection to the I-EGSEs.

For HIFI full configuration (the so called "Mode Transitions") connection to the HIFI I-EGSE is required, as is support from SRON personnel (latter TBC).

However, it is mandatory for any PACS usage that PACS OBCPs/EATs have been loaded and are enabled for the duration of the test.

HIFI and SPIRE currently do not require OBCPs/EATs to be operational; however the test itself may require this, but is not a constraint for the instruments.

1.3 Operational Flow

Chapter 7 provides the detailed step-by-step procedures for each instrument, which are summarised below:

PACS

- I-EGSE Configuration & Connection
- PACS Prime OFF to Standby (SAFE)
- PACS Prime Standby (SAFE) to OFF
- PACS Redundant OFF to Standby (SAFE)
- PACS Redundant Standby (SAFE) to OFF
- PACS Standby (SAFE) to Nominal Spectroscopy (to Standby)
- PACS Standby (SAFE) to Burst Mode (to Standby)
- I-EGSE Disconnection

SPIRE

- I-EGSE Configuration & Connection
- SPIRE Prime OFF to Standby (REDY)
- SPIRE Prime Standby (REDY) to OFF
- SPIRE Redundant OFF to Standby (REDY)
- SPIRE Redundant Standby (REDY) to OFF
- SPIRE Standby to OPS (Simulated Photometer)
- SPIRE OPS to Standby
- I-EGSE Disconnection

HIFI Full Configuration (I-EGSE Mandatory)

- I-EGSE Nominal/Redundant Configuration & Connection
- HIFI Nominal OFF to Standby1
- HIFI Nominal Standby1 to OFF
- HIFI Nominal Standby1 to PRIME (Science)
- HIFI Nominal PRIME (Science) to Standby1
- HIFI Redundant OFF to Standby1

- HIFI Redundant Standby1 to OFF
- I-EGSE Disconnection

- **HIFI ICU Configuration (without I-EGSE)**
- HIFI Nominal ICU ON
- HIFI Nominal ICU OFF
- HIFI Redundant ICU ON
- HIFI Redundant ICU OFF
- HIFI Start Simulated Science
- HIFI Stop Simulated Science

2 Documents/Drawings

This document incorporates, by dated or undated references, provisions from other publications. These normative references are cited at appropriate places in the text and publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these apply to this document only when incorporated into it by amendment or revision. For undated references, the latest edition of the publication referred to apply.

2.1 Applicable Documents

AD-1	Herschel SAT Emergency Switch Off Procedure	H-P-2-ASED-PR-071
AD-2	Procedure for setup and operation of the HIFI cooling system	HP-2-ASED-PR-125

2.2 Reference Documents

RD-1	Herschel PCDU & CDMS nominal switch on / off procedure	HP-2-ASED-PR-0070
RD-2	HIFI Switch On Procedure, Issue 1.16	SRON-G/HIFI/PR/2007-017
RD-3	PACS Switch On/Off, ref. email Helmut Feuchtgruber	17. April 2007 11:58
RD-4	SPIRE Integration System Test Debugging Procedures, Issue 1.3	SPIRE-RAL-PRC-002880
RD-5	PACS I-EGSE User Manual, Issue 1, 19-Jul-2007	PICC-ME-MN-010
RD-6	HIFI IEGSE setup procedure	SRON-U/HIFI/PR/2007-005
RD-7	SPIRE I-EGSE Set-Up, Issue 2.2	SPIRE-RAL-DOC-002841
RD-8	FIRST/PLANCK Instrument Interface Document part A	PT-IID-A-04624
RD-9	FIRST/PLANCK Instrument Interface Document part B (HIFI)	PT-IIDB/HIFI-02125
RD-10	FIRST/PLANCK Instrument Interface Document part B (PACS)	PT-IIDB/PACS-02126
RD-11	FIRST/PLANCK Instrument Interface Document part B (SPIRE)	PT-IIDB/SPIRE-02124

RD-12 LO SFT Procedure using LO Dummy, Issue 1.01

MPIfR/HIFI/PR/2006-565

RD-13 HIFI Mode Transitions Procedure, Iss 1.16

SRON-G/HIFI/PR/2007-020

2.3 Other Documents

N/A

2.4 Acronyms

See calling procedure.

3 Requirements to be verified

N/A

4 Configuration

4.1 Herschel S/C Configuration

4.1.1 *Hardware Configuration*

See relevant TRR MoM

4.1.2 *Software Configuration*

See relevant TRR MoM

4.1.3 *Test Configuration*

4.1.3.1 SVM

See relevant TRR MoM

4.1.3.2 HIFI

All warm units & FPU integrated. For this issue (1.1) Hel/Hell conditions can be supported but LOU must be warm.

If LOU is cold (i.e. for TB/TV) then this procedure must be updated according to RD2 & RD13.

4.1.3.3 PACS

All warm units and FPU is integrated and connected to the warm units. Warm or Cold Hel/Hell conditions.

4.1.3.4 SPIRE

All warm units integrated. Warm or Cold Hel/Hell conditions.

4.1.4 *Simulated Equipments*

N/A

5 Conditions

5.1 Personnel

See relevant TRR MoM

5.2 Environmental

See relevant TRR MoM

5.3 General Precautions and Safety

5.3.1 *General Safety Requirements, Precautions*

- For HIFI, Handling precautions according to RD-8 and RD-9 are applicable.
- For PACS, Handling precautions according to RD-8 and RD-10 are applicable.
- For SPIRE, Handling precautions according to RD-8 and RD-11 are applicable.

5.3.2 *Special condition and hazards*

The following Operational restrictions shall be carefully taken into account:

- In case of any failure, the activities shall be stopped until troubleshooting plan is generated and approved.

A general constraint for all instrument DPUs (or ICU in the case of HIFI), there shall be a 5 minute wait between switching off a DPU/ICU and switching it back on again.

5.3.2.1 HIFI

None when powering on/off HIFI ICU only as per sections 7.4.1 to 7.4.4.

When operating HIFI using the full configuration, ref. sections 7.3.2 to 7.3.7 the following applies:

- 1) Connection/Disconnection with the HIFI I-EGSE is required as per section 7.3.1 & 7.3.8.
- 2) The following Cryo temperature limits shall be observed when operating HIFI:

S/C Environmental	Limits	Actual
Cryostat Connection (Valves)	N/A	
Cryostat Status (Hel/Heli)	N/A	
Cryostat Level 0 Temp (T107 - CCUB)	<20K	
Cryostat Level 1 Temp (T231-T237 - CCUB)	<20K	
Cryostat Level 2 Temp (T207 read from CryoSCOE)	<=40K	
Cryostat Level 3 Temp	N/A	

3) The following shall be observed if HIFI is commanded to "Standby1" mode or above:

If switched on the WBS laser temperature (HM023193 HWH_Laser_T and HWV_Laser_T) may rise above a red limit (30degC) in the MIB. If this occurs the test can continue, but the time of occurrence should be logged. If the temperature rises to 35degC the lasers will be automatically switched off by the instrument.

It is recommended to start active cooling of the HIFI panel see AD-2 before the WBS laser temperatures reach 30degC to avoid "HIGH HIGH" alarms being reported repeatedly and unnecessarily by the HPCCS.

NB: If temperature trend is rising during the test then Cooling on HIFI panel may need to be adjusted (ref. AD-2).

5.3.2.2 PACS

Prior to switching ON PACS, PACS specific OBCPs & EATs shall be loaded and enabled on the CDMU. Note: the PACS power on scripts (ref. sections 7.1.2 & 7.1.4) will prompt for confirmation of this before allowing the operator to continue with power on of the instrument.

CDMU must be in AFO mode for the duration of PACS operations. Note this maybe extended to all instruments in the future.

Note during power off of PACS FDIR may be triggered due to expected (5,2) events being reported from PACS DPU. To avoid this PACS specific OBCPs are disabled for the duration of the power down sequence, and then re-enabled.

Connection of the PACS I-EGSE is not mandatory, however if MPE (PACS responsible) want to monitor the test from the I-EGSE then sections 7.1.1 & 7.1.9 apply.

5.3.2.3 SPIRE

Connection of the SPIRE I-EGSE is not mandatory, however if RAL (SPIRE responsible) want to monitor the test from the I-EGSE then sections 7.2.1 & 7.2.8 apply.

5.3.3 *ESD constraints*

See the Lead Procedure for the test concerned and the following:

- For HIFI, ESD precautions according to RD-8 and RD-9 are applicable.
- For SPIRE according to nominal ESD protection
- For PACS according to nominal ESD protection

5.3.4 Special QA Requirements

N/A

5.4 GSE

5.4.1 MGSE

N/A

5.4.2 CVSE

N/A

5.4.3 EGSE

5.4.3.1 EGSE Hardware Configuration

See TRR MoM for test concerned.

5.4.3.2 EGSE User Software

See TRR MoM for test concerned.

5.4.3.3 Grounding Configuration

N/A

5.4.3.4 Test Equipment

N/A

5.4.3.5 Data Acquisition System

N/A

5.4.4 OGSE

N/A

5.4.5 Special Equipment

N/A

6 Verification Requirements and Test Criteria

No specific requirements are verified by this procedure, it is purely acts as a supporting procedure to the main lead test procedure where the overall test criteria and verification requirements are defined.

7 Step-by-Step Procedures

7.1 PACS Instrument Procedures

7.1.1 PACS I-EGSE Configuration/Connection

The following procedure is NOT normally required for switching PACS ON or OFF.

It is only used when it is required to use the PACS I-EGSE to support the test being performed, either for monitoring of PACS specific TM on the IEGSE.

It is also required when performing PACS FDIR OBCP IST.

This procedure is independent of PACS redundancy configuration.

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	If not already on, Switch on & configure PACS I-EGSE i.a.w. RD-5			already on	✓	
2.	From HPCCS Test Conductor console issue command to connect to PACS I-EGSE connect HPACSEGSE	YZS28940== CONNECTED		AND: SYS_PARS	✓	
	<i>Perform the following two steps if command parameter exchange is required between the IEGSE and HPCCS for the test concerned.</i>				✓	

Enter Date Time:	11:05 2.5.08	Sign Off	TD: C. Muel	PA: D. Lamorby	Test Location:	ESTEC
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Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
3.	If not already running from the HPCCS test conductor console execute the test script: ALL_SubscribeParams			already running	✓	
4.	Verify HPCCS-IEGSE connection by sending the following test command from manual command stack (repeater value 0) and verify received OK on IEGSE: YC00X964	OK			✓	
5.	Return to calling Procedure					

Enter Date Time:	11:06	2.5.08	Sign Off	TD: C. Much	PA: D. Lamant	Test Location:	ESTEC
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7.1.2 PACS Prime OFF to Standby (SAFE)

The following will switch ON and configure PACS Prime instrument in SAFE mode in any satellite configuration (i.e. warm, or Cold Hel/Hell). HKTM packets will be generated on APIDs 1152 dec and 1154 decimal (these can be observed using TMPH with corresponding filter – note however a limited number of TMPHs should be running at any one time).

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	On HPCCS start Packet History displays for the following APIDs: 1152, 1154	OK			✓	
2.	From the HPCCS test conductor console start the test script to power PACS Prime to SAFE: Z102999SCVT010_ASDGEN_PACSPWRON_P				✓	
3.	On HPCCS when prompted: "FM PACS Switch ON in Warm or Cold conditions, FPU connected - Select NO to abort TS if not correct"	YES			✓	
4.	On HPCCS when prompted: " PACS FDIR OBCPs/EATs loaded and enabled? - If not select NO to abort TS"	YES		all OBCP are loaded ✓	✓	

Enter Date Time:	11:23	2/5/08	Sign Off TD:	<i>C. Mudd</i>	PA:	<i>J. M. L.</i>	Test Location:	ESVBC.
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Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
	If in any doubt about the script being executed NO should be selected to abort the script. Before restarting consult the relevant instrument support engineer to confirm the correct script to be used for the test in question.					
	If YES is selected the test script will go on to automatically power on all PACS warm units, force boot the DPU ASW and configure the instrument to SAFE (Standby mode)					
5.	If AFO mode not already selected for CDMU the script P102999SCVT905_ASDISTPACS_PWR_ON_N will prompt that AFO will be commanded next. Click OK to continue the script if the prompt appears.	OK		AFO is already activated	NA	

Enter Date Time:	11:23 2/5/08	Sign Off	TD: <i>C. P. ...</i>	PA: <i>[Signature]</i>	Test Location:	GSTER.
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Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
6.	<p>On HPCCS when all autonomous actions have been completed by the power on script P102999SCVT905_ASDISTPACS_PWR_ON_N it will prompt:</p> <p><i>"Set Bus Profile Back to Original Setting?"</i></p> <p>Select YES if it is likely that other non-PACS instrument related activities are to be performed, otherwise select NO.</p>	NO	yes		✓	
7.	<p>If YES selected the original Bus Profile will be restored.</p> <p><i>However note that if the original Bus Profile was 0 (launch) the script will automatically leave the Bus Profile unchanged as this profile is not compatible with instruments being powered in Standby, in which case the following prompt will appear:</i></p> <p><i>"Bus Profile left unchanged, as original setting 0 (Launch)"</i></p> <p>If prompted select OK to continue</p>	OK			✓	

Enter Date | Time: 2.5.08 11:40 Sign Off TD: C. Mudd PA: R. Goossens Test Location: ESTEC

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Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
8.	If NO selected then at the prompt: "Bus Profile left unchanged" Select OK to continue	OK		NA		
9.	The script will automatically terminate	OK			✓	
10.	Verify HK TM packets are being received on APIDs 1152 & 1154	OK			✓	
11.	Either using the ANDs indicated verify the correct status of the following PACS specific TM parameters or if the IEGSE is connected request IEGSE Operator to confirm that PACS is in SAFE mode: DM_BOL_REC_PAC (PM038420) is incrementing	Incrementing		AND: PA019420	✓	
12.	PACS in SAFE mode. Return to calling Procedure	OK			✓	

11:47

2-5-2008

Enter Date Time:	11:47	1ell	Sign Off TD:	1ell	PA: R. Goossens	Test Location:	Eske C
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7.1.3 PACS Prime Standby (SAFE) to OFF

The following procedure will switch PACS Prime from SAFE to OFF.

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	From the HPCCS test conductor console start the test script to power OFF PACS Prime from SAFE: Z102999SCVT011_ASDGEN_PACSPWROFF_P				✓	
2.	On HPCCS when prompted: "FM PACS Switch OFF in Warm or Cold conditions, FPU connected - Select NO to abort TS if not correct"	YES ✓			✓	
	If in any doubt about the script being executed NO should be selected to abort the script. Before restarting consult the relevant instrument support engineer to confirm the correct script to be used for the test in question.					
	If YES is selected the test script will go on to automatically power off all PACS warm units.					
3.	Note: During switch off of PACS (5,2) TM event packets are expected	(5,2) events observed YES			✓	

Enter Date Time:	2.7.08	18:52	Sign Off TD:	<i>C. Hurd</i>	PA:	<i>R. Jones</i>	Test Location:	ESTEC
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Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
4.	On HPCCS when all autonomous actions have been completed by the power on script P102999SCVT906_ASDISTPACS_PWR_OFF_N it will prompt: "Set Bus Profile Back to Original Setting?"	NO				
5.	Select YES if it is likely that other non-PACS instrument related activities are to be performed. However note that if the original Bus Profile was 0 (launch) the script will automatically leave the Bus Profile unchanged as this profile is not compatible with instruments being powered in Standby: "Bus Profile left unchanged, as original setting 0 (Launch)"	OK	yes		✓	
6.	If NO selected then at the prompt: "Bus Profile left unchanged" Select OK to continue	OK				
7.	On HPCCS stop Packet History displays for the following APIDs:1152,1154	OK				

Enter Date | Time: 2.7.08 18:59 Sign Off TD: *C. Hurd* PA: *R. Crossen* Test Location: ESTEG

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Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
8.	PACS OFF. Return to calling Procedure	OK			✓	

Enter Date Time:	2.5.08	18:59	Sign Off TD:	<i>C. Müller</i>	PA:	<i>R. Grossen J.</i>	Test Location:	BSTEC
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7.1.4 PACS Redundant OFF to Standby (SAFE)

The following will switch ON and configure PACS Redundant instrument in SAFE mode in any satellite configuration (i.e. warm, or Cold: Hel/Hell). HKTM packets will be generated on APIDs 1153 dec and 1155 decimal (these can be observed using TMPH with corresponding filter – note however a limited number of TMPHs should be running at any one time).

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	On HPCCS start Packet History displays for the following APIDs:1153,1155	OK				
2.	From the HPCCS test conductor console start the test script to power PACS Redundant to SAFE: Z102999SCVT012_ASDGEN_PACSPWRON_R					
3.	On HPCCS when prompted: "FM PACS Switch ON in Warm or Cold conditions, FPU connected - Select NO to abort TS if not correct"	YES				
4.	On HPCCS when prompted: " PACS FDIR OBCPs/EATs loaded and enabled? - If not select NO to abort TS"	YES				

Enter Date Time:		Sign Off	TD:	PA:	Test Location:	
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Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
	If in any doubt about the script being executed NO should be selected to abort the script. Before restarting consult the relevant instrument support engineer to confirm the correct script to be used for the test in question.					
	If YES is selected the test script will go on to automatically power on all PACS redundant warm units, force boot the DPU ASW and configure the instrument to SAFE (Standby mode).					
5.	If AFO mode not already selected for CDMU the script P102999SCVT907_ASDISTPACS_PWR_ON_R will prompt that AFO will be commanded next. Click OK to continue the script if the prompt appears.	OK				
6.	On HPCCS when all autonomous actions have been completed by the power on script P102999SCVT907_ASDISTPACS_PWR_ON_R it will prompt: <i>"Set Bus Profile Back to Original Setting?"</i>	NO				

Enter Date Time:		Sign Off	TD:	PA:	Test Location:	
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Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
7.	Select YES if it is likely that other non-PACS instrument related activities are to be performed. <i>However note that if the original Bus Profile was 0 (launch) the script will automatically leave the Bus Profile unchanged as this profile is not compatible with instruments being powered in Standby:</i> "Bus Profile left unchanged, as original setting 0 (Launch)"	OK				
8.	The script will automatically terminate					
9.	If NO selected then at the prompt: "Bus Profile left unchanged" Select OK to continue	OK				
10.	Verify HK TM packets are being received on APIDs 1153 & 1155					
11.	Either using the ANDs indicated verify the correct status of the following PACS specific TM parameters or if the IEGSE is connected request IEGSE Operator to confirm that PACS is in SAFE mode: DM_BOL_REC_PAC (PM038420) is	Incrementing		AND: PA019420		

Enter Date Time:		Sign Off TD:	PA:	Test Location:	
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Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
	incrementing					
12.	PACS in SAFE mode. Return to calling Procedure	OK				

Enter Date Time:		Sign Off TD:		PA:		Test Location:	
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7.1.5 PACS Redundant Standby (SAFE) to OFF

The following procedure will switch PACS Redundant from SAFE to OFF.

Note that during PACS switch-off, OBCPs for PACs are disabled and re-enabled at the end to avoid unwanted triggering of FDIR.

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	From the HPCCS test conductor console start the test script to power OFF PACS Redundant from SAFE: Z102999SCVT013_ASDGEN_PACSPWROFF_R					
2.	On HPCCS when prompted: "FM PACS Switch OFF in Warm or Cold conditions, FPU connected - Select NO to abort TS if not correct"	YES				
	If in any doubt about the script being executed NO should be selected to abort the script. Before restarting consult the relevant instrument support engineer to confirm the correct script to be used for the test in question.					
	If YES is selected the test script will go on to automatically power off all PACS Redundant warm units.					

Enter Date Time:		Sign Off	TD:	PA:	Test Location:	
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Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
3.	Note: During switch off of PACS (5,2) TM event packets are expected	(5,2) events observed				
4.	On HPCCS when all autonomous actions have been completed by the power on script P102999SCVT908_ASDISTPACS_PWR_OFF_R it will prompt: <i>"Set Bus Profile Back to Original Setting?"</i>	NO				
5.	Select YES if it is likely that other non-PACS instrument related activities are to be performed. <i>However note that if the original Bus Profile was 0 (launch) the script will automatically leave the Bus Profile unchanged as this profile is not compatible with instruments being powered in Standby:</i> <i>"Bus Profile left unchanged, as original setting 0 (Launch)"</i>	OK				
6.	If NO selected then at the prompt: <i>"Bus Profile left unchanged"</i> Select OK to continue	OK				

Enter Date Time:		Sign Off	TD:	PA:	Test Location:
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<i>Step- No.</i>	<i>Test-Step-Description</i>	<i>Nominal Value</i>	<i>Actual Value</i>	<i>Remarks</i>	<i>P</i>	<i>N</i>
7.	On HPCCS stop Packet History displays for the following APIDs:1153,1155	OK				
8.	PACS OFF. Return to calling Procedure	OK				

Enter Date Time:		Sign Off	TD:	PA:	Test Location:	
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7.1.6 PACS Standby (SAFE) to Nominal Spectroscopy (to Standby)

Running the following procedure will configure PACS from SAFE to Simulated Nominal Spectroscopy for a period of 14400 seconds. The test script will autonomously return PACS to SAFE after the allotted time.

Notes:

- 1) HPCCS does not acquire the science packets in SCOS but archives them into TMDUMP files instead. However, it will route the packets to the IEGSE if the link is enabled.
- 2) If PACS is switched off autonomously the script will remain running in the background, in which case it can be terminated manually.
- 3) If it is required to stop science data production before the allotted duration the script can be terminated manually and the SAFE mode procedure executed as per section 7.1.8.

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	From the HPCCS test conductor console start the test script to put PACS in simulated Nominal Spectroscopy from SAFE: P102999SCVT904_ASDGENPACS_NomSpect					

Enter Date Time:		Sign Off	TD:	PA:	Test Location:	
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Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
2.	PACS in Simulated Nominal Spectroscopy for 60 mins.			If it is required to return PACS to SAFE before the script completes it is possible to abort the script and then perform section 7.1.8.		
3.	Return to or synchronise with calling Procedure					

Enter Date Time:		Sign Off TD:		PA:		Test Location:	
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Date: 25.04.08

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7.1.7 PACS Standby (SAFE) to Burst Mode (to Standby)

Running the following procedure will configure PACS from SAFE to Simulated Burst mode for a period of 60 mins. The test script will autonomously return PACS to SAFE after the allotted time.

Notes:

- 1) HPCCS does not acquire the science packets in SCOS but archives them into TMDUMP files instead. However, it will route the packets to the IEGSE if the link is enabled.
- 2) If PACS is switched off autonomously the script will remain running in the background, in which case it can be terminated manually.
- 3) If it is required to stop science data production before the allotted duration the script can be terminated manually and the SAFE mode procedure executed as per section 7.1.8.

Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	From the HPCCS test conductor console start the test script to put PACS in simulated Nominal Spectroscopy from SAFE: P102999SCVT913_ASDGENPACS_BurstMode				✓	

Enter Date Time:	19:01	Sign Off TD:	<i>C. Munk</i>	PA:	<i>D. Lamoury</i>	Test Location:	ESTEC
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Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
2.	PACS in Simulated Burst mode for 60 mins.			If it is required to return PACS to SAFE before the script completes it is possible to abort the script and then perform section 7.1.8.	✓	✓
3.	Return to or synchronise with calling Procedure					

Enter Date Time:	3.5.09	49:06	Sign Off	TD: <i>C. Mueh</i>	PA: <i>D. Lamonty</i>	Test Location:	<i>ESTEC</i>
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7.1.8 PACS to Standby (SAFE)

Running the following procedure will configure PACS to SAFE from Simulated Burst or Science mode.

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	From the HPCCS test conductor console start the test script to put PACS into SAFE (Standby) mode from either simulated Burst or Science mode: <p style="text-align: center;">PACS_SAFE_Mode</p>			Ensure that PACS Prime Bus Profile is still selected		
2.	Return to or synchronise with calling Procedure					

Enter Date Time:			Sign Off	TD:	PA:	Test Location:
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7.1.9 PACS I-EGSE Disconnection

This procedure is only used if the complementary connection procedure has been performed previously. For most IST activities envisaged it is not required.

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	From HPCCS Test Conductor console issue command to disconnect PACS I-EGSE disconnect HPACSEGSE	DISCONNECTED		AND: SYS_PARS		
2.	If no longer required for other instrument activities, from the HPCCS test conductor console terminate the test script: ALL_SubscribeParams					
3.	Return to calling Procedure					

Enter Date Time:			Sign Off	TD:	PA:	Test Location:	
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7.2 SPIRE Instrument Procedures

7.2.1 SPIRE I-EGSE Configuration/Connection

The following procedure is NOT normally required for switching SPIRE ON or OFF.

It is only used when it is required to use the SPIRE I-EGSE to support the test being performed, either for monitoring of SPIRE specific TM on the IEGSE.

This procedure is independent of SPIRE redundancy configuration.

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	If not already on, Switch on & configure SPIRE I-EGSE i.a.w. RD-7					
2.	From HPCCS Test Conductor console issue command to connect to SPIRE I-EGSE connect HSPIREEGSE	YZS29940= CONNECTED		AND SYS_PARS		
	<i>Perform the following two steps if command parameter exchange is required between the IEGSE and HPCCS for the test concerned.</i>					

Enter Date Time:			Sign Off	TD:	PA:	Test Location:	
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Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
3.	If not already running from the HPCCS test conductor console execute the test script: ALL_SubscribeParams					
4.	Verify HPCCS-IEGSE connection by sending the following test command from manual command stack (repeater value 0) and verify received OK on IEGSE: YC00X966	OK				
5.	Return to calling Procedure					

Enter Date Time:			Sign Off	TD:	PA:	Test Location:	
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Issue: 1.2

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7.2.2 SPIRE Prime OFF to Standby (REDY)

The following will switch ON and configure SPIRE Prime instrument in REDY (Standby) mode. HKTM packets will be generated on APIDs 1280 dec and 1282 decimal (these can be observed using TMPH with corresponding filter – note however a limited number of TMPHs should be running at one time).

During power on of SPIRE a number of soft/hard OOLs are reported due to the sequential switch on of the units. This is expected and will clear when SPIRE is in REDY mode. When in REDY mode one parameter remains OOL (soft) namely SMD2V505 this is also expected.

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	On HPCCS start Packet History displays for the following APIDs:1280,1282	OK			✓	
2.	From the HPCCS test conductor console start the test script to power SPIRE Prime to REDY: Z102999SCVT004_ASDGEN_SPIREPWRON_P				✓	
3.	On HPCCS when prompted: "SPIRE Switch ON for IST activities in any conditions - Select NO to abort TS if not correct"	YES			✓	

Enter Date Time:	10.03	Sign Off	TD: 10: Martin	PA: R. Coassens	Test Location:	ESTEC
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Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
4.	If in any doubt about the script being executed NO should be selected to abort the script. Before restarting consult the relevant instrument support engineer to confirm the correct script to be used for the test in question.					
5.	If YES is selected the test script will go on to automatically power on all SPIRE warm units, force boot the DPU ASW and configure the instrument to REDY (Standby mode).				✓	
6.	On HPCCS when all autonomous actions have been completed by the power on script S102999SCVT017_ASDGENSPIR_PWR_ON_P it will prompt: <i>"Set Bus Profile Back to Original Setting?"</i>	NO			✓	

Enter Date Time:	02.05.08 10.19	Sign Off	TD: OMA	PA: R. Gossens	Test Location:	ESTEC
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Date: 25.04.08

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
7.	Select YES if it is likely that other non-SPIRE instrument related activities are to be performed. <i>However note that if the original Bus Profile was 0 (launch) the script will automatically leave the Bus Profile unchanged as this profile is not compatible with instruments being powered in Standby:</i> "Bus Profile left unchanged, as original setting 0 (Launch)"	OK			✓	
8.	If NO selected then at the prompt: "Bus Profile left unchanged" Select OK to continue	OK			✓	
9.	Verify HK TM packets are being received on APIDs 1280 & 1282				✓	
10.	Either using the ANDs indicated verify the correct status of the following SPIRE specific TM parameters or if the IEGSE is connected request IEGSE Operator to confirm that: THSK (SM00T500) parameter refreshing @ 0.25 Hz	OK		AND: SA_1_559	✓	

Enter Date Time:	02.05.08 10:21	Sign Off TD:	J. Kerlin	PA:	R. Garsson	Test Location:	ES TEC
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Issue: 1.2

Date: 25.04.08

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Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
	TM1N and TM2N parameters are incrementing as indicated: TM1N (SMT0N500) by 2 every 4 secs TM2N (SMT1N500) by 1 every 4 secs MODE parameter is set to "REDY" mode (RAW value 0x0200)	OK SM00M500 = 0x0200 (REDY)				
11.	SPIRE powered and in REDY mode Return to calling Procedure					

Enter Date Time:	02.05.08 09:23	Sign Off	TD: O. Norfin	PA:	Test Location:	ESTEC
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7.2.3 SPIRE Prime Standby (REDY) to OFF

The following procedure will switch SPIRE Prime from REDY to OFF.

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	From the HPCCS test conductor console start the test script to power OFF SPIRE Prime from REDY: Z102999SCVT005_ASDGEN_SPIREPWROFF_P	OK			✓	✓
2.	On HPCCS when prompted: "SPIRE Switch OFF for IST activities in any conditions - Select NO to abort TS if not correct"	YES			✓	✓
3.	If in any doubt about the script being executed NO should be selected to abort the script. Before restarting consult the relevant instrument support engineer to confirm the correct script to be used for the test in question.				✓	✓
4.	If YES is selected the test script will go on to automatically power off all SPIRE warm units.				✓	✓

Enter Date Time:	25.04	19:01	Sign Off	TD: J. Marlin	PA: R. Coenen	Test Location:	ESTE
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Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
5.	<p>During Switch OFF of SPIRE the following (5,1) and (5,4) event messages on APID 1280 are expected and do not indicate a problem:</p> <p>a) EVID 1313 No_MCU_Response_Error b) EVID 21773 ALARM_LSMCU_DEAD ✓</p>					
6.	<p>On HPCCS when all autonomous actions have been completed by the power on script S102999SCVT019_ASDGENSPIR_PWR_OFF_P it will prompt:</p> <p><i>"Set Bus Profile Back to Original Setting?"</i></p>	NO			✓	
7.	<p>Select YES if it is likely that other non-SPIRE instrument related activities are to be performed.</p> <p><i>However note that if the original Bus Profile was 0 (launch) the script will automatically leave the Bus Profile unchanged as this profile is not compatible with instruments being powered in Standby:</i></p> <p><i>"Bus Profile left unchanged, as original setting 0 (Launch)"</i></p>	OK			✓	

Enter Date | Time: 2.7.08 19:05 Sign Off TD: O. Martin PA: R. Coassens Test Location: ESTEC

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Issue: 1.2

Date: 25.04.08

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Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
8.	If NO selected then at the prompt: "Bus Profile left unchanged" Select OK to continue	OK			✓	
9.	On HPCCS stop Packet History displays for the following APIDs:1280,1282	OK				
10.	SPIRE OFF. Return to calling Procedure				✓	

Enter Date | Time: 2.5.08 19:06 Sign Off TD: O Martin PA: R. Coossens Test Location: ESTEC

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7.2.4 SPIRE Redundant OFF to Standby (REDY)

The following will switch ON and configure SPIRE Redundant instrument in REDY (Standby) mode. HKTm packets will be generated on APIDs 1281 dec and 1283 decimal (these can be observed using TMPH with corresponding filter – note however a limited number of TMPHs should be running at one time).

During power on of SPIRE a number of soft/hard OOLs are reported due to the sequential switch on of the units. This is expected and will clear when SPIRE is in REDY mode. When in REDY mode one parameter remains OOL (soft) namely SMD2V505 this is also expected.

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	On HPCCS start Packet History displays for the following APIDs:1281,1283	OK	:			
2.	From the HPCCS test conductor console start the test script to power SPIRE Prime to REDY: Z102999SCVT006_ASDGEN_SPIREPWRON_R					
3.	On HPCCS when prompted: "SPIRE Switch ON for IST activities in any conditions - Select NO to abort TS if not correct"	YES				

Enter Date Time:		Sign Off	TD:	PA:	Test Location:
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Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
4.	If in any doubt about the script being executed NO should be selected to abort the script. Before restarting consult the relevant instrument support engineer to confirm the correct script to be used for the test in question.					
5.	If YES is selected the test script will go on to automatically power on all SPIRE warm units, force boot the DPU ASW and configure the instrument to REDY (Standby mode).					
6.	On HPCCS when all autonomous actions have been completed by the power on script S10299SCVT018_ASDGENSPIR_PWR_ON_R it will prompt: <i>"Set Bus Profile Back to Original Setting?"</i>	NO				

Enter Date Time:			Sign Off	TD:	PA:	Test Location:	
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Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
7.	Select YES if it is likely that other non-SPIRE instrument related activities are to be performed. <i>However note that if the original Bus Profile was 0 (launch) the script will automatically leave the Bus Profile unchanged as this profile is not compatible with instruments being powered in Standby:</i> "Bus Profile left unchanged, as original setting 0 (Launch)"	OK				
8.	If NO selected then at the prompt: "Bus Profile left unchanged" Select OK to continue	OK				
9.	Verify HK TM packets are being received on APIDs 1281 & 1283					
10.	Either using the ANDs indicated verify the correct status of the following SPIRE specific TM parameters or if the IEGSE is connected request IEGSE Operator to confirm that: THSK (SM00T500) parameter refreshing @ 0.25 Hz	OK		AND: SA_1_559		

Enter Date Time:		Sign Off	TD:	PA:	Test Location:	
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<i>Step-No.</i>	<i>Test-Step-Description</i>	<i>Nominal Value</i>	<i>Actual Value</i>	<i>Remarks</i>	<i>P</i>	<i>N</i>
	TM1N and TM2N parameters are incrementing as indicated: TM1N (SMT0N500) by 2 every 4 secs TM2N (SMT1N500) by 1 every 4 secs MODE parameter is set to "REDY" mode (RAW value 0x0200)	OK SM00M500 = 0x0200 (REDY)				
11.	SPIRE powered and in REDY mode Return to calling Procedure					

Enter Date Time:		Sign Off	TD:	PA:	Test Location:	
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Issue: 1.2

Date: 25.04.08

File: HP-2-ASED-TP-0206_Issue_1r2.Doc

7.2.5 SPIRE Redundant Standby (REDY) to OFF

The following procedure will switch SPIRE Redundant from REDY to OFF.

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	From the HPCCS test conductor console start the test script to power OFF PACS Redundant from REDY: Z102999SCVT007_ASDGEN_SPIREPWROFF_R	OK				
2.	On HPCCS when prompted: "SPIRE Switch OFF for IST activities in any conditions - Select NO to abort TS if not correct"	YES				
	If in any doubt about the script being executed NO should be selected to abort the script. Before restarting consult the relevant instrument support engineer to confirm the correct script to be used for the test in question.					
3.	If YES is selected the test script will go on to automatically power off all SPIRE warm units.					

Enter Date Time:		Sign Off	TD:	PA:	Test Location:	
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Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
4.	<p>During Switch OFF of SPIRE the following (5,1) and (5,4) event messages on APID 1281 are expected and do not indicate a problem:</p> <p>c) EVID 1313 No_MCU_Response_Error d) EVID 21773 ALARM_LSMCU_DEAD</p>					
5.	<p>On HPCCS when all autonomous actions have been completed by the power on script S102999SCVT020_ASDGENSPIR_PWR_OFF_R it will prompt:</p> <p><i>"Set Bus Profile Back to Original Setting?"</i></p>	NO				
6.	<p>Select YES if it is likely that other non-SPIRE instrument related activities are to be performed.</p> <p><i>However note that if the original Bus Profile was 0 (launch) the script will automatically leave the Bus Profile unchanged as this profile is not compatible with instruments being powered in Standby:</i></p> <p><i>"Bus Profile left unchanged, as original setting 0 (Launch)"</i></p>	OK				

Enter Date Time:		Sign Off	TD:	PA:	Test Location:
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Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
7.	If NO selected then at the prompt: "Bus Profile left unchanged" Select OK to continue	OK				
8.	On HPCCS stop Packet History displays for the following APIDs:1281,1283	OK				
9.	SPIRE OFF. Return to calling Procedure					

Enter Date Time:		Sign Off TD:		PA:		Test Location:	
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7.2.6 SPIRE Standby (REDY) to Simulated Science (OPS)

Running the following procedure will configure SPIRE from REDY to Simulated Simulated PhotometerScience (OPS) mode.

Note HPCCS does not acquire the science packets in SCOS but archives them into TMDUMP files instead. However, it will route the packets to the IEGSE if the link is enabled.

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	From the HPCCS test conductor console start the test script to put SPIRE in simulated science from REDY: Z102999SCVT008_ASDGEN_SPIRESTBY2OPS					
2.	On HPCCS when prompted: "Command SPIRE from REDY to OPS mode in any conditions - Select NO to abort TS if not correct" Select YES	YES				

Enter Date Time:		Sign Off	TD:	PA:	Test Location:	
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Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
3.	On HPCCS when prompted: "Bus profile left as SPIRE PRIME while in OPS mode - OK to continue" Select OK	OK				
4.	Return to or synchronise with calling Procedure	OK				

Enter Date Time:			Sign Off	TD:	PA:	Test Location:	
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7.2.7 SPIRE Simulated Photometer Science (OPS) to Standby (REDY)

Running the following procedure will return SPIRE to REDY (Standy) from Simulated Simulated Photometer Science (Ops) mode.

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	From the HPCCS test conductor console start the test script to put SPIRE in REDY from simulated Science: Z102999SCVT009_ASDGEN_SPIREOPS2STBY					
2.	On HPCCS when prompted: "Command SPIRE from OPS to REDY mode in any conditions - Select NO to abort TS if not correct" Select YES	YES				
3.	On HPCCS when prompted: "Bus profile left as SPIRE PRIME, change manually after if required - OK to continue" Select OK	OK				

Enter Date Time:		Sign Off	TD:	PA:	Test Location:	
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Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
4.	Return to or synchronise with calling Procedure	OK				

Enter Date Time:			Sign Off	TD:	PA:	Test Location:	
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7.2.8 SPIRE I-EGSE Disconnection

This procedure is only used if the complementary connection procedure has been performed previously. For most IST activities envisaged it is not required.

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	From HPCCS Test Conductor console issue command to disconnect PACS I-EGSE disconnect HSPIREEGSE	DISCONNECTED		AND: SYS_PARS		
2.	If no longer required for other instrument activities, from the HPCCS test conductor console terminate the test script: ALL_SubscribeParams					
3.	Return to calling Procedure					

Enter Date Time:			Sign Off	TD:	PA:	Test Location:	
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7.3 HIFI Instrument Full Configuration Procedures

7.3.1 HIFI I-EGSE Configuration/Connection

This procedure is independent of HIFI redundancy configuration apart from I-EGSE configuration in step 1.

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	<p>If not already on, Switch on & configure HIFI I-EGSE i.a.w. RD-6.</p> <p>If switching on Nominal units then confirm I-EGESE configured for nominal and FPU cold and LOU warm without attenuators</p> <p>If switching on Redunant units then confirm I-EGESE configured for redundant and FPU cold and LOU warm without attenuators</p>	<p>OK</p> <p>Nominal/Redundant configuration</p>			✓	
2.	<p>From HPCCS Test Conductor console issue command to connect to HIFI I-EGSE</p> <p style="text-align: center;">connect HHIFIEGSE</p>	<p>YZS27940 = CONNECTED</p>		<p>AND SYS_PARS still connected</p>	✓	
	<p><i>Perform the following two steps if command parameter exchange is required between the IEGSE and HPCCS for the test concerned.</i></p>					

Enter Date Time:	020508	Sign Off	TD: J. Martin	PA: R. Goossens	Test Location:	ESTEC
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Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
3.	If not already running from the HPCCS test conductor console execute the test script: ALL_SubscribeParams	OK		still running	✓	
4.	Verify HPCCS-IEGSE connection by sending the following test command from manual command stack (repeater value 0) and verify received OK on IEGSE: YC00X962	OK			✓	
5.	Patch HIFI synthetic parameters for warm conditions by executing the following scripts: HIFIST_ASED_PatchPtvChecksum HIFIST_ASED_PatchTempLimits <i>Note these scripts replace HIFIST_CCS_conf_ptv_checksum_warm due to NCR-3652</i>	OK			✓	
6.	Return to calling Procedure					

Enter Date Time:	02-05-08	Sign Off	TD: C. MUCY	PA: D. AMONB7	Test Location:	ESTEC
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7.3.2 HIFI Nominal OFF to Standby1

The following will switch ON and configure HIFI Nominal instrument in Standby1 mode. HKTM packets will be generated on APIDs 1024 dec and 1026 decimal (these can be observed using TMPH with corresponding filter – note however a limited number of TMPHs should be running at one time).

During power on of HIFI a number of soft/hard OOLs are reported due to the sequential switch on of the units. Some of these are to be expected when in Hel conditions and the others are expected because the unit is typically cold at switch ON.

Parameters OOL when in Hel:

- HM248191 – HF_AP_2K_IF_CT
- HM243191 – HF_APR_SCCS_CT
- HM244191 – HF_APR_S10K_CT
- HM250191 – HF_AP_4K_END_CT

Parameters OOL expected to come back in limits when units warmed up:

- HM187192 – HRV_ACS_1_T
- HM188192 – HRV_AVS_2_T
- HM062192 – HRH_ACS_1_T
- HM063192 – HRH_AVS_2_T

Parameter OOL until HIFI powered in Standby1

- HD247194 – HL_ptv_checksum
- HM258194 – HL_MODE_S
- HM259194 – HL_error_word_S

Enter Date Time:			Sign Off	TD:	PA:	Test Location:	
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Some additional parameters may exhibit OOL during the test:

Parameter OOL expected during test but which should be monitored for duration of test (should be kept below 30degC to avoid HIGH-HIGHS being reported):

HM062193 – HWV_Laser_T

HM023193 – HWH_Laser_T

Parameter OOL expected during test but which need not be monitored:

HM022193 – HWH_CCD_T

HM061193 – HWV_CCD_T

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	On HPCCS start Packet History displays for the following APIDs:1024,1026	OK			✓	
2.	From the HPCCS test conductor console start the test script: Z102999SCVT014_ASDGEN_HIFIPWRON_P	OK		ANDs HA000289 HA004289 12:51	✓	
3.	On HPCCS when prompted: "FM HIFI Switch ON for IST or SFT in Hel/Hell conditions with warm LOU - Select NO to abort TS if not correct"	YES			✓	

Enter Date Time:	2.5.08 12:55	Sign Off TD:	C. And	PA:	R. Goossens	Test Location:	ESTEC
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7.3 HIFI Instrument Full Configuration Procedures

7.3.1 HIFI I-EGSE Configuration/Connection

This procedure is independent of HIFI redundancy configuration apart from I-EGSE configuration in step 1.

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	<p>If not already on, Switch on & configure HIFI I-EGSE i.a.w. RD-6.</p> <p>If switching on Nominal units then confirm I-EGESE configured for nominal and FPU cold and LOU warm without attenuators</p> <p>If switching on Redunant units then confirm I-EGESE configured for redundant and FPU cold and LOU warm without attenuators</p>	<p>OK</p> <p>Nominal/Redundant configuration</p>			✓	
2.	<p>From HPCCS Test Conductor console issue command to connect to HIFI I-EGSE</p> <p>connect HHIFIEGSE</p>	<p>YZS27940 = CONNECTED</p>		<p>AND SYS_PARS</p>		
	<p><i>Perform the following two steps if command parameter exchange is required between the IEGSE and HPCCS for the test concerned.</i></p>					

Enter Date | Time: 2.5.08 ~~15~~ Sign Off TD: O. Martin PA: R. Boossens Test Location: ESTEC

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
3.	If not already running from the HPCCS test conductor console execute the test script: ALL_SubscribeParams	OK			✓	
4.	Verify HPCCS-IEGSE connection by sending the following test command from manual command stack (repeater value 0) and verify received OK on IEGSE: YC00X962	OK			✓	
5.	Patch HIFI synthetic parameters for warm conditions by executing the following scripts: HIFIST_ASED_PatchPtvChecksum HIFIST_ASED_PatchTempLimits <i>Note these scripts replace HIFIST_CCS_conf_ptv_checksum_warm due to NCR-3652</i>	OK			✓ ✓	
6.	Return to calling Procedure					

Enter Date Time:	25.08	17:17	Sign Off	TD: a. Partic	PA: R. Coossens	Test Location:	ESTEC
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7.3.2 HIFI Nominal OFF to Standby1

The following will switch ON and configure HIFI Nominal instrument in Standby1 mode. HKTM packets will be generated on APIDs 1024 dec and 1026 decimal (these can be observed using TMPH with corresponding filter – note however a limited number of TMPHs should be running at one time).

During power on of HIFI a number of soft/hard OOLs are reported due to the sequential switch on of the units. Some of these are to be expected when in Hel conditions and the others are expected because the unit is typically cold at switch ON.

Parameters OOL when in Hel:

- HM248191 – HF_AP_2K_IF_CT
- HM243191 – HF_APR_SCCS_CT
- HM244191 – HF_APR_S10K_CT
- HM250191 – HF_AP_4K_END_CT

Parameters OOL expected to come back in limits when units warmed up:

- HM187192 – HRV_ACS_1_T
- HM188192 – HRV_AVS_2_T
- HM062192 – HRH_ACS_1_T
- HM063192 – HRH_AVS_2_T

Parameter OOL until HIFI powered in Standby1

- HD247194 – HL_ptv_checksum
- HM258194 – HL_MODE_S
- HM259194 – HL_error_word_S

Enter Date Time:		Sign Off	TD:	PA:	Test Location:
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Some additional parameters may exhibit OOL during the test:

Parameter OOL expected during test but which should be monitored for duration of test (should be kept below 30degC to avoid HIGH-HIGHs being reported):

HM062193 – HWV_Laser_T

HM023193 – HWH_Laser_T

Parameter OOL expected during test but which need not be monitored:

HM022193 – HWH_CCD_T

HM061193 – HWV_CCD_T

Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	On HPCCS start Packet History displays for the following APIDs:1024,1026	OK				
2.	From the HPCCS test conductor console start the test script: Z102999SCVT014_ASDGEN_HIFIPWRON_P	OK		ANDs HA000289 HA004289	U	
3.	On HPCCS when prompted: "FM HIFI Switch ON for IST or SFT in Hel/Hell conditions with warm LOU - Select NO to abort TS if not correct"	YES			U	

Enter Date Time:	47:18	R.J. 08	Sign Off	TD: C. Much	PA: R. Boossens	Test Location:	ESTFC
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7.3.3 HIFI Nominal Standby1 to OFF

The following procedure will switch HIFI Nominal from Standby1 to OFF.

Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	Stop Active Cooling of HIFI Panel i.a.w. AD-2	OK				
2.	From the HPCCS test conductor console start the test script: Z102999SCVT015_ASDGEN_HIFIPWROFF_P	OK		18:39	✓	
3.	On HPCCS when prompted: "FM HIFI Switch OFF for IST or SFT in Hel/Hell conditions with warm LOU - Select NO to abort TS if not correct"	YES			✓	
	If in any doubt about the script being executed NO should be selected to abort the script. Before restarting consult the relevant instrument support engineer to confirm the correct script to be used for the test in question.				✓	
	If YES is selected the test script will go on to automatically power off all HIFI warm units.				✓	

Enter Date | Time: 18:47 2.5.08 Sign Off TD: C. Mack PA: R. Goossens Test Location: ESTEC

Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
4.	On HPCCS when all autonomous actions have been completed by the power on script H102999SCVT016_ASDISTHIFI_PWR_OFF_P it will prompt: "Set Bus Profile Back to Original Setting?"	NO			✓	
5.	Select YES if it is likely that other non-HIFI instrument related activities are to be performed. <i>However note that if the original Bus Profile was 0 (launch) the script will automatically leave the Bus Profile unchanged as this profile is not compatible with instruments being powered in Standby:</i> "Bus Profile left unchanged, as original setting 0 (Launch)"	OK	yes	script crashes	✓	
6.	If NO selected then at the prompt: "Bus Profile left unchanged" Select OK to continue	OK				

Enter Date Time:	18:49	25-08	Sign Off	TD: C. Mueh	PA: R. Coossens	Test Location:	ESTEC
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Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
7.	On HPCCS stop Packet History displays for the following APIDs:1024,1026	OK			✓	
8.	HIFI OFF Return to calling Procedure	OK			✓	

Enter Date Time:	10:50	2-5-08	Sign Off	TD: C. Much	PA: R. Goossens	Test Location:	ESTEC
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Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
	If in any doubt about the script being executed NO should be selected to abort the script when prompted in the next step. Before restarting consult the relevant instrument support engineer to confirm the correct script to be used for the test in question.					
	If YES is selected the test script will go on to automatically power on all HIFI warm units, force boot the DPU ASW and configure the instrument to Standby. NB: In principle the HIFI instrument support responsible shall be on hand to observe the status of HIFI. So he should be contacted before the next test step.					
4.	At prompt to record OBS_ID_per_hk during subsequent table readback commanding (which starts when OK is pressed); record value of HM003190 (typical reading = 9000xxxx hex), Note: at start & end value is 90000000 hex "Select OK to continue" Select OK	OK				

Enter Date Time:		Sign Off	TD:	PA:	Test Location:
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Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
5.	Value of OBS_ID during table read commanding: HM003190			AND: HA000289		
6.	Request I-EGSE operator to run the command 'verifyreadback <OBSID>' from a terminal window (opened from the terminal icon " >_" at bottom left of HIFIEGSE workstation screen) using the <OBSID> retrieved in the previous step. If the word PASS does not appear on the screen at the end of the verifyreadback, this is a nogo on this test procedure. If OK respond to prompt accordingly, otherwise contact SRON to investigate and resolve before continuing.	OK				
7.	On HPCCS when all autonomous actions have been completed by the power on script H102999SCVT015_ASDISTHIFI_PWR_ON_P it will prompt: "Set Bus Profile Back to Original Setting?"	NO				

Enter Date Time:		Sign Off	TD:	PA:	Test Location:
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Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
8.	<p>Select YES if it is likely that other non-HIFI instrument related activities are to be performed.</p> <p><i>However note that if the original Bus Profile was 0 (launch) the script will automatically leave the Bus Profile unchanged as this profile is not compatible with instruments being powered in Standby:</i></p> <p>"Bus Profile left unchanged, as original setting 0 (Launch)"</p> <p>Select OK to continue</p>	OK				
9.	<p>If NO selected then at the prompt:</p> <p>"Bus Profile left unchanged"</p> <p>Select OK to continue</p>	OK				
10.	<p>Verify HK TM packets are being received on APIDs 1024 & 1026</p>	OK				
11.	<p>Start Active Cooling of HIFI Panel i.a.w. AD-2</p>	OK				

Enter Date Time:		Sign Off	TD:	PA:	Test Location:	
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Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
12.	Using TM Plot application on CCS start monitoring the temperature of the WBS lasers; parameters: HM062193 (HWV_Laser_T) & HM023193 (HWH_Laser_T). See Section 5.3.2.1 for details of this activity.	OK				
13.	HIFI Nominal powered and in Standby1 mode Return to calling procedure	OK				

Enter Date Time:		Sign Off	TD:	PA:	Test Location:
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7.3.3 HIFI Nominal Standby1 to OFF

The following procedure will switch HIFI Nominal from Standby1 to OFF.

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	Stop Active Cooling of HIFI Panel i.a.w. AD-2	OK				
2.	From the HPCCS test conductor console start the test script: Z102999SCVT015_ASDGEN_HIFIPWROFF_P	OK		14:36	✓	
3.	On HPCCS when prompted: "FM HIFI Switch OFF for IST or SFT in Hel/Hell conditions with warm LOU - Select NO to abort TS if not correct"	YES			✓	
	If in any doubt about the script being executed NO should be selected to abort the script. Before restarting consult the relevant instrument support engineer to confirm the correct script to be used for the test in question.				✓	
	If YES is selected the test script will go on to automatically power off all HIFI warm units.				✓	

Enter Date Time:	020500 14:36	Sign Off TD:	C. Much	PA:	R. Goossens	Test Location:	ESPEC
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Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
4.	On HPCCS when all autonomous actions have been completed by the power on script H102999SCVT016_ASDISTHIFI_PWR_OFF_P it will prompt: "Set Bus Profile Back to Original Setting?"	NO				
5.	Select YES if it is likely that other non-HIFI instrument related activities are to be performed. <i>However note that if the original Bus Profile was 0 (launch) the script will automatically leave the Bus Profile unchanged as this profile is not compatible with instruments being powered in Standby:</i> "Bus Profile left unchanged, as original setting 0 (Launch)"	OK			✓	
6.	If NO selected then at the prompt: "Bus Profile left unchanged" Select OK to continue	OK				

Enter Date Time:		Sign Off	TD: <i>C. Much</i>	PA: <i>R. Gross</i>	Test Location:	<i>ESTEC</i>
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Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
7.	On HPCCS stop Packet History displays for the following APIDs:1024,1026	OK				
8.	HIFI OFF Return to calling Procedure	OK			✓	

Enter Date Time:		Sign Off	TD: <i>C. Much</i>	PA: <i>R. Gossens</i>	Test Location:	<i>ESTEC</i>
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Issue: 1.2

Date: 25.04.08

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7.3.4 HIFI Redundant OFF to Standby1

The following will switch ON and configure HIFI Redundant instrument in Standby1 mode (Lasers OFF). HKTM packets will be generated on APIDs 1025 dec and 1027 decimal (these can be observed using TMPH with corresponding filter – note however a limited number of TMPHs should be running at one time).

During power on of HIFI a number of soft/hard OOLs are reported due to the sequential switch on of the units. Some of these are to be expected when in Hel conditions and the others are expected because the unit is typically cold at switch ON:

Parameters OOL when in Hel:

- HM248191 – HF_AP_2K_IF_CT
- HM243191 – HF_APR_SCCS_CT
- HM244191 – HF_APR_S10K_CT
- HM250191 – HF_AP_4K_END_CT

Parameters OOL expected to come back in limits when units warmed up:

- HM187192 – HRV_ACS_1_T
- HM188192 – HRV_AVS_2_T
- HM062192 – HRH_ACS_1_T
- HM063192 – HRH_AVS_2_T

Parameters OOL until HIFI powered in Standby1

- HD247194 – HL_ptv_checksum
- HM258194 – HL_MODE_S
- HM259194 – HL_error_word_S

Enter Date Time:			Sign Off	TD:	PA:	Test Location:	
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Issue: 1.2

Date: 25.04.08

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Some additional parameters may exhibit OOL during the test:

Parameters OOL expected during test but which should be monitored for duration of test (should be kept below 30degC to avoid HIGH-HIGHs being reported):

HM062193 – HWV_Laser_T

HM023193 – HWH_Laser_T

Parameter OOL expected during test but which need not be monitored:

HM022193 – HWH_CCD_T

HM061193 – HWV_CCD_T

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	On HPCCS start Packet History displays for the following APIDs:1025,1027	OK				
2.	From the HPCCS test conductor console start the test script: Z102999SCVT016_ASDGEN_HIFIPWRON_R	OK		ANDs HA000289 HA004289		
	If in any doubt about the script being executed NO should be selected to abort the script when prompted in the next step. Before restarting consult the relevant instrument support engineer to confirm the correct script to be used for the test in question.					

Enter Date Time:		Sign Off TD:	PA:	Test Location:	
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Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
3.	On HPCCS when prompted: "FM HIFI Switch ON for IST or SFT in Hel/Hell conditions with warm LOU - Select NO to abort TS if not correct"	YES				
	If YES is selected the test script will go on to automatically power on all HIFI warm units, force boot the DPU ASW and configure the instrument to Standby. NB: In principle the HIFI instrument support responsible shall be on hand to observe the status of HIFI. So he should be contacted before the next test step.					
4.	At prompt to record OBS_ID_per_hk during subsequent table readback commanding (which starts when OK is pressed); record value of HM003190 (typical reading = 9000xxxx hex), Note: at start & end value is 90000000 hex "Select OK to continue" Select OK	OK				

Enter Date Time:		Sign Off TD:	PA:	Test Location:
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Issue: 1.2

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Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
5.	Value of OBS_ID during table read commanding: HM003190			AND: HA000289		
6.	Request I-EGSE operator to run the command 'verifyreadback <OBSID>' from a terminal window (opened from the terminal icon ">_" at bottom left of HIFIEGSE workstation screen) using the <OBSID> retrieved in the previous step. If the word PASS does not appear on the screen at the end of the verifyreadback, this is a nogo on this test procedure. If OK respond to prompt accordingly, otherwise contact SRON to investigate and resolve before continuing.	OK				
7.	On HPCCS when all autonomous actions have been completed by the power on script H102999SCVT017_ASDISTHIFI_PWR_ON_R it will prompt: "Set Bus Profile Back to Original Setting?"	NO				

Enter Date Time:		Sign Off	TD:	PA:	Test Location:	
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Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
8.	<p>Select YES if it is likely that other non-HIFI instrument related activities are to be performed.</p> <p><i>However note that if the original Bus Profile was 0 (launch) the script will automatically leave the Bus Profile unchanged as this profile is not compatible with instruments being powered in Standby:</i></p> <p>"Bus Profile left unchanged, as original setting 0 (Launch)"</p> <p>Select OK to continue</p>	OK				
9.	<p>If NO selected then at the prompt:</p> <p>"Bus Profile left unchanged"</p> <p>Select OK to continue</p>	OK				
10.	<p>Verify HK TM packets are being received on APIDs 1025 & 1027</p>	OK				
11.	<p>Start Active Cooling of HIFI Panel i.a.w. AD-2</p>	OK				

Enter Date Time:			Sign Off	TD:	PA:	Test Location:	
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Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
12.	Using TM Plot application on CCS start monitoring the temperature of the WBS lasers; parameters: HM062193 (HWV_Laser_T) & HM023193 (HWH_Laser_T). See Section 5.3.2.1 for details of this activity.	OK				
13.	HIFI Redundant powered and in Standby1 mode Return to calling procedure	OK				

Enter Date Time:		Sign Off	TD:	PA:	Test Location:	
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7.3.5 HIFI Redundant Standby1 to OFF

The following procedure will switch HIFI Redundant from Standby1 to OFF.

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	Stop Active Cooling of HIFI Panel i.a.w. AD-2	OK				
2.	From the HPCCS test conductor console start the test script: Z102999SCVT017_ASDGEN_HIFIPWROFF_R	OK				
3.	On HPCCS when prompted: "EM HIFI Switch OFF for IST or SFT in Hel/Hell conditions with warm LOU - Select NO to abort TS if not correct"	YES				
	If in any doubt about the script being executed NO should be selected to abort the script. Before restarting consult the relevant instrument support engineer to confirm the correct script to be used for the test in question.					
	If YES is selected the test script will go on to automatically power off all HIFI warm units.					

Enter Date Time:		Sign Off TD:		PA:		Test Location:	
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Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
4.	On HPCCS when all autonomous actions have been completed by the power on script H102999SCVT018_ASDISTHIFI_PWR_OFF_R it will prompt: "Set Bus Profile Back to Original Setting?"	NO				
5.	Select YES if it is likely that other non-HIFI instrument related activities are to be performed. <i>However note that if the original Bus Profile was 0 (launch) the script will automatically leave the Bus Profile unchanged as this profile is not compatible with instruments being powered in Standby:</i> "Bus Profile left unchanged, as original setting 0 (Launch)"	OK				
6.	If NO selected then at the prompt: "Bus Profile left unchanged" Select OK to continue	OK				

Enter Date Time:		Sign Off TD:	PA:	Test Location:
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Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
7.	On HPCCS stop Packet History displays for the following APIDs:1025,1027	OK				
8.	HIFI OFF Return to calling Procedure	OK				

Enter Date Time:			Sign Off	TD:	PA:	Test Location:	
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Issue: 1.2

Date: 25.04.08

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7.3.6 HIFI Nominal Standby1 to Science (PRIME)

Running the following procedure will configure HIFI Nominal from STANDBY1 to Prime mode via Standby2 mode.

When in Prime mode, simulated science is started which will generate packets on APIDs 1028, 1029, 1030 & 1031. It should be noted that HPCCS does not acquire the science packets in SCOS but archives them into TMDUMP files instead. However, it will route the packets to the IEGSE if the link is enabled.

Note: Transitions above Standby1 are not considered for HIFI Redundant at present.

Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	From the HPCCS test conductor console start the test script to put HIFI into science from Standby1: Z102999SCVT020_ASDGEN_HIFISTBY1_2OPS_P	OK				
2.	On HPCCS when prompted: "Command HIFI from STANDBY1 via STANDBY2 to PRIME mode in Hel/Hell with WARM LOU - Select NO to abort TS if not correct" Select YES	YES				

Enter Date Time:		Sign Off	TD:	PA:	Test Location:	
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Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
3.	On HPCCS when prompted: "Bus profile left as HIFI PRIME while in Science Prime mode - OK to continue" Select OK	OK				
4.	HIFI Nominal in Science Prime Return to or synchronise with calling Procedure	OK				

Enter Date Time:			Sign Off	TD:	PA:	Test Location:	
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Doc. No: HP-2-ASED-TP-0206

Issue: 1.2

Date: 25.04.08

File: HP-2-ASED-TP-0206_Issue_1r2.Doc

7.3.7 HIFI Nominal Science (PRIME) to Standby1

Running the following procedure will configure HIFI from Science (Prime) to STANDBY1 via Standby2 mode. The transition from Standby2 to Standby1 switches off the WEV & WEH lasers. The active cooling from external GSE (see section 5.3.2.1 for details) should therefore be stopped.

Note: Transitions above Standby1 are not considered for HIFI Redundant at present.

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	From the HPCCS test conductor console start the test script to put HIFI in Standby1 from simulated Science: Z102999SCVT021_ASDGEN_HIFIOPS2_STBY1_P	OK		16:39	✓	
2.	On HPCCS when prompted: "Command HIFI from PRIME via STANDBY2 to STANDBY1 mode in Hel/Hell with WARM LOU - Select NO to abort TS if not correct" Select YES	YES			✓	

Enter Date Time:	3.5.08	16:35	Sign Off	TD:	PA: R. Boassens	Test Location:	ESTEC
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Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
3.	On HPCCS when prompted: "Bus profile left as HIFI PRIME, change manually after if required - OK to continue" Select OK	OK			✓	
4.	HIFI Nominal in Standby1 Return to or synchronise with calling Procedure	OK		16:37		

Enter Date Time:	16:37	Sign Off TD:	PA: R. Goossens	Test Location:	ESTEC
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7.3.8 HIFI I-EGSE Disconnection

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	From HPCCS Test Conductor console issue command to disconnect PACS I-EGSE disconnect HHIFIEGSE	DISCONNECTED		AND: SYS_PARS		
2.	If no longer required for other instrument activities, from the HPCCS test conductor console terminate the test script: ALL_SubscribeParams					
3.	Return to calling Procedure					

Enter Date Time:			Sign Off TD:	PA:	Test Location:	
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7.4 HIFI Instrument ICU Only Configuration Procedures

7.4.1 HIFI Nominal OFF to ICU ON

The following will switch ON and configure HIFI Nominal ICU. HKTM packets will be generated on APIDs 1024 dec and 1026 decimal (these can be observed using TMPH with corresponding filter – note however a limited number of TMPHs should be running at one time).

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	On HPCCS start Packet History displays for the following APIDs:1024,1026	OK				
2.	From the HPCCS test conductor console start the test script: Z102999SCVT014_ASDGEN_HIFIPWRON_P	OK		ANDs HA000289 HA004289		
3.	On HPCCS when prompted: "FM HIFI ICU Standalone Switch ON - Select NO to abort TS if not correct"	YES				

Enter Date Time:			Sign Off TD:	PA:	Test Location:	
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Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
4.	<p>On HPCCS when all autonomous actions have been completed by the power on script H102999SCVT009_ASDGENHIFI_ICU_ON_P it will prompt:</p> <p><i>"Set Bus Profile Back to Original Setting?"</i></p>	NO				
5.	<p>Select YES if it is likely that other non-HIFI instrument related activities are to be performed.</p> <p><i>However note that if the original Bus Profile was 0 (launch) the script will automatically leave the Bus Profile unchanged as this profile is not compatible with instruments being powered in Standby:</i></p> <p>"Bus Profile left unchanged, as original setting 0 (Launch)"</p> <p>Select OK to continue</p>	OK				
6.	<p>If NO selected then at the prompt:</p> <p>"Bus Profile left unchanged"</p> <p>Select OK to continue</p>	OK				

Enter Date Time:		Sign Off TD:		PA:		Test Location:	
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Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
7.	Verify HK TM packets are being received on APIDs 1024 & 1026	OK				
8.	HIFI Nominal ICU powered Return to calling procedure	OK				

Enter Date Time:		Sign Off	TD:	PA:	Test Location:	
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Doc. No: HP-2-ASED-TP-0206

Issue: 1.2

Date: 25.04.08

File: HP-2-ASED-TP-0206_Issue_1r2.Doc

7.4.2 HIFI Nominal ICU ON to OFF

The following procedure will switch HIFI Nominal ICU OFF.

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	From the HPCCS test conductor console start the test script: Z102999SCVT015_ASDGEN_HIFIPWROFF_P	OK				
2.	On HPCCS when prompted: "FM HIFI ICU Standalone Switch OFF - Select NO to abort TS if not correct"	YES				
	If in any doubt about the script being executed NO should be selected to abort the script. Before restarting consult the relevant instrument support engineer to confirm the correct script to be used for the test in question.					
	If YES is selected the test script will go on to automatically power off all HIFI warm units.					

Enter Date Time:		Sign Off	TD:	PA:	Test Location:	
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Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
3.	<p>On HPCCS when all autonomous actions have been completed by the power on script H102999SCVT010_ASDGENHIFI_ICU_OFF_P it will prompt:</p> <p><i>"Set Bus Profile Back to Original Setting?"</i></p>	NO				
4.	<p>Select YES if it is likely that other non-HIFI instrument related activities are to be performed.</p> <p><i>However note that if the original Bus Profile was 0 (launch) the script will automatically leave the Bus Profile unchanged as this profile is not compatible with instruments being powered in Standby:</i></p> <p><i>"Bus Profile left unchanged, as original setting 0 (Launch)"</i></p>	OK				
5.	<p>If NO selected then at the prompt:</p> <p><i>"Bus Profile left unchanged"</i></p> <p>Select OK to continue</p>	OK				

Enter Date Time:		Sign Off	TD:	PA:	Test Location:
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Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
6.	On HPCCS stop Packet History displays for the following APIDs:1024,1026	OK				
7.	HIFI OFF Return to calling Procedure	OK				

Enter Date Time:		Sign Off	TD:	PA:	Test Location:	
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Doc. No: HP-2-ASED-TP-0206

Issue: 1.2

Date: 25.04.08

File: HP-2-ASED-TP-0206_Issue_1r2.Doc

7.4.3 HIFI Redundant OFF to ICU ON

The following will switch ON and configure HIFI Redundant ICU. HKTM packets will be generated on APIDs 1025 dec and 1027 decimal (these can be observed using TMPH with corresponding filter – note however a limited number of TMPHs should be running at one time).

Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	On HPCCS start Packet History displays for the following APIDs:1025,1027	OK				
2.	From the HPCCS test conductor console start the test script: Z102999SCVT014_ASDGEN_HIFIPWRON_R	OK		ANDs HA000289 HA004289		
3.	On HPCCS when prompted: "FM HIFI ICU Standalone Switch ON - Select NO to abort TS if not correct"	YES				

Enter Date Time:			Sign Off	TD:	PA:	Test Location:	
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Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
4.	<p>On HPCCS when all autonomous actions have been completed by the power on script H102999SCVT011_ASDGENHIFI_ICU_ON_R it will prompt:</p> <p><i>"Set Bus Profile Back to Original Setting?"</i></p>	NO				
5.	<p>Select YES if it is likely that other non-HIFI instrument related activities are to be performed.</p> <p><i>However note that if the original Bus Profile was 0 (launch) the script will automatically leave the Bus Profile unchanged as this profile is not compatible with instruments being powered in Standby:</i></p> <p><i>"Bus Profile left unchanged, as original setting 0 (Launch)"</i></p> <p>Select OK to continue</p>	OK				
6.	<p>If NO selected then at the prompt:</p> <p><i>"Bus Profile left unchanged"</i></p> <p>Select OK to continue</p>	OK				

Enter Date Time:		Sign Off	TD:	PA:	Test Location:	
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Doc. No: HP-2-ASED-TP-0206

Issue: 1.2

Date: 25.04.08

File: HP-2-ASED-TP-0206_Issue_1r2.Doc

Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
7.	Verify HK TM packets are being received on APIDs 1025 & 1027	OK				
8.	HIFI Redundant ICU powered Return to calling procedure	OK				

Enter Date Time:			Sign Off	TD:	PA:	Test Location:	
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Doc. No: HP-2-ASED-TP-0206

Issue: 1.2

Date: 25.04.08

File: HP-2-ASED-TP-0206_Issue_1r2.Doc

7.4.4 HIFI Redundant ICU ON to OFF

The following procedure will switch HIFI Nominal ICU OFF.

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	From the HPCCS test conductor console start the test script: Z102999SCVT015_ASDGEN_HIFIPWROFF_P	OK				
2.	On HPCCS when prompted: "FM HIFI ICU Standalone Switch OFF - Select NO to abort TS if not correct"	YES				
	If in any doubt about the script being executed NO should be selected to abort the script. Before restarting consult the relevant instrument support engineer to confirm the correct script to be used for the test in question.					
	If YES is selected the test script will go on to automatically power off all HIFI warm units.					

Enter Date Time:			Sign Off	TD:	PA:	Test Location:	
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Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
3.	On HPCCS when all autonomous actions have been completed by the power on script H102999SCVT010_ASDGENHIFI_ICU_OFF_P it will prompt: <i>"Set Bus Profile Back to Original Setting?"</i>	NO				
4.	Select YES if it is likely that other non-HIFI instrument related activities are to be performed. <i>However note that if the original Bus Profile was 0 (launch) the script will automatically leave the Bus Profile unchanged as this profile is not compatible with instruments being powered in Standby:</i> <i>"Bus Profile left unchanged, as original setting 0 (Launch)"</i>	OK				
5.	If NO selected then at the prompt: <i>"Bus Profile left unchanged"</i> Select OK to continue	OK				

Enter Date Time:		Sign Off	TD:	PA:	Test Location:	
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Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
6.	On HPCCS stop Packet History displays for the following APIDs:1025,1027	OK				
7.	HIFI OFF Return to calling Procedure	OK				

Enter Date Time:			Sign Off	TD:	PA:	Test Location:	
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Doc. No: HP-2-ASED-TP-0206

Issue: 1.2

Date: 25.04.08

File: HP-2-ASED-TP-0206_Issue_1r2.Doc

7.4.5 HIFI Nominal ICU ON to Simulated Science

Running the following procedure will configure HIFI from ICU ON to Simulated Science mode.

Note HPCCS does not acquire the science packets in SCOS but archives them into TMDUMP files instead. However, it will route the packets to the IEGSE if the link is enabled.

Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	From the HPCCS test conductor console start the test script to put HIFI into simulated science: Z102999SCVT020_ASDGEN_HIFISTBY1_2OPS_P	OK				
2.	On HPCCS when prompted: "Command HIFI from ICU ON to Simulated Science mode in Hel/Hell conditions - Select NO to abort TS if not correct" Select YES	YES				

Enter Date Time:			Sign Off	TD:	PA:	Test Location:	
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Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
3.	On HPCCS when prompted: "Bus profile left as HIFI PRIME while in Science Prime mode - OK to continue" Select OK	OK				
4.	HIFI Nominal in Simulated Science Return to or synchronise with calling Procedure	OK				

Enter Date Time:			Sign Off	TD:	PA:	Test Location:	
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Doc. No: HP-2-ASED-TP-0206

Issue: 1.2

Date: 25.04.08

File: HP-2-ASED-TP-0206_Issue_1r2.Doc

7.4.6 HIFI Nominal Simulated Science (PRIME) to ICU ON

Running the following procedure will configure HIFI from Simulated Science (Prime) to ICU ON.

When in Prime mode, simulated science is started which will generate packets on APIDs 1028, 1029, 1030 & 1031. It should be noted that HPCCS does not acquire the science packets in SCOS but archives them into TMDUMP files instead. However, it will route the packets to the IEGSE if the link is enabled.

Note: Transitions above Standby1 are not considered for HIFI Redundant at present.

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	From the HPCCS test conductor console start the test script to HIFI Stop simulated Science: Z102999SCVT021_ASDGEN_HIFIOPS2_STBY1_P	OK				
2.	On HPCCS when prompted: "Command HIFI from Simulated Science mode to ICU ON in Hel/Hell conditions - Select NO to abort TS if not correct" Select YES	YES				

Enter Date Time:			Sign Off	TD:	PA:	Test Location:	
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Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
3.	On HPCCS when prompted: "Bus profile left as HIFI PRIME, change manually after if required - OK to continue" Select OK	OK				
4.	HIFI Nominal in ICU ON Return to or synchronise with calling Procedure	OK				


Enter Date Time:			Sign Off TD:	PA:	Test Location:	
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Doc. No: HP-2-ASED-TP-0206

Issue: 1.2


Date: 25.04.08

File: HP-2-ASED-TP-0206_Issue_1r2.Doc


	TRR Minutes Applicable H-P-TASF-MN- 10392.....	REF.: H-P-TASF-AS-RUN-LOG	
		HERSCHEL	
		DATE : 30-4-08	PAGE : 1 of
AS-RUN DOCUMENTS RAISED		PLACE : ESTEC	

TEST NAME: MODE TRANSITIONS	TEST CONDUCTOR: e. MUCH	
ACTIVITY CONTROL SHEET No's:		
Herschel Instrument Power ON-OFF and Mode Switching Proc HP-2-ASED-TP-0206 Iss. 1.2		
LEADING PROCEDURE (Title) Herschel IST Leading Procedure	Doc No HP-2-ASED-TP-0134	Issue 4.0
FUNCTIONAL PROCEDURE (Title) IST Test Case "Mode Transitions" Procedure	Doc No HP-2-ASED-TP-0189	Issue 2.0
Session ID/s 2008_04_30_03_32_heradm - REALTIME - MODE - TRAN 2008_04_30_16_50_heradm - hpws22 - REALTIME - MOD - TRA - 2		


PVS #	Raised against	Description (brief summary of reason document is raised)
PVS#1	TP-0189	Additional Test step to be incorporated (after step 7)
PVS#2	TP-0189	Correct unhealthy RCS branch (Step 20)
PVS#3	TP-0189	Script Problem, PACS OBCP recovery performed manually. (Step 27)
PVS#4	TP-0189	ACC detected in open Loop. (Close Loop expected)
PVS#5	TP-0206	(MOD.TRA-2) Insert Additional step (after step 3)
PVS#6	TP-0206	(MOD.TRA-2) Insert Additional Comments (Step 6)
PVS#2	TP-0189	(MOD.TRA-2) Procedure Update Step 27
PVS#3	TP-0189	(MOD.TRA-2) Avoid Loss of data after Night in standby (Step 32)
PVS#4	TP-0189	(MOD.TRA-2) Additional Comment required (step 38)
SPR #	Raised against	Description (same as SPR title)
504	TP0189	RCA Health Status unhealthy
507	TP0189	(MOD.TRA-2) Step 55
NCR #	Raised against	Description (same as NCR title)
4176	TP-0189	Test Aborted (test step 31)
2130	TP-0189	Target wheel speed not reached after 600s (Step 45)
4255	TP-0189	(MOD.TRA-2) test step 116

	TRR Minutes Applicable	REF.: H-P-TASF-AS-RUN-LOG	
	H-P-ASED-MN- <u>10392</u>	HERSCHEL	
		DATE : <u>30-4-08</u>	PAGE : <u>2</u> of
AS-RUN DOCUMENTS RAISED Continuation Sheet		PLACE : <u>Estee</u>	

PVS # / Raised against	Description (brief summary of reason document is raised)
PVS#7 TP-0189	(MOD.TRA-2) Missing Step in procedure (after step 57)
PVS#8 TP-0189	(MOD.TRA-2) Reconfigure STR (step 61)
PVS#37 TP-0189	(MOD.TRA-2) Step 64
PVS#9 TP-0189	(MOD.TRA-2) Stby OBCP not triggered (step 67)
PVS#38 TP-0189	(MOD.TRA-2) Step 90
PVS#10 TP0189	(MOD.TRA-2) To save the text data (Step 90) ^{after}
PVS#11 TP0189	(MOD.TRA-2) Workaround for Rx-2 Rate
PVS#12 TP0189	(MOD.TRA-2) Try to get TM to 5 kbps
PVS#13 TP0189	(MOD.TRA-2) Timing Problem (step 113)
PVS#14 TP-0189	(MOD.TRA-2) Dump Packet Store memory (step 116)
PVS#15 TP-0189	(MOD.TRA-2) Re-enable Thermal Control Loops (after step 115)
PVS#16 TP-0189	(MOD.TRA-2) Set STR-1 back to healthy state (after step 115)
PVS#17 TP-0189	(MOD.TRA-2) Procedure update (after step 115)
SPR # / Raised against	Description (same as SPR title)
NCR # / Raised against	Description (same as NCR title)

	TRR Minutes Applicable H-P-ASED-MN- <u>10392</u>	REF.: H-P-TASF-AS-RUN-LOG	
		HERSCHEL	
		DATE: <u>30-4-08</u>	PAGE: <u>3</u> of
AS-RUN DOCUMENTS RAISED Continuation Sheet		PLACE: <u>ESTEC</u>	

PVS # / Raised against	Description (brief summary of reason document is raised)
PVS#18 TP-0189	(MOD.TRA-2) Remove overdue TC's (step 119)
PVS#19 TP-0189	(MOD.TRA-2) Procedure update "config 25" after step 115
PVS#20 TP-0189	(MOD.TRA-2) Get RWL2 out of stiction region (step 131)
PVS#21 TP-0189	(MOD.TRA-2) Thermal (step 132)
PVS#22 TP-0189	(MOD.TRA-2) Check that all OBCP's are loaded (step 132)
PVS#23 TP-0189	(MOD.TRA-2) Set DFE uplink to 4K (step 132)
PVS#24 TP-0189	(MOD.TRA-2) HIFI to Standby (step 132)
PVS#25 TP-0189	(MOD.TRA-2) To prepare S/C for Alignment Activities (before step 134)
PVS#31 TP-0189	(MOD.TRA-2) Transition to SCM fails (step 131)
PVS#32 TP-0189	(MOD.TRA-2) Switch HIFI to Stdbby 1 (step 137)
PVS#33 TP-0189	(MOD.TRA-2) Change BUS profile (step 139)
PVS#34 TP-0189	(MOD.TRA-2) Upload EAT (step 146)
PVS#35 TP-0189	(MOD.TRA-2) Steps not deleted, but performed (step 156)
PVS#36 TP-0189	(MOD.TRA-2) Perform operator note 29 for "OBCP recovery" (after step 160)
SPR # / Raised against	Description (same as SPR title)
NCR # / Raised against	Description (same as NCR title)

	TRR Minutes Applicable	REF.: H-P-TASF-AS-RUN-LOG	
	H-P-ASED-MN- <u>10392</u>	HERSCHEL	
		DATE: <u>30-4-08</u>	PAGE: <u>4</u> of
AS-RUN DOCUMENTS RAISED Continuation Sheet		PLACE: ESTEC	

PVS # / Raised against	Description (brief summary of reason document is raised)
PVS#26 TP-0189	(MOD-TRA-2) NCR 4181
PVS#27 TP-0189	(MOD-TRA-2) NCR 4181
PVS#28 TP-0189	(MOD-TRA-2) NCR 4181 -continued
PVS#29 TP-0189	(MOD-TRA-2) TMTC DFE Problems
PVS#30 TP-0189	(MOD-TRA-2) Unclear MTL Status
PVS#31 TP-0189	(MOD-TRA-2) Transition to SCM fails (step 131)
PVS#32 TP-0189	(MOD-TRA-2) S
PVS#1 TP-0134	(MODE-TRAN) Required due s/c alignment
SPR # / Raised against	Description (same as SPR title)
NCR # / Raised against	Description (same as NCR title)

Attachment 1 to Section 6.1.3:

SPR/NCRs

SPR Formsheet

Nr.: 504	Date: 30-4-2008	Author: <i>Jelley</i>	Classification: RCS MINOR ACMS
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Test: MODE TRANSITIONS	Session ID: 2008_04_30_03_32_hercdmu_hpws22-REALTIME-MODE-TRAN	Subsystem: RCS ACMS
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Title: RCSA HEALTH STATUS UNHEALTHY

Type: (Script/Picture / Test structure):	Name: A102109SPVT034_ACMS_SAM_MON.tcl	Version: 1.29
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Problem description (to be filled by Test conductor (TC) / Test operator (TO)):

Time (UTC): 06:50 Step no: 20

AT STEP 20, WE RECEIVED AN RCSA HEALTH STATUS: UNHEALTHY ALARM
SEE REPORT LOG (5-PAGES)

Proposed solution (to be filled by TC / TO):

Review board decision (to be filled by TC, TO, QA plus Engineering / experts if required):

Implement as proposed: Reject:

Other: _____

Proposed rerun (Date / Test case): _____

Date:	Participants:
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Implemented: <input type="checkbox"/>	Code inspected: <input type="checkbox"/>
Confirmed by Test Conductor(s) / Experts to check-in: <input type="checkbox"/>	

Date:	Name:
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Close out (Functional team member & QA):

Verified during test case / ID: _____

Date:	Version:	Func. Team Name:
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Date:	QA:
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SPR Formsheet

Nr.: 505	Date: 30-4-2008	Author: C. Much	Classification:
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Test: MODE TRANSITIONS	Session ID: 2008_04_30_03_32_hrcdmu_hpws22-REALTIME-MODE-TRAN	Subsystem:
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Title: IST_PHCS_OBCP_recovery.tel^{can} not handle TM rate 500bps

Type: (Script/Picture /Test structure):	Name:	Version:
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Problem description (to be filled by Test conductor (TC) / Test operator (TO)):
 Time (UTC): Step no: 27
 The IST_PHCS_OBCP_recovery cannot handle the 500bps TM rate.

Proposed solution (to be filled by TC / TO):
 Adapt script to 500 bps.
 ↳ see new script for general OBCP recovery: Z010999 NCVT159-IST_OBCP.RECOVERY

Review board decision (to be filled by TC, TO, QA plus Engineering / experts if required):

Implement as proposed: Reject:

Other: _____

Proposed rerun (Date / Test case): _____

Date:	Participants:
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Implemented: <input checked="" type="checkbox"/>	Code inspected: <input type="checkbox"/>
Confirmed by Test Conductor(s) / Experts to check-in: <input type="checkbox"/>	

Date: 09/06/08	Name:
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Close out (Functional team member & QA):

Verified during test case / ID: _____

Date:	Version:	Func. Team Name:
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Date:	QA:
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SPR Formsheet

Nr.: 507	Date: 01.05.08	Author: O. Neerlin.	Classification:
Test: Node Transition	Session ID: 2008.04-30.16.50.hendma - ... (ND).TRAZ	Subsystem:	
Title: 2TC not uploaded in MTL + TN part check + Report			
Type: (Script/Picture / Test structure):	Name: D102159 SCVT 202 - IST-MTL-PING-TEST	Version:	
Problem description (to be filled by Test conductor (TC) / Test operator (TO)): Time (UTC): Step no: 55 ① In middle of Upload (11:52) 2TC have not been sent by CCS. ② TN check failure: due to MTL started too quickly.			
Proposed solution (to be filled by TC / TO): ① investigate log Trace with NCA. ② add delay before starting MTL (13mn delay).			
Review board decision (to be filled by TC, TO, QA plus Engineering / experts if required): Implement as proposed: <input type="checkbox"/> Reject: <input type="checkbox"/> Other: _____ Proposed rerun (Date / Test case): _____			
Date:	Participants:		
Implemented: <input type="checkbox"/>	Code inspected: <input type="checkbox"/>		
Confirmed by Test Conductor(s) / Experts to check-in:			<input type="checkbox"/>
Date:	Name:		
Close out (Functional team member & QA): Verified during test case / ID: _____			
Date:	Version:	Func. Team Name:	
Date:	QA:		

SPR Formsheet

Nr.: 508	Date: 01-05-08	Author: C. Much	Classification:
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Test: MODE TRANSITIONS	Session ID: 2008_04_30_16_Sa_heradm_v_hpws22_REALTIME_MOD_TRA2	Subsystem:
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Title: **Event 5-2 overdue TC Executed**

Type: (Script/Picture /Test structure):	Name: D1021585CVT170-IST-AN-NON-SA	Version: 1.12
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Problem description (to be filled by Test conductor (TC) / Test operator (TO)):

Time (UTC): Step no: **30**

Due to stopping the MTL during NOM-FHM and starting again during NOM to SM, many 5.2 events "overdue TC Executed" are seen.

Proposed solution (to be filled by TC / TO):

Delete the overdue TC before starting the MTL again.

add TC DC82E170

Review board decision (to be filled by TC, TO, QA plus Engineering / experts if required):

Implement as proposed: Reject:

Other: _____

Proposed rerun (Date / Test case): _____

Date:	Participants:
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Implemented: <input type="checkbox"/>	Code inspected: <input type="checkbox"/>
Confirmed by Test Conductor(s) / Experts to check-in: <input type="checkbox"/>	

Date: 09/06/08	Name: [Signature]
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Close out (Functional team member & QA):

Verified during test case / ID: _____

Date:	Version:	Func. Team Name:
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Date:	QA:
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SPR Formsheet

Nr.: 509	Date: 01-05-08	Author: B. HOGG	Classification:
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Test: MODE TRANSITIONS	Session ID: 2008-04-30-16-50 - hercdm u - hpsw22 - REALTIME - MOD - TRAZ	Subsystem:
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Title: UNABLE TO PERFORM MULTI DUMPS

Type: (Script/Picture /Test structure):	Name: D102159SCVT188-1ST-DUMP-PKT-STORE	Version: 1.14
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Problem description (to be filled by Test conductor (TC) / Test operator (TO)):
Time (UTC):
Step no:

THE MULTIPLE DUMP OPTIONS WITHIN THE SCRIPT WHICH HAS BEEN LOCALLY MODIFIED TODAY ONLINE DOES NOT RUN. THERE IS NO RELATED SPR FOR THIS MODIFICATION TO BE FOUND. UNABLE TO REVERT TO AN OLDER VERSION DUE TO THIS PATCH. PERFORMING MANUAL SINGLE DUMPS OF PKTS.

Proposed solution (to be filled by TC / TO):

Assigne input as "string" instead integer to allow many inputs.

Review board decision (to be filled by TC, TO, QA plus Engineering / experts if required):

Implement as proposed: Reject:

Other: _____

Proposed rerun (Date / Test case): _____

Date: 02.05.08	Participants:
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Implemented: <input checked="" type="checkbox"/>	Code inspected: <input type="checkbox"/>
Confirmed by Test Conductor(s) / Experts to check-in:	<input checked="" type="checkbox"/> 1.15

Date: 02.05.08	Name:
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Close out (Functional team member & QA): VERIFIED DURING PREP 4 ALIGNMENT START OF NIGHT SHIFT 20:45

Verified during test case / ID: IST1 - PART-1-TP-0189-1533-MODE-TRANSITIONS - END - 003

Date: 02-05-08	Version: 1.15	Func. Team Name:
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Date: 02-05-08	QA: B. HOGG
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SPR Formsheet

Nr.: 510	Date: 01-05-08	Author: B. HOGG	Classification:
Test: MODE TRANSITIONS	Session ID: 2008-04-30-16-50-harcadmu - wpsw22 - REALTIME - MOD - TRAZ	Subsystem:	
Title: UNABLE TO DUMP FROM TEXT STRING LOCATIONS			
Type: (Script/Picture /Test structure):	Name: D102159SCRIPT188-IST.DUMP-PRG-STORE	Version: 1.14	
Problem description (to be filled by Test conductor (TC) / Test operator (TO)): Time (UTC): Step no: UNABLE TO ENTER TEXT STRING LOCATIONS OF MEMORY TO DUMP FROM. THE SCRIPT ONLY ALLOWS NUMBERS TO PERFORM THE DUMP OPERATIONS. CELA + CELB			
Proposed solution (to be filled by TC / TO):			
Review board decision (to be filled by TC, TO, QA plus Engineering / experts if required): Implement as proposed: <input checked="" type="checkbox"/> Reject: <input type="checkbox"/> Other: _____ Proposed rerun (Date / Test case): _____			
Date: 02.05.08	Participants: [Signature]		
Implemented: <input checked="" type="checkbox"/>	Code inspected: <input type="checkbox"/>		
Confirmed by Test Conductor(s) / Experts to check-in:			<input checked="" type="checkbox"/> 1.15
Date: 02.05.08	Name: [Signature]		
Close out (Functional team member & QA): ^{verified} DURING PRG 4 ALIGNMENT, START OF NIGHT SHIFT 20:44			
Verified during test case / ID: IST1 - PART-1 - TP - 0189 - ISS3 - MODE - TRANSITIONS - END - 003			
Date: 02-05-08	Version: 1.15	Func. Team Name: [Signature]	
Date: 02-05-08	QA: B. HOGG [Signature]		

SPR Formsheet

Nr.: 511	Date: 02-05-2008	Author: C. Much	Classification:
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Test: MODE TRANSITIONS	Session ID: 2008_04_30_16_hercdmu-hpws22_REALTIME -MOD-TRA_2	Subsystem:
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Title: DC82F170 does not delete all TCs in MTL

Type: (Script/Picture /Test structure):	Name:	Version:
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Problem description (to be filled by Test conductor (TC) / Test operator (TO)):
Time (UTC): Step no: 116. Preparation for EAG to SAN.
When sending the TC [DC82F170] "Delete TCs over time period" only about 100 TCs are deleted.

DC82F170 Parameters

~~Proposed solution (to be filled by TC/TO):~~ 2008.121.08.00.00.000
2008.123.08.00.00.000

subchedule ID: 0
NRepetition: 5
#PID CBMS, HCMS, HIFL_N, PHCS_N, SPIRE_N
= NCR-4255

Review board decision (to be filled by TC, TO, QA plus Engineering / experts if required):

Implement as proposed: Reject:

Other: _____

Proposed rerun (Date / Test case): _____

Date:	Participants:
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Implemented: <input type="checkbox"/>	Code inspected: <input type="checkbox"/>
Confirmed by Test Conductor(s) / Experts to check-in:	<input type="checkbox"/>

Date:	Name:
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Close out (Functional team member & QA):

Verified during test case / ID: _____

Date:	Version:	Func. Team Name:
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Date:	QA:
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SPR Formsheet

Nr.: 512	Date: 02-05-2008	Author: C. Much	Classification:
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Test: MODE TRANSITIONS	Session ID: 2008_09_30_16_hercdmu-hpws22_REACTING -MOD-TRA_2	Subsystem:
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Title: Missing TCL proc "H-OBDB_setup_for_SIT"

Type: (Script/Picture /Test structure):	Name: 200999ACT100_I5T-Mode-TRANSITION.	Version: 1.16
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Problem description (to be filled by Test conductor (TC) / Test operator (TO)):
 Time (UTC): Step no:
 TCL proc "H-OBDB_setup_for_SIT" should be called after any ~~any~~ transition when back in "S#M".

Proposed solution (to be filled by TC / TO):
 To implement as proposed by call A102109SPVT087-ACRS-I5T.FM "obdb"

Review board decision (to be filled by TC, TO, QA plus Engineering / experts if required):

Implement as proposed: Reject:

Other: _____

Proposed rerun (Date / Test case): _____

Date:	Participants:
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Implemented: <input checked="" type="checkbox"/>	Code inspected: <input checked="" type="checkbox"/>
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Confirmed by Test Conductor(s) / Experts to check-in:	<input checked="" type="checkbox"/> 1.16
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Date: 09/06/08	Name: <i>[Signature]</i>
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Close out (Functional team member & QA):

Verified during test case / ID: _____

Date:	Version:	Func. Team Name:
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Date:	QA:
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SPR Formsheet

Nr.: 513	Date: 02-05-2008	Author: C-MUCH	Classification:
Test: MODE TRANSITIONS	Session ID: 2008_04_30_16_hercdmu-hpws22_REALTIME -MOD-TRA_2	Subsystem:	
Title: Not possible to switch HIFI on in STBY			
Type: (Script/Picture /Test structure):	Name:	Version:	
Problem description (to be filled by Test conductor (TC) / Test operator (TO)): Time (UTC): Step no: 132 It was not possible to switch HIFI into STBY mode. This seems to be related to CCS problems.			
Proposed solution (to be filled by TC / TO): set the dfe uplink to the correct 4Kbps.			
Review board decision (to be filled by TC, TO, QA plus Engineering / experts if required): Implement as proposed: <input type="checkbox"/> Reject: <input type="checkbox"/> Other: _____ Proposed rerun (Date / Test case): _____			
Date:	Participants:		
Implemented: <input type="checkbox"/>	Code inspected: <input type="checkbox"/>		
Confirmed by Test Conductor(s) / Experts to check-in:			<input type="checkbox"/>
Date:	Name:		
Close out (Functional team member & QA): Verified during test case / ID: _____			
Date:	Version:	Func. Team Name:	
Date:	QA:		

SPR Formsheet

Nr.: 514	Date: 31/5/08	Author: S. HAMER	Classification: MINOR
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Test: NIA	Session ID: NIA	Subsystem: SARG
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Title: Import new SPIRE test scripts for EMC RE Tests

Type: (Script/Picture /Test structure):	Name: SPIRE-IST-EMC-RE-PHOTOS2STBY SPIRE-IST-EMC-RE-STBY2PHOTOS	Version: N/A
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Problem description (to be filled by Test conductor (TC) / Test operator (TO)):
Time (UTC): N/A Step no: N/A
New scripts required to bring SPIRE to/from noisest mode for EMC RE tests.

Proposed solution (to be filled by TC / TO):
Install scripts

Review board decision (to be filled by TC, TO, QA plus Engineering / experts if required):
Implement as proposed: Reject:
Other: _____
Proposed rerun (Date / Test case): End of IST Mode Transitions

Date: 31/5/08	Participants: S. Hamer
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Implemented: <input checked="" type="checkbox"/>	Code inspected: <input checked="" type="checkbox"/>
Confirmed by Test Conductor(s) / Experts to check-in:	<input checked="" type="checkbox"/>

Date: 31/5/08	Name: S. Hamer
---------------	----------------

Close out (Functional team member & QA):
Verified during test case / ID: 2008_05_08_04_12_heredmb_hpws22_REALTIME EMC RE 08/05/08 SPIRE noisest EMC-RE

Date: 03/05/08	Version: 1.1.	Func. Team Name: HAMER
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Date:	QA:
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SPR Formsheet

Nr.: 515	Date: 03-05-2008	Author: O. Hertin	Classification:
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Test: MODE TRANSITIONS (2b)	Session ID: 2008-05-03_08_07_hercdmu_hpws22 -REALTIME-MOD_TRA-3	Subsystem:
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Title: Unexpected behaviour of XPND

Type: (Script/Picture /Test structure):	Name:	Version:
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Problem description (to be filled by Test conductor (TC) / Test operator (TO)):
 Time (UTC): 12h. 11. 51 Step no: 123
 During preparation, ~~the~~ an unexpected TC TTC command xpnd on has been sent and reconfigure TTC fully with xpnd t, EPCT, TWTA t on & inuse. (XPND t units are declared as Failed) According to G. Beaufils, this behaviour is not expected => raise NCR
No NCR required

Proposed solution (to be filled by TC / TO):
 False SPR => correct ~~the~~ Behaviour when XPND t units are not declared Failed anymore (The Transition SR to SR (Survival Probe) reinitialised Unit States as "not Failed")

Review board decision (to be filled by TC, TO, QA plus Engineering / experts if required):

Implement as proposed: Reject:

Other: _____

Proposed rerun (Date / Test case): _____

Date: 18/06/08	Participants:
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Implemented: <input type="checkbox"/>	Code inspected: <input type="checkbox"/>
Confirmed by Test Conductor(s) / Experts to check-in: <input type="checkbox"/>	

Date:	Name:
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Close out (Functional team member & QA):

Verified during test case / ID: N/A. With above description this SPR is considered closed ("withdrawn")

Date:	Version:	Func. Team Name:
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Date: 190608	QA: R. Goossens
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18:57

SPR Formsheet

Nr.: 516	Date: 17:00 03-05-2008	Author: C. Much	Classification:
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Test: MODE TRANSITIONS (2b)	Session ID: 2008_05_03_08_07_hercdmu_hpws22 -REALTIME-MOD_TRA_3	Subsystem:
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Title: NST STATUS 5.8.5.17 wrong ~~RFDN~~ TX configuration

Type: (Script/Picture /Test structure):	Name:	Version:
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Problem description (to be filled by Test conductor (TC) / Test operator (TO)):
 Time (UTC): Step no:
 The TX chain selection configuration is not correctly returned to full nominal RFDN setting not correct.

Proposed solution (to be filled by TC / TO):

Review board decision (to be filled by TC, TO, QA plus Engineering / experts if required):

Implement as proposed: Reject:

Other: _____

Proposed rerun (Date / Test case): _____

Date:	Participants:
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Implemented: <input type="checkbox"/>	Code inspected: <input type="checkbox"/>
Confirmed by Test Conductor(s) / Experts to check-in:	<input type="checkbox"/>

Date:	Name:
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Close out (Functional team member & QA):

Verified during test case / ID: _____

Date:	Version:	Func. Team Name:
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Date:	QA:
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SPR Formsheet

Nr.: 517	Date: 18:08 03-05-2008	Author: C. Much	Classification:
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Test: MODE TRANSITIONS (2b)	Session ID: 2008_05_03_08_07_hercdmu_hpw522 -REALTIME-MOD-TRA-3	Subsystem:
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Title: Reset of CIR missing

Type: (Script/Picture /Test structure):	Name: D102159 SCVT 173-1ST-MM-EHLSH	Version: M 17
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Problem description (to be filled by Test conductor (TC) / Test operator (TO)):
Time (UTC): Step no:
~~CIR was not reset in #102109SPVT027-#CMS-1ST-FN~~
CIR should only be set for 14 sec.

Proposed solution (to be filled by TC / TO):
No implement as proposed

Review board decision (to be filled by TC, TO, QA plus Engineering / experts if required):

Implement as proposed: Reject:

Other: _____

Proposed rerun (Date / Test case): _____

Date:	Participants:
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Implemented: <input checked="" type="checkbox"/>	Code inspected: <input checked="" type="checkbox"/>
Confirmed by Test Conductor(s) / Experts to check-in:	<input checked="" type="checkbox"/> 19

Date: 05/06/08	Name: <i>[Signature]</i>
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Close out (Functional team member & QA):

Verified during test case / ID: _____

Date:	Version:	Func. Team Name:
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Date:	QA:
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SPR - 5 18

is currently missing

Attachment 1 to Section 6.1.x:

MOMs

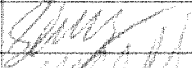






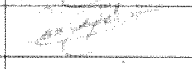



Minutes of Meeting IST Test Readiness
Review, part 2, 23/01/08, H-P-TASF-MN-9960

MINUTES OF MEETING

PLACE : System Meeting Room

PURPOSE :
IST Test Readiness Review/TRR Closeout Board

CLASSIFICATION :

ATTENDEES	FIRM	SIGNATURE	ATTENDEES	FIRM	SIGNATURE
S Mooney	TASF		O. Martin	ASED	
J. Hall	TASF		C. Much	ASED	
M. Priestley	TASF		M.Oort	TASF	
J. Vandenhove	TASF		P.Couzin	TASF	
A. Gatti	ESA		G. Beauflis	TASF	
J.Huesler	ESA		R. Reutemann (PT)	ESA	
WRITTEN BY : J. Hall			Chair: A. Knight		

CONCLUSION :

All major issues have been reviewed and all open work is listed in the test release sheet.

With the closure of the test release sheet the TRR will reconvene to verify and give approval for the start of the test.


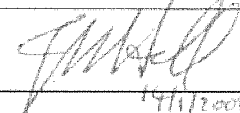
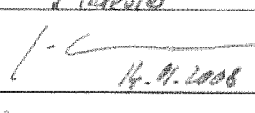
Given the current incomplete status of the spacecraft, TAS-F agreement of the TRR minutes provides confirmation and authorisation to perform the IST1 part 1 tests in the current configuration.


Deviations from the requirements specification resulting from the open NCRs as listed in this TRR minutes are accepted by this TRR for IST1 part 1.

The TRR closeout board concludes that with the closure of the open work items and the formal issue of the procedures, the IST 1 part 1 tests: 'mode transitions', 'ACMS commissioning' and 'Satellite Commissioning' can commence


DISTRIBUTION:	FOR FURTHER ACTION:	See MoM and action item table at end of minutes
	FOR INFORMATION:	ASED : R HOHN, M MUELLER, M. KOLLE, J KROEKER, W FRICKE, R STRITTER, R. VASCOTTO TAS-F : A KNIGHT, P COUZIN, B COLLAUDIN, F SAUVAGE, Y ROCHE, D MONTET, JM REIX, T GRASSIN, J.VANDERHOVE

APPROVED BY


NAME	Schm Mooney J. Hall	ESA J. Huesler	
SIGNATURE	 14/01/08	 14/01/2008	 14.01.2008

	REF.: H-P-TASF-MN-9960	
	HERSCHEL FM	
	DATE : 08/01/08	PAGE : 2 of 91
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	ACTION
<p><u>Introduction</u></p> <p>The following TRR shall assess the go ahead status for the Herschel IST 1 part 1 tests.</p> <p>Previous Meeting</p> <p>IST Pre TRR meeting H-P-TASF-MN-9959 IST procedure evaluation meeting H-P-TASF-MN-9992</p> <p>Agenda:</p> <ol style="list-style-type: none"> 1. Identification of Test Item 2. Inspection Status 3. NCR/RFD status 4. Open work/Open Action 5. Test procedure/Timeline 6. Safety Hazards and Hazardous operations 7. Test equipment/Facility and Calibration Status 8. Cleanliness 9. Test Personnel and Responsibilities 10. Problem Areas 11. AOB 12. Conclusion <p>Test Cases to be executed for IST 1 part 1:</p> <ul style="list-style-type: none"> • Launch sequence • Launch Sequence Robustness • Launch Clean Run • Mode Transitions • Satellite commissioning • ACMS Commissioning 	
<p style="text-align: center;">Identification of Test Item</p> <p>As Designed</p> <ul style="list-style-type: none"> • S/C CIDL Herschel S/C CI#100000 CIDL: H-P-2-ASP-LI-1054 iss.1 <p>As Built H-EPLM Integration Status List</p>	

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<p>ASED PLM ISL: HP-2-ASED-LI-0033 Status 11.12.2007 See Annex 3</p> <p>SVM Integration Status List</p> <p>ASED SVM ISL: HP-2-ASED-LI-0033 Status 19.12.2007 See Annex 4</p> <p>The above were produced for this TRR review</p> <p>SW Configuration</p> <ul style="list-style-type: none"> • CDMS V 3.1.3 • ACMS V 3.7 • HPSDB V 6 <p>- The HPSDB must be updated prior to the execution of the IST1 part 1 tests. Version 6 of the HPSDB shall be loaded following go ahead from an IRR. This IRR shall be held 11/1/2008</p> <p>Open Work</p> <p>The IST specification expects a fully integrated spacecraft. Current deviations from this status are:</p> <ul style="list-style-type: none"> • Listed in Annex 1 <p>The TRR states that the proposed configuration is acceptable for the execution of the IST1 part 1 tests.</p> <p>The CCU will be disconnected during the IST1 part 1 tests due to the ongoing bake-out operation. It shall be identified whether the sensors shall be left open or connected to GSE during the test. The valves activation TASF require the signals to be monitored. A procedure shall be provided to cover this within the launch sequences will require a test box connection. This shall be validated by TAS-F</p> <p>Open Work</p>	
Inspection Status	

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<p>Before the test commences, a 4eye inspection shall be performed by the test conductor and QA responsible.</p> <p>Open work</p>	
<p style="text-align: center;">NCR/RFD status</p> <p>The following NCRs were considered blocking for the IST1 part 1 tests as identified in the Pre-TRR status meeting minutes H-P-TASF-MN-9959. These minutes also identify the NCRs that should be closed by these tests.</p> <p>NCR3472: It is proposed that the flight battery shall be used for launch clean run. An NRB with system power team shall be performed prior to execution of the Launch clean run to validate the approach. This NCR is considered not an issue for the other launch scenarios. An NRB is planned for 15/1/2008 This is a blocking NCR</p> <p>NCR 3821/3842: ACMS memory dump issues. This should be corrected with the new release of the BSW which should be delivered as part ACMS 3.8. NRB decision is to skip the parts of the test during the IST1 part 1 testing. This is not a blocking NCR</p> <p>NCR2998: Incorrect connector It is mandatory that this pin swap is performed prior to any launch test case. It is the recommendation of the TRR that the night shift be used for this (14/1/2008) This is a blocking NCR</p> <p>NCR3769: Incorrect TC in HPSDB There is an HPSDB NCR review ongoing at TAS-F. It is believed that this may be resolved in version 6 of the HPSDB. This impacts the loading of the OBCP. Therefore this does not block fully the execution of the test, but if not resolved, it shall impact the OBCP part of each test case. This is not a blocking NCR</p> <p>NCR3483: Missing calibration curve Believed to be solved in HPSDB issue 6. This will be verified during the SFT. The TRR decision is to leave the workaround for this NCR in place during IST1 part 1. This is not a blocking NCR</p> <p>NCR 3749: OBCP and payload EAT missing There is an HPSDB NCR review ongoing at TAS-F. It is believed that this</p>	

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<p>may be resolved in version 6 of the HPSDB. This impacts the loading of the OBCP. Therefore this does not block fully the execution of the test, but if not resolved, it shall impact the OBCP part of each test case. This is not a blocking NCR</p> <p>NCR 3492: Mass memory errors NCR is still open. An NRB must be held with TAS-I to determine the status of this NCR. This is not a blocking NCR</p> <p>Non Critical NCRs</p> <p>NCR 3195: Unexpected reconfiguration of the CDMS. Modification have been made to close this NCR and a retest has been performed. This will be closed after the IST1 part 1 if the anomaly no longer occurs</p> <p>NCR 3419: Unknown packets after OBCP triggering Should be resolved with HPSDB version 6. Not foreseen to be seen during IST 1 part 1 as no OBCPs should be triggered</p> <p>NCR 3458: COCOS Memory dump This NCR covered by NCR 3842</p> <p>NCR 3834: OBCP upload problems There is an HPSDB NCR review ongoing at TAS-F. It is believed that this may be resolved in version 6 of the HPSDB. This impacts the loading of the OBCP. Therefore this does not block fully the execution of the test, but if not resolved, it shall impact the OBCP part of each test case.</p> <p>Version 6 of the HPSDB has been used on Planck and the raised NCRs have seen to be resolved.</p> <p>AIT shall verify that the OBCP loading sequence is correct for the version 6 HPSDB. Open Work</p>	
Open work/Open Action	

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<p>Open Actions From IST Progress Review:</p> <p>AI#2: Closed. SM to contact M.Langfermann. During the bake-out it will not be possible to connect to the CCU.</p> <p>AI#3: Open.</p> <ul style="list-style-type: none"> • TAS-F (AK) to confirm the as built configuration for the test related to heaters and thermistors. • AIT (CM) shall then modify the test configuration table to disable the appropriate lines. • The configuration file for SW version 3.1.3 is not yet available at ASSED. ASSED (OM) shall organise the preparation of the file or alternative means. <p>Open Work</p> <p>AI#4: Open Evaluation is ongoing. This is not a prerequisite for the IST1 part 1 test to commence.</p> <p>AI#7: Open These are not covered in issue 6 of the IST Specification. ASSED (CM) will ensure TAS-F (GB) has the latest version of the NCR. TAS-F will evaluate and, if there are no issues with the NCR, the NCR shall be deemed as applicable for the IST1 part 1 tests. TAS-F (JV) shall coordinate this.</p> <p><u>Open Actions from IST Pre-TRR (H-P-TASF-MN- 9959)</u></p> <p>AI#1: Open Agreed</p> <p>AI#2: Open Requested from TAS-I. This only affects the launch clean run procedure. TAS-I are providing engineering support to connect and commission the battery prior to the required IST1 part 1 test.</p> <p>Open Work</p> <p>AI#3: Closed NCR reviews held for CDMS, ACMS and CCS. Of the 32 identified, 8 are seen as blocking.</p> <p>AI#4: Closed ESA state that formal deviations shall only be raised for permanent deviations. For non permanent deviations the TRR shall contain a deviation list.</p> <p>AI#5: Closed</p>	
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<p>The configuration status is included in these minutes</p> <p>AI#6: Open ASED (JM) has established a problem reporting mechanism for use in the test campaigns. ASED shall organise that all testers are familiar with the mechanism to use. Open Work</p> <p>AI#7 Closed Battery is only required for Launch clean run</p> <p>AI#8: Closed Shift pattern generated. See attached</p> <p><u>Open Actions from IST TRR Progress Meeting (H-P-TASF-MN- 9992)</u></p> <p>AI#1: Open Satellite commissioning still to be provided.</p> <p>AI#2: Closed A deviation list has been raised and is attached in Annex 1</p> <p>AI#3: Closed Updated in test procedure</p> <p>AI#4: Closed Launch locks tests shall only be performed if not performed before. It must be performed after each spacecraft movement. The test is not currently within the procedures The TRR agrees that the launch lock tests shall be skipped for IST1 part1. TAS-F (AK) shall inform Instruments teams to the current situation.</p> <p>AI#5: Closed A deviation list has been raised and is attached in Annex 1</p> <p>AI#6: Open Ongoing</p> <p>AI#7: Closed</p> <p>AI#8: Closed A deviation list has been raised and is attached in Annex 1</p> <p>AI#9: Open</p>	
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<p>Ongoing</p> <p>AI#10: Closed</p> <p>AI#11: open Ongoing. This shall be created by TAS-F (JV)</p> <p>Other Issues An NCR exists covering the issue that the status of the use of the redundant TCS side is unknown. The status of this NCR shall be verified. The test cases for IST1 part 1 do not use the redundant side. A script shall be made available to control the heaters in case of spurious FDIR event (CM). Open Work</p>	
Test procedure/Timeline	
<p>Requirement Specification Preparation for the IST1 part 1 has been made towards issue 5 of the IST specification. Issue 6 of the IST specification is in preparation (signed by TAS-F). The TRR states that the baseline for the IST1 part 1 testing is issue 5 of the IST specification plus amendments highlighted in NCR 3693. The Specification is unclear in the issue relating to the test cases in which the flight battery is used (section 5.7.6). It is agreed that only the 2 sequences listed will use the flight battery (Launch clean run & routine Mission scenario).</p> <p>The TRR agrees that this baseline is suitable for the IST1 part 1 tests to be performed.</p> <p>The IST specification reference document, spacecraft IST system requirement verification document does not exist. TAS-F are in the process of finalising the document. This must be tracked in future TRRs.</p> <p>Procedures</p> <p>The following procedures shall be executed for IST1 part 1 in the following order:</p> <p>Without flight battery:</p> <ul style="list-style-type: none"> • Mode Transition (H-P-ASED-TP-0189 iss 1.0) • ACMS Commissioning (H-P-ASED-TP-0187 iss 1.0) • Satellite Commissioning (H-P-ASED-TP-0186 iss 1.0) 	

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<ul style="list-style-type: none"> • Nominal Launch sequence (H-P-ASED-TP-0193 iss 1.0) • Launch robustness (H-P-ASED-TP-0195 iss 1.0) <p>With flight battery:</p> <ul style="list-style-type: none"> • Launch clean run(H-P-ASED-TP-0194 iss 1.0) <p>Documents are in process of being reviewed. Initial comments have been supplied to ASED.</p> <p>TASF system engineering and TASF Test director shall be placed on the front sheet as part of the approval and signature cycle</p> <p>Leading Procedure and mode Transition shall be reviewed and finalised by 11/1/2008 to have these two documents ready for start of IST1 part 1 tests on 14/1/2008.</p> <p>Other procedures shall be reviewed and approved in rolling reviews.</p> <p>The battery conditioning procedure is required prior to Launch clean run.</p> <p>For the set up of the oscilloscope for the evaluation of spurious CCU latch signals the predefined ACS shall be used.</p> <p>For Mode Transitions, only sections up to and including SAM to NOM (5.8.5.7) shall be executed as the remaining tests require He II.</p> <p>For Satellite commissioning, section 5.8.3.8 (CCU Commissioning) shall not be performed as He II is required.</p> <p>It is confirmed that the procedures which use the real RF link are to be executed in AD mode.</p> <ul style="list-style-type: none"> • ACMS Commissioning • Spacecraft Commissioning • Launch clean run • Launch sequence • Launch mode robustness <p>Timeline:</p> <p>11/1/2008:</p> <ul style="list-style-type: none"> • CCB (IST_start & Mode_transitions) • HPSDB iss 6 IRR <p>14/1/2008</p>	
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<ul style="list-style-type: none"> • HPSDB v 6 update • Debug IST_START • Create CVS Tag • Execution of Mode_transitions • Issue of ACMS_Commissioning test procedures • NCR rework of connector (night shift) • Replay session to gather log data (night shift) <p>15/1/2008</p> <ul style="list-style-type: none"> • ACMS_Commissioning • Issue of Satellite_Commissioning test procedures • Replay session to gather log data (night shift) • IRR for battery connection <p>16/1/2008</p> <ul style="list-style-type: none"> • Satellite_Commissioning • Issue of Nominal_launch_sequence test procedures • Replay session to gather log data (night shift) • Key point meeting for Launch clean run <p>17/1/2008</p> <ul style="list-style-type: none"> • Nominal_launch_sequence • Issue of launch_robustness test procedures • Replay session to gather log data (night shift) • Battery Commissioning/charging <p>18/1/2008</p> <ul style="list-style-type: none"> • launch_robustness • Issue of launch_clean_run test procedures • Battery installation (night shift) • Replay session to gather log data (night shift) <p>19/1/2008</p> <ul style="list-style-type: none"> • launch_clean_run <p>21/1/2008</p> <ul style="list-style-type: none"> • Disconnect Battery • Replay session to gather log data (night shift) 	
Safety Hazards and Hazardous operations	

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<p>Battery connection: Covered by a separate IRR Open Work (Launch clean run)</p> <p>Valve opening for launch sequence: Input required from Cryo team Not performed for IST1 part 1, contained in the deviation list</p> <p>IST 1 part 1 procedures will be performed in parallel with the Cryostat bake-out. At no point during these test cases will the instruments be switched on.</p> <p>Emergency Switch off procedure: New switch off procedure shall be prepared prior to execution of the tests Open Work</p>	
<p style="text-align: center;">Test equipment/Facility and Calibration Status</p> <p>Monitoring of cyro cover open line The TRR agrees in principle that an oscilloscope can be connected during the IST1 part 1 launch sequence test to monitor for spurious signals on NCA line. The setup is defined in ACS for cryo cover opening test. See attached ACS. The actual agreement to proceed shall be given after discussions with the floor manager. The setup of this is Open Work for Launch Sequences.</p> <p>Calibration status of equipment It was noted that the calibrated equipment within the Herschel EGSE requires recertification. This is currently planned at the end of January 2008 where any anomalies reported will be assessed for impact on the test. It was agreed to proceed at risk. See Annex 2</p>	
<p style="text-align: center;">Cleanliness</p> <p>Test will be performed in the class 100000 Hydra area.</p>	
<p style="text-align: center;">Test Personnel and responsibilities</p> <p>Test Director: S. Mooney Test Conductor: C. Much PA : J. Hall Engineering Support: G. Beaufils, M.Priestley, M.Oort Cryo Engineering Support: M. Langfermann Functional Support: O. Martin, P.Modesto, A. di Capua, M.Theunissen ESA: A. Gatti, F. de Bruin</p> <p>Test operator, EGSE support and QA according to shift plan.</p>	

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Problem areas	
<p>The separation Camera requires an image to be used for the verification of the camera. ESA will provide details of how the camera commission was performed Test was performed by TAS-I. TAS-F to evaluate if the supplied information from TAS-I is suitable for use.</p> <p>Open Work</p> <p>The IST is to be performed against new versions of the HPSDB and CDMS application software without prior verification of the software.</p> <p>Changes have been made according to the IST Specification iss 5 which have not yet been tested.</p> <p>The TMTC DFE Front end patch relating to time management may not yet be installed. This shall be verified but is not mandatory for IST1 part 1..</p>	
AOB	
<p>Due to the current changes to the IST_Start procedures, the initial start up with the first test executed, mode_transitions, shall be used as an evaluation of the modified start up procedures.</p> <p>A pre-requisite for the IST1 part 1 tests to be performed was the completion of the CDMS P1 confidence tests. There is one test left to be executed (FDIR 2). As no PTR has been performed TAS-I shall be contacted to determine if any NCRs were raised which may impact the IST1 part 1 tests. The potential impacts of the non execution of the test does not affect any test within IST1 part1. TAS-F (PC) shall confirm that the non execution of the FDIR 2 test does not impact the IST1 part 1 tests. This is confirmed by TAS-F (GB)</p> <p>The last NCR review was performed in 19/12/2007. With the issues relating to IST1 part 1, any NCRS raised after this date have not been reviewed wrt potential impacts on the IST testing.</p>	
Conclusion of TRR	
<p>All major issues have been reviewed and all open work is listed in the test release sheet.</p> <p>With the closure of the test release sheet the TRR will reconvene to verify and give approval for the start of the test.</p>	

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<p>Given the current incomplete status of the spacecraft, TAS-F agreement of the TRR minutes provides confirmation and authorisation to perform the IST1 part 1 tests in the current configuration.</p> <p>Deviations from the requirements specification resulting from the open NCRs as listed in this TRR minutes are accepted by this TRR for IST1 part 1.</p>	
<p>TRR Closeout: 14/1/2008 Present: S.Mooney (TAS-F) D.M.Priestley (TAS-F) J. Hall (TAS-F) S. Hamer (ASED) M. Koelle (ASED) J. Huesler (ESA) C. Much (ASED) O. Martin (ASED) G. Beaufils (TAS-F)</p>	
<p><u>Status of open work</u></p> <ol style="list-style-type: none"> 1. Completed successfully 2. Still Open. Closed out in open work closure. 3. Completed successfully 4. Still Open. Pending the agreement between TAS-F system engineering and AIT engineering. 5. Completed successfully 6. Completed successfully 7. Still Open. Closed out in open work closure. 8. Completed successfully 9. Completed successfully (Has been updated to current site procedure. To be formally issued). 	
<p><u>AOB</u> The deviations list shall be reviewed and finalised before the IST 1 part 1 mode transitions test shall commence.</p>	
<p>A brief meeting shall be held each day at 14:00 to provide an initial post test evaluation of the previous days test.</p>	
<p><u>Conclusion of TRR Closeout</u></p>	

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<p>The TRR closeout board concludes that with the closure of the open work items and the formal issue of the procedures, the IST 1 part 1 tests: ‘mode transitions’, ‘ACMS commissioning’ and ‘Satellite Commissioning’ can commence</p>	
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OPEN WORK TO BE CHECKED OFF BY QA PRIOR TO START OF IST1 PART 1 "MODE TRANSITIONS":

0 12/10/08
S.M.E.

1. Version 6 of the HPSDB shall be loaded. *closed 14/1/08 R.V.*
2. Before the test commences, a 4eye inspection shall be performed by the test conductor and QA responsible *closed 14/1/08 R.V.*
3. AIT shall verify that the OBCP loading sequence is correct for the version 6 HPSDB. *closed 14/1/08 R.G.*
4. IST Progress review AI#2: The TCS configuration file must be created accordingly in the CCS. *closed 14/1/08 R.G (confirmed by G.B.)*
5. Pre-TRR AI #6: ASED will instruct the test conductors on the anomaly reporting management process for anomalies raised during IST tests. *closed 14/1/08 R.G*
6. Quality engineers will be instructed on their roles and responsibilities during the IST tests. *← Rien & copy received
Riccardo & copy received
Jaques & copy received. } closed 14/1/08 R.G*
7. Red mark the procedure to stop the test execution after SAM to NOM transition (test up to 5.8.5.7 inclusive) *done by C.M. closed 14/1/08 R.G.*
8. Ensure the script is available to control the heaters in case of spurious FDIR event *ref. D1021595CUT003DISTHERMALCONTROL.tcl
rev. 1.0 closed 14/1/08 R.V.*
9. Ensure emergency off procedure is available and engineers have read it. *closed 14/1/08 R.V + R.G.*

With the completion of the above work the following tests can be executed:

- Mode Transition
- ACMS Commissioning
- Satellite Commissioning


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Open Work for Procedure Nominal Launch Sequence

1. The CCU will be disconnected during the IST1 part 1 tests due to the ongoing bake-out operation. It shall be identified whether the sensors shall be left open or connected to GSE during the test. TASF require the signals to be monitored. A procedure shall be provided to cover this.
2. Ensure NCR2998 is closed
3. Verify the Scope is attached to monitor spurious signals on NCA line
4. Verify the means for providing a valid camera image is in place

With the completion of the above work the following tests can be executed:

- Nominal Launch Sequence
- Launch robustness

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Open Work for Procedure Launch clean Run

Confirm decision of NRB for NCR3472

Pre TRR AI#2: Battery has been commissioned and charged and is connected

With the completion of the above work the following tests can be executed:


- Launch clean run

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Annex 1: Deviations

Deviation	Deviation Ref	Reason For Deviation	Test Group Name	Test Name	Affected Tests			Observed Characteristic	Interpretation	Mitigation
					IST Spec para	IST Procedure para	IST Procedure step			
TELESCOPE DECONTAMINATION HEATER SERVICE SHALL NOT BE ACTIVATED	IS11_P1_DEV_1	Telescope, telescope heaters and temperature sensors not integrated	All TBC						NOT NOGO	Future post integration test opportunity
LOU BAFFLE MANAGEMENT SERVICE SHALL NOT BE ACTIVATED	IS11_P1_DEV_2	PACS LOU (and baffle heaters/sensors) not integrated	All TBC						NOT NOGO	Future post integration test opportunity
INSTRUMENT LAUNCH LOCKS SHALL NOT BE ACTIVATED	IS11_P1_DEV_3	Total number of activations limited	All 3 Launch tests						NOT NOGO	Future test opportunity
ACMS COCOS MEMORY DUMP SHALL NOT BE EXECUTED	IS11_P1_DEV_4	NCR3821	ACMS Commissioning						NOT NOGO	Future post-fix test opportunity
ACMS RM MEMORY DUMP SHALL NOT BE EXECUTED	IS11_P1_DEV_5	NCR3842	ACMS Commissioning						NOT NOGO	Future post-fix test opportunity
DoD ALARM WORK AROUND SHALL BE IMPLEMENTED	IS11_P1_DEV_6	NCR3472	All 3 Launch tests						NOT NOGO	
ALARMS RELATED TO CCU TM AND CCU TM SHALL BE IGNORED	IS11_P1_DEV_7	CCU not connected	All tests					No valid CCU TM	NOT NOGO	
CCU VALVE ACTUATION SHALL BE VERIFIED BY OSCILLOSCOPE	IS11_P1_DEV_8	Cryostat valves not connected to CCU	All 3 Launch tests					No valid status feedback to check commands issued	NOT NOGO	
THE TC TO INITIALISE THE TRM MEMORY ON S/C INITIALISATION SHALL NOT BE SENT	IS11_P1_DEV_9	NCRxxxx; Procedure not validated at TAS-1 level	All tests					EDAC error in Trm history	NOT NOGO	This error is NOT NOGO
NOMINAL AND REDUNDANT TCS LOOPS 11, 17, 20, 39, 43, 46, 53, SHALL BE DISABLED	IS11_P1_DEV_10	Thermistors are not connected and loops have not been checked	All (IST Start)					Processor load lower than representative	NOT NOGO	
NOMINAL AND REDUNDANT TCS LOOPS 27, 35, 37, SHALL BE DISABLED	IS11_P1_DEV_11	These loops have not been checked	All (IST Start)					Processor load lower than representative	NOT NOGO	
RUN SCRIPT TO DISABLE ALL TCS SERVICES IN CASE OF TCS FDIR	IS11_P1_DEV_12	NCRxxxx; The use of redundant side not validated at TAS-1 level	All tests					None	NOT NOGO	
WAVEGUIDE ADAPTORS SHALL BE USED FOR RF COMMS	IS11_P1_DEV_13	Antennae not integrated	All tests						NOT NOGO	
THE BCR OVERVOLTAGE TRIGGER SHALL BE RESET (TC BCRs OFF/ON)	IS11_P1_DEV_14	NCRxxxx; Overvoltage protection triggered at PCDU turn on	All 3 Launch tests						NOT NOGO	
CONTINUE TEST IF SW TABLE DISCREPENCY ERROR OCCURS	IS11_P1_DEV_15		All tests						NOT NOGO	
CONTINUE TEST IF GYRO OR START TRACKER OR RW LCL STATUS ERROR OCCURS AFTER ANY MODE TRANSITION	IS11_P1_DEV_16	NCR3207	Mode Transitions						NOT NOGO	
TESTS SHALL NOT BE EXECUTED IN AMBIENT CONDITIONS (MODE TRANSITIONS)	IS11_P1_DEV_17		Mode Transitions	All mode transitions after SAM to NOM	5.8.5.8, through to 5.8.5.18				NOT NOGO	
CONTINUE WITHOUT TCS LOOP CYCLING	IS11_P1_DEV_18	NCT TBD	All tests						NOT NOGO	
CONTINUE WITHOUT CCS LITE IF EQUIPMENT NOT AVAILABLE	IS11_P1_DEV_19		All (IST Start)						NOT NOGO	
VCM TELEMETRY AND IMAGE DATA RETRIEVAL ERROR EVENTS SHALL BE IGNORED	IS11_P1_DEV_20	VCM (camera) is not integrated	All 3 Launch tests and Mode transitions	Launch to SAM transition	5.8.2.4.6, 5.8.2.4.8, 5.8.5.5, 5.8.10.2, 5.8.11.3.6, 5.8.11.3.8				NOT NOGO	Future post-integration test opportunity
FAILURE OF TCS LOOP TEMPERATURES TO CYCLE AS EXPECTED SHALL BE IGNORED	IS11_P1_DEV_21	TCT has been uploaded with control thresholds wrongly set to ambient (patched to ambient)	Mode Transitions on 14/01/08 only						NOT NOGO	TCT will be fixed by 15/01/08
ACMS THERMISTOR 5, 6 and 8 OUT-OF-LIMIT ALARMS SHALL BE IGNORED	IS11_P1_DEV_22	NCR2862; Thermistors appear not be connected							NOT NOGO	

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Annex 2: Equipment Requiring Calibration

Unit Description	Part No.	Serial No.
Hewlett Packard (Agilent) Power Supply	6060B	TBD
Hewlett Packard (Agilent) Power Supply	6060B	3637A01524
Hewlett Packard (Agilent) Network Analyser	E5100A	MY40500710
Hewlett Packard (Agilent) Power Meter	E4418B	GB43313104
HP Function & Waveform Generator	33220A	MY43002921
Rode & Schwarz Signal Generator	SML 03	101398
Rode & Schwarz Signal Generator	SML 03	101399
Rode & Schwarz Signal Generator	SML 03	101400
Rode & Schwarz Spectrum Analyser	FSP 9KHz - 13.6GHz	100018

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Annex 3: H-EPLM Integration Status List

Herschel H-EPLM Integration Status for Pre-Shipment Review


HP-2-ASED-LI-0032_7

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Equipment / CI-No.	Integr. Date	Model, Serial No	ABCL Ref. (or EIDP)	Qualified	Remarks / Open Work / NCR's
121110 CVV	(02.06.05)	PFM, SN01	HP-2-APCO-AB-0043, Issue 1, 19.01.05	y	NC-1161: One flange bolt broken at 30 Nm, torque reduced to 28 Nm, NC is closed. 09.12.05: 12 bolts removed for pull test & replaced by new ones from stock NC-1257: Positions of harness fixation brackets on CVV changed
121111 CVV Upper Bulkhead	planned for 06.12.07	PFM, SN01	HP-2-APCO-AB-0043, Issue 1, 19.01.05	y	NC-1174: Leakage at seal I/F to filling port; status of top plate see cryo cover 121131. Re-mated; NC-2558: Traces of contamination/corrosion found inside UB Molecular wipes taken, no aggressive radicals included, use as is for STM2. CVV screws preliminary mated: only each 4th screw inserted and torqued with 24Nm 27.07.2006 HP-2-ASED-SD-0116_REWORK OF SEALING SURFACE ON UPPER BULKHEAD AND FILLINGPORT performed (closeout of NC-1174) NC-1476: 2 stand-offs are detached, repair is open work Final integration of all I/F screws and torque with MA= 25Nm and second torque, final with MA= 31Nm , performed on 14.08.06 Screws LN 65056, 056-08028 charge FA 05/2146, nuts LN 65410-08, charge FA 05/2146 Removed acc. PR-0049 Issue2 23.03.2007 R.K. Preliminary Integration acc.PR-0064 T.B. Removal after Leaktest acc.PR-0049.2 T.B. Preliminary Integration acc.PR-0064 H.G.. Removal for PACS FPU final el. connection acc.PR0049 H.G. Final integration acc. ASED-PR-0064_2
121112 CVV cylinder	15.10.04	PFM, SN01	HP-2-APCO-AB-0043, Issue 1, 19.01.05	y	Integration acc. to HP-2-ASED-PR-0020 /-0021 Report: HP-2-ASED-RP-0145 on 1.2.05: check of helicoils M8x1 on flanges, 5 helicoils on upper flange exchanged HP-2-ASED-SD-0115_RE- FASTENING OF CONNECTORS MOUNTED ON CVV CYLINDER_performed on 28.07.06 For integration and torque of I/F screws, See UB and LB
121112 Dummy receptacles on FT J03 and J04	21.03.05	PFM			FT J03 and J04 not used for wiring, integrated dummies are leak tested
121113 CVV Lower Bulkhead	06.06.07	PFM, SN01	HP-2-APCO-AB-0043, Issue 1, 19.01.05	y	Remated CVV screws preliminary mated: only each 4th screw inserted and torqued with 24Nm Final integration of all I/F screws and torque with MA= 25Nm and second torque, final with MA= 31Nm performed on 14.08.06

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					Screws LN 65056; 056-08028 ; charge FA 05/2146 Nuts LN 65410-08, charge FA 05/2146 Removed acc. PR-0049 Issue2 23.03.2007 R.K. Final Integration acc. PR-0023 Iss2 T.B.
121114 Radiator on -Z		PFM	HP-2-APCO-AB-0052, issue 2, 28.09.05	y	2 Parts pre-integration on 17.9.05 Integration acc. to HP-2-APCO-MA-0048 Both removed 05.04.2006
121115 Radiator on +Y		PFM	HP-2-APCO-AB-0052, issue 2, 28.09.05	Y	2 Parts, NC-1508: MLI too short, bolt torque 29 Nm Integration acc. to HP-2-APCO-MA-0048 NC-1851; Upper part removed on 19.12.05 due to interference with HSS strut 5, radiator reworked, new bracket added. Upper part re-installed 10.01.2006, bolt torqued 29 Nm Both removed 31.03.2006
121116 Radiator on -Y		PFM	HP-2-APCO-AB-0052, issue 2, 28.09.05	y	Lower part removed 16.11.05; reintegrated 15.12.2005 Removed 30.03.2006
121117 IMT Crown	05.08.06	FS	HP-2-ASED-DW-0135		Glued and screwed to PFM Top Plate acc. to DW-0135, same configuration as used on EQM-PLM
121118 Heaters,TC's and PT1000 for TB/TV test on CVV,	27.08.2007	PFM Instrumentation	HP-2-ASED-PL-0046 Iss.1	n a	NC-1595: Heater burnt during TB/TV test Removed the damaged heaters on LBH acc- PR-0097 and integrated new test heaters on CVV_05_LB;CVV_06_LC-pz and CVV_35_LB
121121-01 TSS chain pos. 1	23.12.04	PFM, SN 18	HP-2-ECD-AB-0001, Issue 1, 29.07.04	y	Pre-integrated on 23.12.04, adjusted and tensioned on 17.1.05 load cells remounted on 07.08.06 adjusted to 5-6kN;adjustment 26.10.06 to 25 Nm
121121-01 TSS chain pos. 2	03.01.05	PFM, SN 3	"	Y	Pre-integrated on 03.01.05, adjusted and tensioned on 17.1.05 load cells remounted on 07.08.06 adjusted to 5-6kN;adjustment 26.10.06 to 25 Nm
121121-01 TSS chain pos. 3	03.01.05	PFM, SN 7	"	Y	Pre-integrated on 03.01.05, adjusted and tensioned on 17.1.05 load cells remounted on 07.08.06 adjusted to 5-6kN;adjustment 26.10.06 to 25 Nm
121121-01 TSS chain pos. 4	03.01.05	PFM, SN 13	"	Y	Pre-integrated on 03.01.05, adjusted and tensioned on 17.1.05 load cells remounted on 07.08.06 adjusted to 5-6kN;adjustment 26.10.06 to 25 Nm
121121-01 TSS chain pos. 5	03.01.05 19.07.06	PFM, SN 16	"	Y	Pre-integrated on 03.01.05, adjusted and tensioned on 17.1.05, one washer at Th. Shield 3 had to be reworked in order to remove an interference with the shield bracket Thermal bonding jumper integrated, isolation stand-offs for SPIRE JFET harness fixed iaw. ASE- SD-0101. load cells remounted on 07.08.06 adjusted to 5-6kN;adjustment 26.10.06 to 25 Nm
121121-01 TSS chain pos. 6	03.01.05 19.07.06	PFM, SN 4	"	Y	Pre-integrated on 03.01.05, adjusted and tensioned on 17.1.05 Thermal bonding jumper integrated, isolation stand-offs for SPIRE JFET harness fixed iaw. ASE- SD-0101. load cells remounted on 07.08.06 adjusted to 5-6kN;adjustment 26.10.06 to 25 Nm

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Equipment / CI-No.	Integr. Date	Model, Serial No	ABCL Ref. (or EIDP)	Qualified	Remarks / Open Work / NCR's
121121-01 TSS chain pos. 7	03.01.05	PFM, SN 2	"	Y	Pre-integrated on 03.01.05, adjusted and tensioned on 17.1.05 load cells remounted on 07.08.06 adjusted to 5-6kN
121121-01 TSS chain pos. 8	03.01.05	PFM, SN 14	"	Y	Pre-integrated on 03.01.05, adjusted and tensioned on 17.1.05 load cells remounted on 07.08.06 adjusted to 5-6kN; adjustment 26.10.06 to 25 Nm
121121-02 TSS chain pos. 9	04.01.05	PFM, SN 11	"	Y	Pre-integrated on 04.01.05, adjusted and tensioned on 17.1.05 load cells remounted on 07.08.06 adjusted to 5-6kN; adjustment 26.10.06 to 25 Nm
121121-02 TSS chain pos. 10	04.01.05	PFM, SN 9	"	Y	Pre-integrated on 04.01.05, adjusted and tensioned on 17.1.05 load cells remounted on 07.08.06 adjusted to 5-6kN; adjustment 26.10.06 to 25 Nm
121121-02 TSS chain pos. 11	04.01.05	PFM, SN 17	"	Y	Pre-integrated on 04.01.05, adjusted and tensioned on 17.1.05 load cells remounted on 07.08.06 adjusted to 5-6kN; adjustment 26.10.06 to 25 Nm
121121-02 TSS chain pos. 12	04.01.05	PFM, SN 6	"	Y	Pre-integrated on 04.01.05, adjusted and tensioned on 17.1.05 load cells remounted on 07.08.06 adjusted to 5-6kN; adjustment 26.10.06 to 25 Nm
121121-02 TSS chain pos. 13	04.01.05	PFM, SN 5	"	Y	Pre-integrated on 04.01.05, adjusted and tensioned on 17.1.05 load cells remounted on 07.08.06 adjusted to 5-6kN; adjustment 26.10.06 to 25 Nm
121121-02 TSS chain pos. 14	04.01.05	PFM, SN 12	"	Y	Pre-integrated on 04.01.05, adjusted and tensioned on 17.1.05 A cut was missing in outer MLI blanket. Photos taken, cut made with sharp scissors load cells remounted on 07.08.06 adjusted to 5-6kN; adjustment 26.10.06 to 25 Nm
121121-02 TSS chain pos. 15	04.01.05	PFM, SN 15	"	Y	Pre-integrated on 04.01.05, adjusted and tensioned on 17.1.05 load cells remounted on 07.08.06 adjusted to 5-6kN; adjustment 26.10.06 to 25 Nm
121121-02 TSS chain pos. 16	04.01.05	PFM, SN 8	"	Y	Pre-integrated on 04.01.05, adjusted and tensioned on 17.1.05 load cells remounted on 07.08.06 adjusted to 5-6kN; adjustment 26.10.06 to 25 Nm
121121-04 Strap pre-tensioning devices	22.-24.09.04	PFM	HP-2-ECD-AB-0001, Issue 1, 29.07.04	y	Leak test after integration was successful
121122-01 Upper SFW	19.10.04 19.07.06	PFM	HP-2-HTSZ-LI-0008 Iss. 2, 23.10.03	y	Lateral struts adjusted and 21 Nm applied on bolt nuts; wire locking on all struts performed ASED-NC-0481, X-ray investigation of all strut fittings performed, all are ok. New Al-angles and Vespel stand-offs glued with EC 2216 on Y-side of frame, SD-0101
121122-02 Lower SFW	05.05.04 27.06.06	FM, SN 01	HP-2-HTSZ-LI-0008 Iss. 2, 23.10.03	y	wire locking on struts performed; New stand-offs and sensors on LSFW acc. to ASED-SD-0100 Harness Brackets Struts SLI on LSFW installed acc to ACR:SD-0102
121131 Cryo Cover incl. Top Plate	22.05.07	PFM, SN 01	HP-2-AAE-AB-0002, Issue 2, 07.03.05	y	NC-2316: Rework on cryo cover mirror, mirror polished. Deintegrated and shipped to AAE 02.04.2007 K.R. Final Integrated acc. PR-0091 22.05.2007 K.R.
121132 Cryo Baffle	22.05.07	PFM, SN-01	HP-2-AAE-AB-0003, issue 2, 31.05.05	y	HP-2-AAE-MA-0004 Baffle cover removed for inspection on 7.12.05, re-mounted on 22.12.06 Removed 05.04.2006 HP-2-ASED-SD-0093 Final Integrated acc. PR-0091 22.05.2007 K.R.

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121140 Optical Bench Assembly	into CVV on 24.01.05 24.07.06	PFM, SN 003	HP-2-SEN-AB-0002 Issue 2, 16.11.04 additional holes acc. to NC-0678 and HP-2-ASED-ID-0096 OBHCL1 modified iaw. HP-2- ASED-DW-0234-01-0A	y	NC-0644: Several heli-coils were not mounted properly, replaced by ASED NC-0565: Cooling loop interference, rework performed by AIRL NC-0961: OBA labels covered with AL-tape MLI Straylight covers mounted on L 0 –Pod MLI SPIRE cooler pump and evaporator , Stray Light Cover, L 0 –Pod MLI SPIRE Detector , Stray Light Cover, HIFI LO, PACS Cooler Pump and Evaporator, PACS LO, according to HP-2-ASED-PR-0059_as run OBA cooling loop: straylight protection orifices mounted on inlet, add. holes for T-sensors drilled in OBHCL1 iaw. HP-2-ASED-DW-0234-01-0A
121140 L0 Light tightness devices	19.01.05	PFM	HP-2-SEN-AB-0002 Issue 2, 16.11.04 (HP-2-SEN-DW-2200)	y	incl. harness routing, modified acc. to ASED-SD-0101
121140 OBA	24.01.05	PFM	OBA integration status list of 24.01.05	y	shimmed and aligned Tubing fit check: 4 mm offset in X-dir. OBA outlet tube / shield inlet, on 1.2.05 adjusted with 2 mm shims at tripod
121141 Fixation bars for HIFI harness brackets	04.01.2005	PFM	HP-2-ASED-DW-0080-01-0A, NC-0678	n. a.	4 additional holes drilled into OB plate acc. to HP-2-ASED-ID-0096-01-0A "OB Fixation Bar I/F", four harness bracket nuts mounted with one screw each, see NC-0678 Cut-out Cover 3 removed 11.05.2006
121142 OB instrument shield	27.11.07	PFM	HP-2-SEN-AB-0002 issue 2, 16.11.2004	y	Pre-integration acc. to HP-2-ASED-DW-0140-01-0A NC-0961: OBA labels covered with AL-tape Harness for T211, T212, T213 connected and tested AL-tapes applied on gaps for straylight protection OBS plate and OBS mounted according to HP-2-ASED-PR-0064 on 24.07.06 NC-xxxx: OBS plate reworked, see pics. 1082 & 1083 of 21.7.06 Removal for PACS FPU final el. connection acc. PR0049 H.G. Final integration acc. PR-0064 K.R. Removal acc. PR-0049 Iss.3 20.11.2007 Final integration acc. PR-0064_2 H.G.; R.H.; ASED-NC-3795, OBS cover on HIFI side reworked
121142-01 HIFI Baffle Assy	27.11.07	PFM	HP-2-ASED-DW-0090-01-0A HP-2-ASED-DW-0130-01-0A HP-2-ASED-DW-0131-01-0B	y	De- integrated from PLM 26.04.2006, re-mounted acc. to PR-0064. FPU baffle DW-0130 and OBS baffle DW-0131 are black anodized. Re-integrated during final closure acc. ASED-PR-0064_2, H.G.
121144 Thermal links					Integration of thermal flex links is reported in HP-2-ASED-SD-0004
121144-01 PACS Evaporator, L0 Open Pod	11.6.04 11.07.07	H-0400-E-150	HP-2-AIRL-AB-0002, issue 1, 27.05.2004	y	Integrated by Airl (protective cover installed) Integr. procedure: HP-2-AIRT-PR-0001 Final integrated on PACS acc. PR-0089 by MPE 10.07.07
121144-01 PACS Evaporator	08.05.07 11.07.07	2000_14C101 S/N:1	HP-2-AIRL-AB-0002, issue 1, 27.05.2004	y	integr. by ASED acc. to HP-2-ASED-PR-0026 NC-0807: Thermal I/F improved: CQM removed 19.04.2007 Geiger; NC-3256


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flex link					Re-Integration acc-PR-0086 T.Bayer 08.05.2007 Final integrated on PACS acc. PR-0089 by MPE 10.07.07
121144-01 SPIRE Evaporator, LO Open Pod	11.6.04	H-0400-E-149	HP-2-AIRL-AB-0002, issue 1, 27.05.2004	y	Integrated by Airl (protective cover installed) Integr. procedure: HP-2-AIRT-PR-0001
121144-01 PACS LO cooler evaporator rigid pod	26.11.04 11.07.07	H-0400-E-121	HP-2-AIRL-AB-0004, issue 2, 29.09.2004	y	Final integrated on PACS acc. PR-0089 by MPE 10.07.07
121144-01 PACS LO cooler evaporator flex link	13.01.05 11.07.07	H-0400-E-110	HP-2-AIRL-AB-0004, issue 2, 29.09.2004	y	integr. by ASED acc. to HP-2-ASED-PR-0026 Final integrated on PACS acc. PR-0089 by MPE 10.07.07
121144-01 PACS LO cooler pump rigid pod	26.11.04 11.07.07	H-0400-E-105	HP-2-AIRL-AB-0004, issue 2, 29.09.2004	y	Final integrated on PACS acc. PR-0089 by MPE 10.07.07
121144-01 PACS LO cooler pump flex link	08.05.07 11.07.07	2000_14C102 S/N1	HP-2-AIRL-AB-0004, issue 2, 29.09.2004	y	integr. by ASED acc. to HP-2-ASED-PR-0026 NC-0807: Thermal I/F improved CQM removed 19.04.2007 Geiger;NC-3256 Re-Integration acc-PR-0086 T.Bayer 08.05.2007 Final integrated on PACS acc. PR-0089 by MPE 10.07.07
121144-01 PACS LO red detector rigid pod	11.07.07	H-0400-E-108	HP-2-AIRL-AB-0004, issue 2, 29.09.2004	y	Final integrated on PACS acc. PR-0089 by MPE 10.07.07
121144-01 PACS LO red detector flex link	08.05.07 11.07.07	520_5119_2A S/N.III	HP-2-AIRL-AB-0004, issue 2, 29.09.2004	y	integr. by ASED acc. to HP-2-ASED-PR-0026, NC-0434; NC-0807: Thermal I/F improved CQM removed 19.04.2007 Geiger;NC-3256 Re-Integration acc-PR-0086 T.Bayer 08.05.2007 Final integrated on PACS acc. PR-0089 by MPE 10.07.07
121144-01 PACS LO blue detector rigid pod	20.01.05 11.07.07	H-0400-E-122	HP-2-AIRL-AB-0004, issue 2, 29.09.2004	y	Final integrated on PACS acc. PR-0089 by MPE 10.07.07
121144-01 PACS LO blue detector flex link	07.05.07 11.07.07	520_5118_2A S/N:II	HP-2-AIRL-AB-0004, issue 2, 29.09.2004	y	integr. by ASED acc. to HP-2-ASED-PR-0026; fixed to MTD on 08.02.05 NC-0807: Thermal I/F improved CQM removed 19.04.2007 Geiger;NC-3256 Re-Integration acc-PR-0086 T.Bayer 07.05.2007 Final integrated on PACS acc. PR-0089 by MPE 10.07.07
121144-01 SPIRE LO cooler evaporator rigid pod	06.12.04	H-0400-E-117	HP-2-AIRL-AB-0004, issue 2, 29.09.2004	y	NC-0571: defect heli-coils replaced by ASED NC-2301: Discolouration of gold plating
121144-01 SPIRE LO cooler pump rigid	06.12.04	H-0400-E-117	HP-2-AIRL-AB-0004, issue 2, 29.09.2004	y	NC-0571: defect heli-coils replaced by ASED NC-2301: Discolouration of gold plating

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pod					
121144-01 SPIRE L0 SM detector rigid pod	26.11.04	H-0400-E-106	HP-2-AIRL-AB-0004, issue 2, 29.09.2004	y	
121144-01 HIFI L0 rigid pod	06.12.04	H-0400-E-107	HP-2-AIRL-AB-0004, issue 2, 29.09.2004	y	NC-0571: defect helicoils replaced by ASED
121144-01 HIFI L0 flex link	24.07.2007	H-0400-E-114 STM	HP-2-AIRL-AB-0004, issue 2, 29.09.2004	y	NC-0434; SRON-NC-0653: Modified by removing 10 Cu-layers, perf. on 5.4.05 Removed on 12.07.06 H.G.; N/A for STM2 test Final integration H.G. acc. HP-2-ASED-PR-0090_1
121144-02 L1 PACS Photometer Thermal Link	10.02.05 11.07.07	PFM	HP-2-AIRL-AB-0003 issue 1, 30.07.2004		Torque on M4: 2.1 Nm + RT; Torqued with 3,25 Nm Final integrated on PACS acc. PR-0089 by MPE & H.G: 11.07.07
121144-02 L1 PACS Collimator Thermal Link	08.02.05 11.07.07	PFM	HP-2-AIRL-AB-0003 issue 1, 30.07.2004		Torque on M4: 2.1 Nm + RT ;Torqued with 3,25 Nm Final integrated on PACS acc. PR-0089 by MPE & H.G: 11.07.07
121144-02 L1 PACS Spectrometer Thermal Link	08.02.05 11.07.07	PFM	HP-2-AIRL-AB-0003 issue 1, 30.07.2004		Torque on M4: 2.1 Nm + RT; Torqued with 3,25 Nm Final integrated on PACS acc. PR-0089 by MPE & H.G: 11.07.07
121144-02 L1 SPIRE 1 Thermal Link	29.05.06	PFM	HP-2-AIRL-AB-0003 issue 1, 30.07.2004		Procedure Variation on torque: M4: 2.1 Nm + RT; M8: 10.5 Nm acc. to SPIRE ICD Remounted acc HP-2-ASED-PR-0061_1
121144-02 L1 SPIRE 2 Thermal Link	29.05.06	PFM	HP-2-AIRL-AB-0003 issue 1, 30.07.2004		Remounted acc HP-2-ASED-PR-0061_1 Final integration H.G. acc. HP-2-ASED-PR-0090_1
121144-02 L1 HIFI Thermal flex Link	24.07.2007	PFM	HP-2-AIRL-AB-0003 issue 1, 30.07.2004		Torque on M4: 2.1 Nm + RT Removed on 12.07.06; N/A for STM2 test
121144-03 L3 JFET 6 (P) Thermal Link	29.05.06	PFM	HP-2-AIRL-AB-0003 issue 1, 30.07.2004		Remounted acc. HP-2-ASED-PR-0061_1
121144-03 L3 JFET 2 (S) Thermal Link	29.05.06	PFM	HP-2-AIRL-AB-0003 issue 1, 30.07.2004		Remounted acc. HP-2-ASED-PR-0061_1
121210 HTT	25.5.04	PFM, SN01	HP-2-AIR-AB-0001 Iss. 2, 22.7.04	y	

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121221 PPS	10.6.04	PFM, SN01	HP-2-LIND-AB-3511 Iss. 4, 19.1.04	y	NCR-0256 Helicoflex HN 100 used instead of HN 200
121222 DLCM 1	25.5..04	PFM, SN01	HP-2-LIND-AB-4511 Iss. 4, 19.1.04	y	-y position, Ty-rap fixed with AL-tape, NCR-0256 Helicoflex HN 100 used instead of HN 200; SLI covered acc. to ASED-PR-0059
121222 DLCM 2	25.5.04	FM, SN02	HP-2-LIND-AB-4512 Iss. 4, 19.1.04	y	+y position, Ty-rap fixed with AL-tape, NCR-0256 Helicoflex HN 100 used instead of HN 200; SLI covered acc. to ASED-PR-0059
121223 Cryo Components					General: all VCR initially torqued 45°, after detecting leak at V701/702 25° added to each valve VCR connection around lower SFW
121223-01 L101	25.5.04	PFM, SN01	HP-2-LIND-AB-5611 Iss. 3, 28.11.03	y	+y position NCR-0256 Helicoflex HN 100 used instead of HN 200 See NCR HP-2-ASED-NC-121223-ASED-NC-2339 pin bended Protection cover removed prior to cryostat closure
121223-01 L102	03.05.07	FM, SN02	HP-2-LIND-AB-5612 Iss. 3, 28.11.03	y	+y / -z position NCR-0256 Helicoflex HN 100 used instead of HN 200 Protection cover removed prior to cryostat closure NC-2659: LLP L 102 Zero reading on SCOE STM2 Ex-changed the L102 acc. PR-0088 03.05.07 M.L.
121223-02 L 701	03.05.07	PFM, SN 03	HP-2-LIND-AB-5513 Iss. 3, 28.11.03	y	Protective cover removed before LBTS1 mounting Protection cover removed prior to cryostat closure NC-2590: Ex-changed the L701 acc. PR-0088 03.05.07 M.L. (leak)
121223-02 L 702	29.03.04	FM, SN 02	HP-2-LIND-AB-5512 Iss. 3, 28.11.03	y	Protective cover removed before LBTS1 mounting Protection cover removed prior to cryostat closure
121224-02 H 701	30.07.04	FM 03	HP-2-ASED-DP-0035 Iss. 1, 17.03.04	y	incl. connector brackets
121224-02 H702	30.07.04	FM 04	HP-2-ASED-DP-0035 Iss. 1, 17.03.04	y	incl. connector brackets
121224-02 H103	3.8.04	FM01	HP-2-ASED-DP-0035 Iss. 1, 17.03.04	y	SLI covered acc. to ASED-PR-0059
121224-02 H104	3.8.04	FM02	HP-2-ASED-DP-0035 Iss. 1, 17.03.04	y	SLI covered acc. to ASED-PR-0059
121224-03 Ventline Heater H501	13.05.05	PFM, SN 1	HP-2-LIND-AB-7511, Issue 2, 17.03.05	y	Part of harness integrated by ASED acc. to CCH-PFM Wiring list NC-2305: Power cables of H501 partially bent.
121225 RD 724	29.03.04	FM2, SN 311148/4	HP-2-ASED-DP-0042 Iss. 1, 18.03.04	y	NC-0212: Mounted with HN 100 seal instead of HN 200; HP-2-ASED-DP-0042 includes Rembe EIDP HP-2-REMB-DP-0081(1)

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					protective cover removed, RD housing SLI covered acc. to ASED-PR-0059
121225 RD124	24.11.04	FM1, SN 311148/9	HP-2-ASED-DP-0042 Iss. 1, 18.03.04	y	NC-0212: Mounted with HN 100 seal instead of HN 200 HP-2-ASED-DP-0042 includes Rembe EIDP HP-2-REMB-DP-0081(1) SLI covered acc. to ASED-PR-0059, protective cover removed
121226-01 SV 723	24.11.04	FS2, SN IA-81824/1/4	HP-2-ASED-DP-0040 Iss. 1, 18.03.04	y	with VCR coupling SLI covered acc. to ASED-PR-0059
121226-01 SV 123	26.01.05	FM1, SN IA-81824/1/1	HP-2-ASED-DP-0040 Iss. 1, 18.03.04	y	with flanges, helicoflex seals installed, final torque on flange bolts applied fits without the shims from the dummy!
121226-02 SV 521	16.09.05	SN 02	Swagelock SS-12C-VCR-WD-5 HP-2-ASED-TR-0097, issue 1, 26.09.05	y	Qualified acc. SD-0136 see NC-2452
121226-03 SV 921		SN 02	HP-2-ASED-DP-0039, issue -, 16.03.04	Y	Flange 922-3, +plate 922-2 mounted on -Y M6 x 35 Fixationscrews torqued with 7 Nm acc. to Stoehr drwing 08-616 issue 05.05.03 Vacuum pump mounted on SV921 place; 07.08.06 SV921 should be tested after Mech.Test AI: Hans Huber SV921 is tested acc.SD-0136 see NC 2452 SV921 integrated acc. HP-2-STOE-ID-0001 H.Huber 19.01.2007 T=7 Nm; Removed for Evacuation TB/TV test;J.Huber 23.01.2007; re-integrated acc. HP-2-STOE-ID-0001 H.Huber 23.01.2007; Removal after abort 27.01.2007 Huber; Vacuum pump mounted Installed for restart TB/TV test 04.02.2007 A.Runge; Removed after TB/TV test acc.SD-0151 28.02.2007 A.Runge; re-installed for Transport acc. PR-0036 05.03.2007 Huber J. Removed acc PR-0045 Issue2 R.K. 23.03.07
121226-03 SV 922	07.08.06	SN 03	HP-2-ASED-DP-0039, issue -, 16.03.04	Y	Flange 922-2, +plate 922-4 mounted on +Y M6 x 35 Fixationscrews torqued with 7 Nm acc. to Stoehr drwing 08-616 issue 05.05.03 SV 922 should be tested after Mech.Test AI: Hans Huber SV 922 is tested acc. SD-0136 see NC 2452
121227 Adsorbers	23.05.07 14.08.07	- X-FM SN ?? +X-FM SN 05- SN 21	HP-2-ASED-DP-0064	y	Not mounted since not needed on STM level Non used I/Fs covered with SLI blankets and tape, ref. HP-2-ASED-PR-0059-1_as_run Final integrated of 3 Adsorbers at lower Part acc. PR-0094 Final integrated of 17 Adsorbers at upper part acc.PR-0094 14.08.2007
121228-01 External Filling Port	10.08.06	PFM	HP-2-LIND-AB-6611, iss. 3, 13.12.04	y	External Filling Port Re-integrated on 10.08.06 Viton ring 169,2x 5,7 STM taken, MA 7,5 Nm Pressure plate S/N 02 PFM integrated 10.08.06 torqued with 10Nm Helicoflex seal HNV 200 batch 138512/ 03; 29.09.2005 used

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121228-02 Internal Filling Port with OD 101		PFM OD; SN 2	HP-2-LIND-AB-6511 Iss. 4, 11.02.05	y	LIND-NC-0546: Weak design, stiffener bonded on tube weld on 11.02.05 ASED-NC-0905: I/F from Y201 transferline to the ext. FP did not fit, repaired, closed NC-1174: I/F sealing surface reworked according to HP-2-ASED-SD-0116_REWORK OF SEALING SURFACE ON UPPER BULKHEAD AND FILLINGPORT Helicoflex sealing used HN200, Helicoflex 122.3 x 132.1 x 4.9 Retorqued finally to MA: 24,3Nm OD 101 integrated 24.10.06, OD removed according DW at ESTEC 16.11.2006
121228-02 Thermal Strap (filling port to TS1)	19.05.05	PFM	HP-2-AIRT-ID-1084-00-A1, 05.01.05		Improved according to HP-2-ASED-PR-0059
121231 V 105	23.11.04	FM1, SN 3R	HP-2-ASIP-AB-0004 Iss. 3, 29.09.04	y	HP-2-ASIP-RD-0001/-0002/-0003/-0004, HP-2-ASED-RD-0024 SLI covered acc. to ASED-PR-0059
121231 V 701	23.11.04	FM3, SN 5R	HP-2-ASIP-AB-0006 Iss. 3, 11.10.04	y	HP-2-ASIP-RD-0001/-0002/-0003/-0004, HP-2-ASED-RD-0024 SLI covered acc. to ASED-PR-0059
121231 V 702	23.11.04	FM4, SN 6R	HP-2-ASIP-AB-0007 Iss. 3, 21.10.04	y	HP-2-ASIP-RD-0001/-0002/-0003/-0004, HP-2-ASED-RD-0024 NC-0812: Incorrect pin allocation for heater foil, use as is, change on EGSE harness SLI covered acc. to ASED-PR-0059
121231 V102	15.04.05	FM 5, SN07	HP-2-ASIP-AB-0008 Iss. 3, 02.11.04	y	NC-0530: Pull in current scatter high - use as is. NC-0011/NC-0017: Change from Cajon- to Hope glands EI- I/F Connector covered with kapton acc. To NCR 2437. MLI cover (BBP 1413, 1641 SBP 400-08) repaired iaw. NC-1609 and applied, stainless steel bonding leads mounted; ASED-PR- 0060
121231 V103	15.04.05	FM 8, SN10	HP-2-ASIP-AB-0012 Iss. 2, 04.03.05	y	NC-0011/NC-0017: Change from Cajon- to Hope glands EI- I/F Connector covered with kapton acc. To NCR 2437. MLI cover (BBP 1408, 1577 SBP 400-10) repaired iaw. NC-1609 and applied, stainless steel bonding leads mounted;ASED-PR- 0060
121231 V104	24.02.2005	FM 7, SN09	HP-2-ASIP-AB-0010 Iss. 3, 28.01.05	y	NC-0011/NC-0017: Change from Cajon- to Hope glands EI- I/F Connector covered with kapton acc. To NCR 2437. MLI cover (BBP 1482, 1470 SBP 400-09) repaired iaw. NC-1609 and applied, stainless steel bonding leads mounted; ASED-PR- 0060
121231 V106	15.04.05	FM 9, SN11	HP-2-ASIP-AB-0013 Iss. 2, 17.03.05	y	NC-0011/NC-0017: Change from Cajon- to Hope glands EI- I/F Connector covered with kapton acc. To NCR 2437. MLI cover (BBP 1510, 1488 SBP 400-01) repaired iaw. NC-1609 and applied, stainless steel bonding leads mounted; ASED-PR- 0060


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121232 Liquid Helium Valve V 501	22.08.05	FM 10 S/N 12	HP-2-ASIP-AB-0014, issue 2, 15.06.05	y	Valve 501 should be tested after Mech.Test AI: Hans Huber Valve 501 is tested see NC 2452
121232 Liquid Helium Valve V 503	22.08.05	FM 11 S/N 13	HP-2-ASIP-AB-0015, issue 2, 15.06.05	y	
121232 Liquid Helium Valve V 504	22.08.05	FM 12 S/N 14	HP-2-ASIP-AB-0016, issue 2, 07.07.05	y	
121232 Liquid Helium Valve V 505	22.08.05	FM 13 S/N 15	HP-2-ASIP-AB-0017, issue 2, 07.07.05	y	
121241-01 HTT HST	see below & 19.06.06	PFM, SN01	HP-2-AIRT-AB-0003 Iss. 2, 22.07.04	y	Pipe supports improved wrt thermal behavior in lower HTT area according to HP-2-ASED-SD-0099_Thermal_Decoupling_of_Tubing_Support, see as run
121241-01 Line 1 of HOT HST	y		HP-2-AIRT-AB-0001 (2)	y	mounted with 3 brackets on HTT
121241-01 Line 1	y		HP-2-AIRT-AB-0003 (2)	y	
121241-01 Support bkt 16	y		HP-2-AIRT-AB-0003 (2)	y	
121241-01 Line 2	11.6.04		HP-2-AIRT-AB-0003 (2)	y	
121241-01 Support bkt 15	11.6.04 & 29.06.06		HP-2-AIRT-AB-0003 (2)	y	Pipe support improved wrt thermal behavior in lower HTT area according to HP-2-ASED-SD-0099_Thermal_Decoupling_of_Tubing_Support see as run
121241-01 Support bkt 17	11.6.04		HP-2-AIRT-AB-0003 (2)	y	
121241-01 Support bkt 18	11.6.04 & 29.06.06		HP-2-AIRT-AB-0003 (2)	y	Pipe support improved wrt thermal behavior in lower HTT area according to HP-2-ASED-SD-0099_Thermal_Decoupling_of_Tubing_Support see as run
121241-01 Line 3	11.6.04		HP-2-AIRT-AB-0003 (2)	y	NCR-279, holes elongated to fit to SV123 (angular displacement at I/F flange) NCR-273, tube re-bent to fit to V104
121241-01 Support bkt 6	11.6.04		HP-2-AIRT-AB-0003 (2)	y	
121241-01 Support bkt 19	11.6.04		HP-2-AIRT-AB-0003 (2)	y	
121241-01	11.6.04		HP-2-AIRT-AB-0003 (2)	y	

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Line 4					
121241-01 Support bkt 1	8.6.04 & 19.06.06		HP-2-AIRT-AB-0003 (2)	y	Pipe support improved wrt thermal behavior in lower HTT area according to HP-2-ASED-SD-0099_Thermal_Decoupling_of_Tubing_Support see as run, SLI covered acc. to ASED-PR-0059
121241-01 Support bkt 9	8.6.04 & 19.06.06		HP-2-AIRT-AB-0003 (2)	y	Pipe support improved wrt thermal behavior in lower HTT area according to HP-2-ASED-SD-0099_Thermal_Decoupling_of_Tubing_Support see as run SLI covered acc. to ASED-PR-0059
121241-01 Support bkt 27	8.6.04 & 19.06.06		HP-2-AIRT-AB-0003 (2)	y	Pipe support improved wrt thermal behavior in lower HTT area according to HP-2-ASED-SD-0099_Thermal_Decoupling_of_Tubing_Support see as run SLI covered acc. to ASED-PR-0059
121241-01 Support bkt 11,12,13	8.6.04		HP-2-AIRT-AB-0003 (2)	y	
121241-01 Support bkt 14	8.6.04		HP-2-AIRT-AB-0003 (2)	y	
121241-01 Line 5	19.01.05		HP-2-AIRT-AB-0005 (2)	y	to filling port
121241-01 Support bkt 5 & 35	19.01.05 & 19.06.06		HP-2-AIRT-AB-0005 (2)	y	Pipe supports 5 & 35 improved wrt thermal behavior in lower HTT area according to HP-2-ASED-SD-0099_Thermal_Decoupling_of_Tubing_Support see as run
121241-01 Line 6	11.6.04		HP-2-AIRT-AB-0003 (2)	y	NCR-273, I/F problems corrected by re-bending
121241-01 Support bkt 31	8.6.04		HP-2-AIRT-AB-0003 (2)	y	
121241-01 Support bkt 22,23,24	8.6.04		HP-2-AIRT-AB-0003 (2)	y	
121241-01 Support bkt 25,26	8.6.04 & 19.06.06		HP-2-AIRT-AB-0003 (2)	y	Pipe supports 25 & 26 improved wrt thermal behavior in lower HTT area according to HP-2-ASED-SD-0099_Thermal_Decoupling_of_Tubing_Support see as run Supports 25 & 26 SLI covered acc. to ASED-PR-0059
121241-01 Line 7	11.6.04		HP-2-AIRT-AB-0003 (2)	y	
121241-01 Support bkt 3	11.6.04		HP-2-AIRT-AB-0003 (2)	y	
121241-01 Line 8	11.6.04		HP-2-AIRT-AB-0003 (2)	y	
121241-01 Support bkt 2	11.6.04		HP-2-AIRT-AB-0003 (2)	y	

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121241-01 Support bkt 4	11.6.04		HP-2-AIRT-AB-0003 (2)	y	
121241-01 Line 9	19.01.05		HP-2-AIRT-AB-0005 (2)	y	SV 123 to FP wire locking done
121241-01 Support bkt 20	y		HP-2-AIRT-AB-0005 (2)	y	
121241-01 Support bkt 34	y & 13.07.06		HP-2-AIRT-AB-0005 (2)	y	Pipe support improved wrt thermal behavior in lower HTT area according to HP-2-ASED-SD-0099_Thermal_Decoupling_of_Tubing_Support see as run
121241-01 Support bkt 36	y		HP-2-AIRT-AB-0005 (2)	y	
121241-02 HOT HST	on HTT		HP-2-AIRT-AB-0001 Iss. 2, 22.06.04	y	HOT HST "red tags": All removed before LBTS1 mounting <ul style="list-style-type: none"> Flushing system Manometer Tooling bracket / support, pressure sensor line Tooling cap pressure sensor line
121241-02 Line 1	on HTT		HP-2-AIRT-AB-0001 (2)	y	
121241-02 HOT HST Bkt 7	15.12.04 & 19.06.06		HP-2-AIRT-AB-0001 (2)		mounted on lower SFW Pipe support improved wrt thermal behavior in lower HTT area according to HP-2-ASED-SD-0099_Thermal_Decoupling_of_Tubing_Support see as run
121241-02 HOT HST Bkt 10	on HTT		HP-2-AIRT-AB-0001 (2)		
121241-02 HOT HST Bkt 11	on HTT		HP-2-AIRT-AB-0001 (2)		
121241-02 HOT HST Bkt 12	on HTT		HP-2-AIRT-AB-0001 (2)		
121241-02 Line 2	6.5.04		HP-2-AIRT-AB-0001 (2)	y	wire locking line 2 to line 3 done NC-0817: wrong routing, clash with TS, reworked to fit by bending - closed
121241-02 HOT HST Bkt 5	6.5.04		HP-2-AIRT-AB-0001 (2)		
121241-02 HOT HST Bkt 6	6.5.04		HP-2-AIRT-AB-0001 (2)		

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121241-02 Line 3	6.5.04		HP-2-AIRT-AB-0001 (2)	y	30.6.06: Thermal connection of Line 3 to LSFW improved by mounting a Cu-wire between tube and frame.
121241-02 HOT HST Bkt 2	6.5.04		HP-2-AIRT-AB-0001 (2)		
121241-02 HOT HST Bkt 3	6.5.04		HP-2-AIRT-AB-0001 (2)		
121241-02 Line 4	6.5.04		HP-2-AIRT-AB-0001 (2)	y	wire locking line 4 to line 5 done
121241-02 HOT HST Bkt 1	6.5.04		HP-2-AIRT-AB-0001 (2)		
121241-02 Line 5	6.5.04 14.07.06		HP-2-AIRT-AB-0001 (2)	y	Pipe supports improved wrt thermal behavior in lower HTT area according to HP-2-ASED-SD-0099_Thermal_Decoupling_of_Tubing_Support see as run
121241-02 HOT HST Bkt 9	6.5.04		HP-2-AIRT-AB-0001 (2)		
121242-01 External Tubing		PFM	HP-2-AIRT-AB-0006, issue 2, 02.08.05	y	HP-2-ASED-DW-0180-01, issue A, 19.07.05 Hand rails on Pos. V506 is missing & Part 380 missing(Modification of A-frame); all screws are torqued External Tubing removed 30.04.06 Final Integration of external tubing 22.11.2006 acc. SD 0063 Removed acc. SD-0063 Iss.2 22.03.2007
121242-01 External Tubing Brackets		PFM	HP-2-ASED-DW-0158-01, issue A, 25.05.05	y	Removed acc. SD-0063 Iss.2 22.03.2007
121242-04 Nozzle support structure (A-frame)		PFM	HP-2-ASED-DW-0158-01, issue A, 25.05.05	y	NC-1451: Modified for Radiator Mounting See OW124/closed; removed 31.08.05 Integration on 14.09.2005; Removed 15.09.05 -A-Frame blocked the Harness Integration, finally integrated 17.09.05; removed 05.04.06 HP-2-ASED-SD-0063 Final integration 21.11.2006 acc. SD 0063 Removed acc. SD-0063 Iss.2 22.03.2007
121242-05 Nozzles	11.12.2007	STM 2 Large S/N1 Small S/N 1-2	HP-2-AIRT-AB-0006, issue 2, 02.08.05	Y	Acc. HP-2-ASED-DW-0159-01-0B & HP-2-ASED-DW-0180-04-0A NC-1553: Diameter of big nozzle enlarged to 3.3 mm Remove of STM nozzles and integration of FM nozzles acc. SD 0063 ; 21.11.06, removed 3 Nozzles and 2 distance rings on +Y / -Y side. Exchange sealing ring -> Helicoflex reintegration of Nozzles acc. SD-0063 03.01.07 Removed the small nozzles acc.SD0063 J.H. 24.10.2007SN1=TS05;SN2=TS06 Re-Integration of small nozzles at A-frame acc.SD0219 J.H. 11.12.2007
121250 HOT	05.05.04	PFM 02	HP-2-AIR-AB-0002 Iss. 2, 01.07.04 except: new Fix. pads HP-2-ASED-DW-0200-01, A	y	Including 4 adjusted shim pads (FM1 to FM4) between each pad and the lower SFW (ref:HP-2-AIR-DW-2141), shim thickness see HP-2-ASED-PR-0015, para 5.1.12.3* 09.06.05: HOT fixation pads replaced by new ones made from stainless steel, see HP-2-ASED-SD-

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					0098_as_run. Blade thickness 1,21- 1,22mm, old shims from STM campaign used
121263 VG 901 / 902	08.06.05 03.05.07	F-No. 387 / 388 F-No. 394	HP-2-ASED-DP-0036 /1 (Balzers No. BGG 18753)	y	VG 901 see NC-2574: VG 901 not functioning STM2 CVV; Exchange of VG901 (SN387) see NC-2574 03.05.2007 M.L.
121264 Ventline Test Valve V 506	09/2005	SN 02	Swagelock SS-4BG-VCR-HC-TUV HP-2-ASED-TR-0098, issue 1, 23.09.05	y	Valve 506 should be tested after Mech.Test AI: Hans Huber Valve 506 is tested acc. SD.0136 see NC 2452
121311 Lower bulkhead thermal shield 1	25.05.2007	PFM 01	HP-2-AIRS-AB-0003, Issue 1, 17.12.04	Y	Closure of MLI with Cyl. TS on 13.04.05, harness for T421 & T422 connected and tested De-mating 10.05.2006; Re-installed acc.PR-0023 on 03.07.06 Deintegrated 23.03.2007 K.R Final integrated acc.PR-0023 H.G.
121312 Lower bulkhead thermal shield 2	30.05.2007	PFM 01	HP-2-AIRS-AB-0003, Issue 1, 17.12.04	Y	Closure of MLI with Cyl. TS on 20.04.05, harness for T441 & T442 connected and tested NC-0649: I/F holes for T-sensor missing, reworked by ASED, closed. De-mating 10.05.2006; re-installed acc.PR-0023 on 04.07.06 NC-2409: Teflon tube bracket reworked to provide more clearance to TS3 Deintegrated 23.03.2007 K.R Final integrated acc.PR-0023 H.G.
121313 Lower bulkhead thermal shield 3	01.06.07	PFM 01	HP-2-AIRS-AB-0003, Issue 1, 17.12.04	Y	Closure of MLI with Cyl. TS ongoing, harness for T461 & T462 connected and tested De-mating 10.05.2006 Re-installed acc.PR-0023 on 06.07.06 Deintegrated 24.03.2007 K.R Final integrated acc.PR-0023 H.G.
121320 Cyl. Thermal Shields	20.12.04	PFM	HP-2-AIRS-AB-0002, Issue 2, 13.12.04	y	Positioned on Rotary Table around Tanks, supported on AI stands Sensors incl. harness were mounted at AIRS before MLI integration NC-2351: Delamination of NI-coating on cyl. TS1 at TSS 07 I/F, covered with S-425 AI-tape.
121331 Upper bulkhead thermal shield 1	29.11.07	PFM 01	HP-2-AIRS-AB-0004, Issue 2, 24.02.05	y	Harness for T423, T424 & A421, A422 connected and tested NC-1047: Enlarge cut-out at filling port, reworked, closed NC-2448: Cut-outs at TSS chains 5, 6, 7 enlarged due to new SPIRE harness routing Deintegrated 24.03.2007 K.R Final integrated acc.PR-0064 Iss1 22.10.07 Removal acc. PR-0049 Iss.3 14.11.2007 Finally integrated acc. PR-0064_2, harness connected and tested acc. ASED-SD-0190
121331-01 TS1 LOU Baffle	29.11.07	PFM	HP-2-ASED-DW-0125-01-0A		Baffle sheets black anodized acc. to HP-2-ASED-DW-0124-01-0A Modified LOU baffle mounted to TS1 according to HP-2-ASED-SD-0112 Removed acc. PR-0049 T.B. 03.04.07

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					Final integrated acc.PR-0064 Iss1 22.10.07 Removal acc. PR-0049 Iss.3 14.11.2007 Finally integrated acc. PR-0064_2
121332 Upper bulkhead thermal shield 2	30.11.07	PFM 01	HP-2-AIRS-AB-0004, Issue 2, 24.02.05	y	24.05.2005: Closure of MLI with Cyl. TS, Harness for T443, T444 connected and tested NC-1043: Cut-out reworked; NC-1098: Broken stand off repaired. Re- integrated; NC-2448: Cut-outs at TSS chains enlarged Deintegrated 25.03.2007 K.R Final integrated acc.PR-0064 Iss1 23.10.07 Removal acc. PR-0049 Iss.3 15.11.2007 Finally integrated acc. PR-0064_2, harness connected and tested acc. ASED-SD-0190 ASED-NC-3807: Broken stand-off
121332 Entrance Baffle	30.11.07	PFM	HP-2-AIRS-AB-0004, Issue 2, 24.02.05	y	Re- integrated Removed acc. PR-0049 T.B. 03.04.07 Final integrated acc.PR-0064 Iss1 23.10.07 Removal acc.PR-0049 Iss.3 15.11.2007 Finally integrated with TS 2 acc. PR-0064_2
121332 LOU Baffle	04.12.07	PFM	HP-2-AIRS-AB-0004, Issue 2, 24.02.05	y	Re- integrated with new HIFI stray light baffle Removed acc. PR-0049 T.B. 03.04.07 Final integrated acc.PR-0064 Iss1 23.10.07 Removal acc.PR-0049 Iss.3 15.11.2007 Finally integrated acc. PR-0064_2
121332 LOU Window Plate	04.12.07	PFM			Re- integrated acc. to HP-2-ASED-TP-0064 Removed acc. PR-0049 T.B. 03.04.07 Final integrated acc.PR-0064 Iss1 23.10.07 Removal acc.PR-0049 Iss.3 15.11.2007
121333 Upper bulkhead thermal shield3	04.12.07	PFM 01	HP-2-AIRS-AB-0004, Issue 2, 24.02.05	Y	02.06.2005: Closure of MLI with Cyl. TS, Harness for T463, T464 connected and tested NC-1044: Cut-out reworked Re- integrated; NC-2448: Cut-outs at TSS chains enlarged Deintegrated 26.03.2007 K.R Final integrated acc.PR-0064 Iss1 05.11.2007 Removal acc.PR-0049 Iss.3 15.11.2007 Finally integrated acc. PR-0064_2, harness connected and tested acc. ASED-SD-0190
121341 MLI on lower bulkhead thermal shields	01.06.07 By AAEM	PFM 01	HP-2-AAEM-LI-0024, Issue 1, 11.08.04	Y	Stand offs inside all 3 LB shields covered with AL tape (close out of open work item) NC-0946: Small damages on MLI repaired MLI at TSS chain feed throughs closed acc. to NC-0950 Partly opened for TS De-Mating 11.05.2006, finally closed 10.07.06 Partly opened for TS De-Mating 26.03.07 AAEM Finally closed acc.HP-2-AAEM-PR-0003 J.H.


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121342 MLI on cyl. th. shields	by AAEM 11/04	PFM	HP-2-AAEM-LI-0024, Issue 1, 11.08.04	y	MLI was integrated on Cy. Shields by AAEM at AIRS before shields delivery NC-0483: Cut-outs on MLI templates do not fit to cyl. TS, reworked, closed.
121343 MLI on upper bulkheads thermal shields	01.06.2005 by AAEM 06.07.06 05.11.2007 by AAEM 05.12.07 by AAEM	PFM 01	HP-2-AAEM-LI-0024, Issue 1, 11.08.04	Y	Stand offs inside UB shield 1 covered with AL tape, 20.4. (close out of open work item) Partly removed for De-Mating of TS; NC-2295: Damages found on MLI - closed. New final installation 06.07.06 by AAEM see PR-0023; see IR42 Cu bonding leads replaced by steel leads acc. to ASED-PR-0060 NC-2459: MLI repaired with Mylar-VDA tapes, additional SLI patches on TS1 MLI. Partly opened for TS De-Mating 26.03.07 AAEM 1. Final closure acc.HP-2-AAEM-PR-0003 J.H. 05.11.2007 Partly opened for TS De-Mating 16.11.2007 AAEM, Finally closed acc.HP-2-AAEM-PR-0003 J.H. 05.12.2007 ASED-NC-3789: MLI degraded
121343-02 LOU Baffle MLI		PFM	HP-2-AAEM-LI-0024, Issue 1, 11.08.04	y	NC-1162: LOU Baffle MLI bonding leads not connected for STM Modified and re-integrated and HP-2-ASED-PR-0059_1_AS_RUN See also AAEM-PR-0003 as run
121345 <u>HTT MLI</u>	30.09.-08.10.04	PFM	HP-2-AAEM-LI-0024 Iss. 1.0, 11.08.04 & HP-2-ASED-PR- 0059_1_AS_RUN	y	IRR: HP-2-ASED-MN-0770; Procedure: HP-2-AAEM-PR-0003 (1) See HP-2-ASED-PR-0059_1_AS_RUN: modification performed in order to close open areas and mount SLI patches over Accelerometer, heater, DLCM 1 and 2, H103, H104, not needed interface flanges (Adsorber I/F)
121345 MLI grounding wires	y	PFM	HP-2-AAEM-LI-0024 Iss. 1.0, 11.08.04		See HP-2-ASED-PR-0059_1_AS_RUN
121345-01 L0 pods MLI	LB 19.07.06 UB 28.07.06	PFM	HP-2-ASED-DW- 0212/213/....225/226-01-0A		L0 pods SLI covered acc. to HP-2-ASED-PR-0059_1_AS_RUN
121345-02 SV 123 MLI cap	27.07.06	PFM	HP-2-ASED-DW-0204-01-0A		SLI covered acc. to HP-2-ASED-PR-0059_1_AS_RUN
121345-03 PPS MLI cap	27.07.06	PFM	HP-2-ASED-DW-0205-01-0A		SLI covered acc. to HP-2-ASED-PR-0059_1_AS_RUN
Valve MLI covers V102, V103, V104, V105 integrated	27.07.06	PFM			acc. to HP-2-ASED-PR-0059_1_AS_RUN
121345-04 SLI for HTT open areas (tubing, flanges etc.)	27.07.06	PFM	HP-2-ASED-PR-0059-1_as_run		no drwg. issued, as built doc. is the as run procedure.

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121346 HOT MLI	16.-19.08.04 & 06.10.04 & 12.06.06	PFM	HP-2-AAEM-LI-0024 Iss. 1.0, 11.08.04		IRR: HP-2-ASED-MN-0729; Procedure: HP-2-AAEM-PR-0003 (1) All integrated on 16.-19.8.04, except closure at accelerometer / harness region, closed on 06.10.04 See NCR: HP-2-ASED-121346-NC-2353 Outer layer tape opened and re-fixed, grounding cable cut and re-crimped with longer cable status 20.06.06 OW 279 closed 21.06.06
121346 MLI grounding wires GP1, GP2	Y	PFM			Grounding cables integrated see EIDP HP-2-ASSE-DP-0006
121347 Filling port MLI	28.07.06	PFM	HP-2-ASED-DW-0227-01-0A HP-2-ASED-DW-0228-01-0A		modified FP MLI mounted acc. to ASED-PR-0060
121348 SLI on (cryo) components at low. SFW	Y	PFM	HP-2-ASED-PR-0059-1_as_run		as built doc. is the as run procedure, all accessible tubing parts covered with SLI; Components covered with SLI: V701, V702, SV723, V105, RD724 flange, P701.
121351 -01 Ext. Lower Bulkhead MLI -Layer 1 -Layer 2 -Layer 3 -Layer 4	02.08.07	PFM	HP-2-AAEM-DP-0005, Iss: 2.0	y	HP-2-AAEM-PR-0004 Removed 28.02.2007 J.H. & AAEM; Visual Inspection performed
121351-02 Ext. CVV Cylinder MLI -Layer 1 -Layer 2 -Layer 3 -Layer 4		PFM	HP-2-AAEM-DP-0005, Iss: 2.0	Y	HP-2-AAEM-PR-0004 Modified in order to give access to P02 Closure of NCR 1508: CVV blankets too short. Repaired for STM, some new blankets needed for PFM MLI at +Y radiator closed on 11.01.06 Removed 23.03.2006 HP-2-ASED-SD-0092; NC-1595
121351-03 Ext. Upper Bulkhead MLI -Layer 1 -Layer 2 -Layer 3 -Layer 4		PFM	HP-2-AAEM-DP-0005, Iss: 2.0	y	HP-2-AAEM-PR-0004 Removed 23.03.2006 HP-2-ASED-SD-0092; NC-1595
121353 LOU MLI		PFM	HP-2-AAEM-LI-0037, issue draft 2, 01.07.05	y	De-integrated
121421-01 T 702	23.07.04	JX 74	HP-2-ASED-DP-0050, Issue 1, 25.04.05	y	C 100

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121421-01 T 703	23.07.04	JX 75	HP-2-ASED-DP-0050, Issue 1, 25.04.05	y	C 100
121421-01 T106	3.8.04	JX72	"	y	C100, covered with 5 layer crinkled MLI on 01.04.05
121421-01 T107	3.8.04	JX73	"	y	C100
121421-01 T113	cancelled	KJ 03	"	y	C100 with reduced width, glued to Filling Port, NC-2307: disintegrated on 13.07.06, SD 101
121421-01 T114	cancelled	KJ 09	"	y	C100 with reduced width, glued to Filling Port, NC-2307: disintegrated on 13.07.06, SD 101
121421-01 T 115	18.07.06	KT90	HP-2-ASED-DP-0051, issue 1, 25.04.05	y	PT 1000 ASED-SD-0101, connected to T113 connector
121421-01 T 116	18.07.06	KR34	"	y	PT 1000 ASED-SD-0101, connected to T114 connector
121421-01 Temp. Sensor T117	17.07.06	KV 90	HP-2-ASED-DP-0050, Issue 1, 25.04.05	Y	C 100, electr. checked and torqued 19.07.06 ASED-SD-0101, harness re-routed
121421-01 Temp. Sensor T118	17.07.06	KV 91	"	Y	C 100, electr. checked and torqued 19.07.06 ASED-SD-0101, harness re-routed
121421-01 Temp. Sensor T202	17.11.04	KO 38	"	Y	C 100, electr. checked and torqued 09.02.05
121421-01 Temp. Sensor T208	17.11.04	KO 40	"	Y	C 100, electr. checked and torqued 09.02.05
121421-01 Temp. Sensor T254	01.12.04	KO 68	"	Y	C 100 electr. checked and torqued 09.02.05
121421-01 Temp. Sensor T256	14.12.04	KO 69	"	Y	C 100, electr. checked and torqued 09.02.05
121421-01 Temp. Sensor T258	14.12.04	KO 70	"	Y	C 100, electr. checked and torqued 09.02.05
121421-01 Temp. Sensor T221	15.05.2007	K045	"	Y	C 100, electr. checked and torqued on 09.05.05 removed 19.04.2007 Geiger Final Integration acc.PR-0086 H.G. on Red Detector flex link
121421-01 Temp. Sensor T222	15.05.2007	K046	"	Y	C 100, electr. checked and torqued removed 19.04.2007 Geiger Final Integration acc.PR-0086 H.G. on Evaporator flex link

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121421-01 Temp. Sensor T223	15.05.2007	K047	"	Y	C 100, electr. checked, torqued NC-0775: broken bolt, closed removed 19.04.2007 Geiger Final Integration acc.PR-0086 H.G. on Cooler Pump flex link
121421-01 Temp. Sensor T224	15.05.2007	K048	"	Y	C100, electr. checked and torqued 15.02.05 removed 19.04.2007 Geiger Final Integration acc.PR-0086 H.G. on Blue Detector flex link
121421-01 Temp. Sensor T225	14.02.05	K049	"	Y	C 100, P01 had to be rotated by 180° electr. checked and torqued 15.02.05
121421-01 Temp. Sensor T226	20.07.06	KV89	"	Y	C 100, electr. checked and torqued 20.07.06 (old KO50 replaced by KV89)
121421-01 Temp. Sensor T227	14.02.05	K051	"	Y	C 100, P01 had to be rotated by 180° electr. checked and torqued 15.02.05
121421-01 Temp. Sensor T228	14.02.05	K052	"	Y	C 100, electr. checked and torqued 15.02.05
121421-01 Temp. Sensor T231	17.11.04	KO 53	HP-2-ASED-DP-0050, Issue 1, 25.04.05	Y	C 100, electr. checked and torqued 09.02.05
121421-01 Temp. Sensor T232	17.11.04	KO 54	"	Y	C 100, electr. checked and torqued 09.02.05
121421-01 Temp. Sensor T233	17.11.04	KO 55	"	Y	C 100, electr. checked and torqued 09.02.05 NC-0683: AI closed by shimming on 3.2.05 NC-1015: broken bolt, fixed with Kapton tape
121421-01 Temp. Sensor T234	17.11.04	KO 56	"	Y	C 100 electr. checked and torqued 09.02.05
121421-01 Temp. Sensor T235	17.11.04	KO 57	"	Y	C 100, electr. checked and torqued 09.02.05 NC-0683: AI closed by shimming on 3.2.05
121421-01 Temp. Sensor T236	17.11.04	KO 58	"	Y	C 100, electr. checked and torqued 09.02.05 NC-0683: AI closed by shimming on 3.2.05
121421-01 Temp. Sensor T237	17.11.04	KO 60	"	Y	C 100, electr. checked and torqued 09.02.05

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121421-01 Temp. Sensor T238	13.07.06	MH 20	"	Y	PT 1000, electr. checked and torqued 19.07.06 ASED-SD-0101, harness re-routed
121421-01 Temp. Sensor T239	13.07.06	MH 21	"	Y	PT 1000, electr. checked and torqued 19.07.06 ASED-SD-0101, harness re-routed
121421-01 Temp. Sensor T242	11.02.05	KO 61	"	Y	C 100, electr. checked and torqued 11.02.05
121421-01 Temp. Sensor T244	25.07.2007	KO 62	"	Y	C 100, electr. checked and torqued 11.02.05 C 100, electr. checked and torqued 25.07.2007 A.G.
121421-01 Temp. Sensor T248	11.02.05	KO 65	"	Y	C 100, electr. checked and torqued 11.02.05
121421-01 Temp. Sensor T246	17.11.04	KO 63	"	Y	C 100, electr. checked and torqued 09.02.05
121421-01 Temp. Sensor T247	17.11.04	KO 64	"	Y	C 100, electr. checked and torqued 09.02.05
121421-01 Temp. Sensor T250	15.02.05	KO66	HP-2-ASED-DP-0050, Issue 1, 25.04.05	Y	C 100, electr. checked and torqued 16.02.05
121421-01 Temp. Sensor T252	15.02.05	KO67	HP-2-ASED-DP-0050, Issue 1, 25.04.05	Y	C 100, electr. checked and torqued 16.02.05
121421-01 Temp. Sensor T212	25.04.05	KO42	HP-2-ASED-DP-0050, Issue 1, 25.04.05	Y	C 100, glued to OB shield with Stycast 2850 ST electr. grounding done with AL-tape
121421-01 Temp. Sensor T213	25.04.05	KO43	HP-2-ASED-DP-0050, Issue 1, 25.04.05	Y	C 100, glued to OB shield with Stycast 2850 ST electr. grounding done with AL-tape
121421-01 T862	17.03.05	KO44	HP-2-ASED-DP-0050, Issue 1, 25.04.05	y	C 100
121421-02 T 321 T 322 T 323 T 324	22.08.05	LS 19 LS 20 LS 25 LS 26	HP-2-ASED-DP-0051, issue 1, 25.04.05	y	PT 1000 on SVM TS


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121421-02 T 501	15.09.05	LS23	HP-2-ASED-DP-0051, issue 1, 25.04.05	y	PT 1000
121421-02 T 505	16.09.05	LS29	"	y	PT 1000
121421-02 T 506	16.09.05	LS34	"	y	PT 1000
121421-02 T 506	16.09.05	LS36	"	y	PT 1000
121421-02 T 601	y	ISO 8	"	y	PT 1000 on cover
121421-02 T 602	y	ISO 9	"	y	PT 1000 on cover
121421-02 T 651	y	KR32	"	y	PT 1000 on cryo baffle
121421-02 T 652	y	KR33	"	y	PT 1000 on cryo baffle
121421-02 T 901		LS27	"	y	PT 1000 Removed during TMS installation 31.05.2007
121421-02 T 902	09.09.05	LS28	"	y	PT 1000
121421-02 T 903	12.09.05	LS38	"	y	PT 1000
121421-02 T 904	12.09.05	LS40	"	y	PT 1000
121421-02 T 905	09.09.05	LS35	"	y	PT 1000

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121421-02 T 906	y	LS43	"	y	PT 1000
121421-02 T 907	10.01.06	LS17	"	y	PT 1000; NC-1851: +Y Radiator Upper part removed for repair. Radiator Upper part installed; T907 connected ; NC-1941: one bolt on sensor connector slightly bent, to be replaced for PFM
121421-02 T 908	13.09.05	LS18	"	y	PT 1000
121421-02 T 909	12.09.05	KR20	"	y	PT 1000
121421-02 T 910	12.09.05	LS30	"	y	PT 1000
121421-02 T 911	12.09.05	LS41	"	y	PT 1000
121421-02 T 912	12.09.05	KO22	"	y	PT 1000
121421-02 T 931	13.09.05	MH22	"	y	PT 1000 on LOU
121421-02 T 932	13.09.05	MH25	"	y	PT 1000 on LOU
121421-02 T 933	y	LS33	"	y	PT 1000 on LOR; final integration after LOR integration
121421-02 T 934	15.09.05	KO23	"	y	PT 1000 with cut ears on LOU
121421-02 T 935	15.09.05	LS42	"	y	PT 1000 with cut ears on LOU
121421-02 T 701	06.08.04	KR 23	HP-2-ASED-DP-0051, Issue 1, 28.01.05	y	PT 1000 NCR: 0354, T701 changed from original SN KO 05 due to broken connector screw
121421-02 T 704	06.08.04	KR 26	HP-2-ASED-DP-0051, Issue 1, 28.01.05	y	PT 1000, T704 changed from original SN KO 09

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121421-02 T103	3.8.04	KH10		y	PT1000, covered with 5 layer crinkled MLI on 01.04.05
121421-02 Temp. Sensor T207	17.11.04	KR 27	HP-2-ASED-DP-0051, Issue 1, 25.04.05	Y	PT 1000, electr. checked and torqued 09.02.05
121421-02 Temp. Sensor T253	01.12.04	KR 31	HP-2-ASED-DP-0051, Issue 1, 25.04.05	Y	PT 1000, electr. checked and torqued 09.02.05
121421-02 Temp. Sensor T255	01.12.04	KT 97	HP-2-ASED-DP-0051, Issue 1, 25.04.05	Y	PT 1000, electr. checked and torqued 09.02.05
121421-02 Temp. Sensor T249	15.02.05	KR29	HP-2-ASED-DP-0051, Issue 1, 25.04.05	Y	PT 1000, electr. checked and torqued 16.02.05
121421-02 Temp. Sensor T251	15.02.05	KR30	HP-2-ASED-DP-0051, Issue 1, 25.04.05	Y	PT 1000, electr. checked and torqued 16.02.05
121421-02 Temp. Sensor T211	25.04.05	KR28	HP-2-ASED-DP-0051, Issue 1, 25.04.05	Y	PT 1000, glued to OB shield with Stycast 2850 ST electr. grounding done with AL-tape
121421-02 Thermistor T462 & CCH DCB22 on cyl. thermal shield 3	11 / 04	KU01	HP-2-ASED-DP-0051, Issue 1, 25.04.05; HP-2-CASA-AB-0002, issue 1, 07.07.04	Y	PT 1000 Procedure: HP-2-ASED-TP-0028
121421-02 Thermistor T442 & CCH DCA 21 on cyl. thermal shield 2	11 / 04	KH13	"	Y	PT 1000 Procedure: HP-2-ASED-TP-0028
121421-02 Thermistor T422 & CCH DCB 21 on cyl. thermal shield 1	11 / 04	KU02	"	Y	PT 1000 Procedure: HP-2-ASED-TP-0028 NC-0504: broken screw, reworked, closed.
121421-02 T801	See remark	KR34	HP-2-ASED-DP-0051, Issue 1, 25.04.05 PT 1000	Y	Procedure: HP-2-ASED-TP-0047, bonded with Stycast 2850 FT acc. to ISO-MP-BEB00.020, Issue 1 on AlMgSi 1Cu washers acc. to HP-2-ASED-DW-0138-01-0B NC-0820: Bonding directly on Ni coated CuBe failed during sample test, NRB: Introduction of additional AlMgSi 1Cu washers acc. to HP-2-ASED-DW-0138-01-0B T801 removed and changed with T 872, harness extended
121421-02 T802	08.03.05	KH11	"	Y	Al tape over sensor
121421-02 T803	08.03.05	KH12	"	y	"

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121421-02 T804	See remark	KT90	"	Y	T804 removed and changed with T 871, harness extended
121421-02 T805	09.03.05	KT93	"	Y	Al tape over sensor "
121421-02 T806	09.03.05	KT94	"	Y	"
121421-02 T851	09.03.05	KT95	"	Y	Procedure: HP-2-ASED-TP-0046, NC-0820 and bonding remarks as for T801
121421-02 T852	09.03.05	KT98	"	Y	"
121421-02 T853	09.03.05	KU04	"	Y	"
121421-02 T861	17.03.05	KO09	"	Y	"
121421-02 T871 LSFW near TSS 13	20.06.06	LS 39	HP-2-ASED-DP-0051, Issue 1, 25.04.05	Y	PT 1000 Procedure HP-2-ASED-SD-0101_1_PLM MLI modifications_add sensors New sensor, changed with T 804 see SD-0101, Harness extended from T804
121421-01 T872 LSFW near TSS 13	20.06.06	KV 85	HP-2-ASED-DP-0050, Issue 1, 25.04.05	Y	C100 Procedure HP-2-ASED-SD-0101_1_PLM MLI modifications_add sensors New sensor, changed with T 801 see SD-0101, Harness extended from T 801
121421-02 Thermistor T461 & CCH DCA23 on lower bulkh. thermal shield 3	12.01.05	KO20	HP-2-ASED-DP-0051, Issue 1, 25.04.05; HP-2-CASA-AB-0002, issue 1, 07.07.04	Y	PT 1000 Procedure: HP-2-ASED-TP-0045 (NC-0651: M3 holes in connector brackets changed to 4.3, covered by HP-2-ASED-DP-0028, issue 2)
121421-02 Thermistor T441 & CCH DCB 23 on lower bulkh. thermal shield 2	12.01.05	KO12	"	Y	PT 1000 Procedure: HP-2-ASED-TP-0045
121421-02 Thermistor T421 & CCH DCA 22 on lower bulkh. thermal shield 1	12.01.05	KO11	"	Y	PT 1000 Procedure: HP-2-ASED-TP-0045
121421-02 Thermistor T463 & CCH DCE11 on upper bulkh.	04.03.2005	KO14	"	Y	See also drawing 2547-121430-100-1B-0B, "Herschel PFM Cryostat harness internal CCH & SIH"

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thermal shield 3					
121421-02 Thermistor T464 & CCH DCA11 on upper bulkh. thermal shield 3	04.03.2005	KO15	"	Y	See also drawing 2547-121430-100-1B-0B, "Herschel PFM Cryostat harness internal CCH & SIH"
121421-02 Thermistor T443 & CCH DCE12 on upper bulkh. thermal shield 2	07.03.2005	KO13	"	Y	
121421-02 Thermistor T444 & CCH DCB11 on upper bulkh. thermal shield 2	07.03.2005	KO25	"	Y	
121421-02 Thermistor T423 & CCH DCE13 on upper bulkh. thermal shield 1	08.03.2005	LS31	"	Y	
121421-02 Thermistor T424 & CCH DCA12 on upper bulkh thermal shield 1	08.03.2005	LS32	"	Y	
121422-01 Pressure Sensor P501	01.09.05	PFM S/N 510214	HP-2-ASED-DP-0033 Iss. 1, 16.03.04	Y	
121422-01 P701	13.01.05	FM2, SN 510212	HP-2-ASED-DP-0033 Iss. 1, 16.03.04	y	NC-0307: New design of pressure sensor bracket NC-0442: I/F deviation btw. P701 and int. CCH (different connector types, harness adaptor added)
121422-01 P101	preliminary fixed for test 11.6.04; final mech. integr. 13.1.05	FM1, SN 510211	HP-2-ASED-DP-0033 Iss. 1, 16.03.04	y	NCR-0272, Press sensor dropped NCR-0277, incorrect p. sensor bracket design NCR-0442, P701 harness (CCH CCA11) has a MDM 9P, this will not fit to sensor, ASE / CASA have to make an adaptor to sensor circular connector; adaptors with FM connector (baked) installed on 21.2.05, finally fixed and mated on 9.3.05
121422-01 P101 Support Plate	y			y	
121422-01 P101 bkt (front/rear)	y		NCR-0277	y	NCR-0277, incorrect p. sensor bkt design, corrected, closed

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121422-01 P701 upper / lower bracket	y		NCR - 0307	y	NCR - 0307: re-design and manufacture at AIR, closed
121422-02 Pressure Sensor P502	16.11.06	QM, SN 951634	HP-2-ASED-DP-0032 Iss. 1, 16.03.04	Y	NC-1519: Harness adapter installed for TB/TV test to correct contact problem, adapter removed before sine test Remove of QM 13.06.06 H. Huber Reintegration acc. SD 0063 16.11.06 Torque 20 Nmr.; harness adapter should be integrated see NC-1519; harness adapter integrated 23.11.2006 A.G.
121423 A701	24.9.04	Endevco SN 11837	Endevco Model 2272 HP-2-ASED-TR-0031 /1	y	calibrated together with accel. harness
121423 A702	24.9.04	Endevco SN 11585	"	y	calibrated together with accel. harness
121423 A703	24.9.04	Endevco SN 11841	"	y	calibrated together with accel. harness
121423 Accelerometer (A201 to A206)	3.1.05	Endevco 11842 11840 Endevco 11844 Endevco 11826 Endevco 11851 Endevco 11848	"	y	first Hammertest performed 19.01.05 Observation at A 206 on 18.4.05: Shrink sleeve bend at connector to A 206. Kapton tape wrapped around for protection, health check and noise measurement on 21.4.05 ok.
121423 Accelerometer (A207 and A208)	See remark	Endevco 11865 Endevco 11843		y	PACS MTD accelerometers; Removed 12.04.07 acc. PACS MTD removal T.B. Harness for Accelerometer finally terminated
121423 Accelerometer A421 on upper bulkhead thermal shield 1	xx.03.2005	SN 11847	"	Y	
121423 Accelerometer A422 on upper bulkhead thermal shield 1	xx.03.2005	SN 11850	Endevco Model 2272 HP-2-ASED-TR-0031 /1	Y	
121423 A101	24.9.04	Endevco SN 11833	"	calibrated	calibrated together with accel. harness; insulated with Kapton tape
121423 A102	24.9.04	Endevco SN 11846	"	calibrated	calibrated together with accel. harness; insulated with Kapton tape
121423 A103	24.9.04	Endevco SN 11839	"	calibrated	calibrated together with accel. harness; insulated with Kapton tape

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121423 A104	24.9.04	Endevco SN 11849	"	calibrated	calibrated together with accel. harness; insulated with Kapton tape
121423 A105	24.9.04	Endevco SN 11825	"	calibrated	calibrated together with accel. harness; insulated with Kapton tape
121423 A106	24.9.04	Endevco SN 11845	"	calibrated	calibrated together with accel. harness; insulated with Kapton tape
121423 A107	24.9.04	Endevco SN 11832	"	calibrated	calibrated together with accel. harness; insulated with Kapton tape
121423 A108	24.9.04	Endevco SN 11580	"	calibrated	calibrated together with accel. harness; insulated with Kapton tape
121423 A109	24.9.04	Endevco SN 11876	"	calibrated	calibrated together with accel. harness; insulated with Kapton tape
121424 HOT Accelerometer block type 1	28.7.04		HP-2-ASED-DW-0046	n.a.	Installed on HOT
121425 Adaptor Block Type 2 (4 x)	3.1.05		HP-2-ASED-DW-0047-01-0A	n.a.	LN 9016 washers used for mounting instead of HV 100
121426 Accel. blocks type 3 (+x / -x)	3.8.04		HP-2-ASED-DW-0059-01-0A	n.a.	(Qty = 2)
121427 Accel. block type 4	24.9.04		HP-2-ASED-DW-0060-01-0A	n.a.	Hammer test on A101 - A109 performed on 27.9.04
121431-01 <u>HOT CCH Bundles</u>			see below	y	From cryo components to Lower SFW CBs Ref: HP-2-ASED-TP-0022 (1) IRR: HP-2-ASED-MN-0729
121431-01 DCE 28	4.8.04		HP-2-CASA-AB-0004 Iss. 1, 28.07.04	y	L701 / H701 NCR 0343 - , LLP wiring change (closed)
121431-01 DCE 29	4.8.04		HP-2-CASA-AB-0004 Iss. 1, 28.07.04	y	L702 / H702 NCR 0343 - , LLP wiring change (closed)
121431-01 DCB 24	30.7.04		HP-2-CASA-AB-0003 Iss. 1, 20.07.04	y	T701 / T703 NC-0833, insulation damaged at HOT HST brkt 7, repaired and checked - closed
121431-01 DCE 24	30.7.04		HP-2-CASA-AB-0003 Iss. 1, 20.07.04	y	T702 / T704

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121431-01 DCE 25	27.9.04		HP-2-CASA-AB-0004 Iss. 1, 28.07.04	y	A701, 702, 703 hammer test performed on 27.9.04
121431-01 CCH			HP-2-CASA-AB-0011 Iss. 1, 22.02.05	y	AB-0011 is the cover-ABCL for all internal CCH, IRR: HP-2-ASED-MN-0749 ASED-SD-0101: Routing of internal CCH modified
121431-01 DCM22	7.9.04		HP-2-CASA-AB-0004 Iss. 1, 28.07.04	y	
121431-01 DCM21	7.9.04		HP-2-CASA-AB-0004 Iss. 1, 28.07.04	y	
121431-01 DCA24	y		HP-2-CASA-AB-0004 Iss. 1, 28.07.04	y	
121431-01 DCB25	7.9.04		HP-2-CASA-AB-0004 Iss. 1, 28.07.04	y	
121431-01 DCE32	6.9.04		HP-2-CASA-AB-0004 Iss. 1, 28.07.04	y	
121431-01 DCE33	24.9.04		HP-2-CASA-AB-0004 Iss. 1, 28.07.04	y	
121431-01 DCE34	24.9.04		HP-2-CASA-AB-0004 Iss. 1, 28.07.04	y	
121431-01 DCM23	2.9.04		HP-2-CASA-AB-0004 Iss. 1, 28.07.04	y	
121431-01 DCE27	2.9.04		HP-2-CASA-AB-0003 Iss. 1, 20.07.04	y	
121431-01 DCE30	7.9.04		HP-2-CASA-AB-0003 Iss. 1, 20.07.04	y	ASED-NC-0343 (closed): Pin allocation for L101 & L102 corrected
121431-01 DCM24	2.9.04		HP-2-CASA-AB-0003 Iss. 1, 20.07.04	y	
121431-01 DCE26	15.9.04		HP-2-CASA-AB-0006 Iss. 1, 10.09.04	y	
121431-01 DCE31	7.9.04		HP-2-CASA-AB-0004 Iss. 1, 28.07.04	y	ASED-NC-0343 (closed): Pin allocation for L101 & L102 corrected
121431-01 DCB17	15.9.04		HP-2-CASA-AB-0003 Iss. 1, 20.07.04	y	
121431-01 DCA18	15.9.04		HP-2-CASA-AB-0003 Iss. 1, 20.07.04	y	

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121431-01 DCE 22	13.01.05		HP-2-CASA-AB-0006 Iss. 1, 10.09.04	y	to A20X
121431-01 DCE 23	13.01.05		HP-2-CASA-AB-0006 Iss. 1, 10.09.04	y	to A20X, DCE 23 re-routed on after OBA fit check on 21.01.2005, see log book and HP-2-ASED-TP-0044
121431-01 DCE 16	23.07.06		Acc.: HP-2-ASED-SD-0101	Y	Harness for new Sensors: T117 (C100; tubing), T118 (C100; tubing), T238 (PT1000; OBA ventline), T239 (PT1000; existing sensor T207
121431-01 DCE 17	10.05.05		HP-2-CASA-AB-0002, issue 1, 07.07.04	y	
121431-01 DCA 17	10.05.05		HP-2-CASA-AB-0002, issue 1, 07.07.04	y	
121431-01 DCB 16	10.05.05		HP-2-CASA-AB-0002, issue 1, 07.07.04	y	
121431-01 DCE 21	xx.03.2005	PFM	HP-2-CASA-AB-0003 Iss. 1, 20.07.04	y	
121431-01 DCA 13	02.02.05	PFM	HP-2-CASA-AB-0003 Iss. 1, 20.07.04	y	CCH integration acc. to HP-2-ASED-TR-0065
121431-01 DCB 12	02.02.05	PFM	"	y	
121431-01 DCA 14	03.02.05	PFM	"	y	Thermal brackets not yet fastened - open work #45, closed on 3.2.05
121431-01 DCB 13	03.02.05	PFM	"	y	
121431-01 DCE 15	03.02.05	PFM	"	y	NC-0766: wires broken (T249), repaired on 15.2.05, NCR closed.
121431-01 DCA 16	02.02.05	PFM	"	y	
121431-01 DCB 15	02.02.05	PFM	"	y	
121431-01 DCE 16	02.02.05 17.07.06	PFM	"	y	Remounted after modifications performed according to ACR-SD-0111 add temp sensor lines
121431-01 CCE11	21.02.2005	PFM	HP-2-CASA-AB-0009, issue 1, 17.12.04	Y	thermal bracket on TSS strap 11


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121431-01 CCE12	21.02.2005	PFM	HP-2-CASA-AB-0005, issue 1, 06.08.04	Y	thermal bracket on TSS strap 11
121431-01 CCA11	21.02.2005	PFM	HP-2-CASA-AB-0009, issue 1, 17.12.04	Y	thermal bracket on TSS strap 18
121431-01 CCB11	22.02.2005	PFM	HP-2-CASA-AB-0009, issue 1, 17.12.04	Y	thermal bracket on TSS strap 18
121431-01 CCA12	22.02.2005	PFM	"	Y	thermal bracket on TSS strap 17
121431-01 CCB12	22.02.2005	PFM	"	Y	thermal bracket on TSS strap 17
121431-01 CCE13	22.02.2005	PFM	"	Y	thermal bracket on TSS strap 16
121431-01 CCE14	22.02.2005	PFM	"	Y	thermal bracket on TSS strap 16
121431-01 CCA10	23.02.2005	PFM	"	Y	thermal bracket on TSS strap 8 short jackposts exchanged by long ones to allow mounting of lock washers
121431-01 CCB10	23.02.2005	PFM	"	Y	thermal bracket on TSS strap 8 short jackposts exchanged by long ones to allow mounting of lock washers
121431-01 CCE10	23.02.2005	PFM	"	Y	thermal bracket on TSS strap 8 short jackposts exchanged by long ones to allow mounting of lock washers NC-0825: Two broken wires to T249 & T253, repaired, closed.
121431-01 CCE20	23.02.2005	PFM	HP-2-CASA-AB-0005, issue 1, 06.08.04	Y	thermal bracket on TSS strap 8 short jackposts exchanged by long ones to allow mounting of lock washers
121431-01 CCS11	See remark	SPARE	HP-2-CASA-AB-0009, issue 1, 17.12.04	y	SPARE, will not be integrated, no T/C bracket potted
121431-02 CCH-ICA-10	28.07.05	PFM	HP-2-CASA-AB-0018, issue 2, 29.07.05	y	ext. CCH: HP-2-ASED-TP-0076
121431-02 CCH-ICB-10	27.08.05	PFM	"	y	
121431-02 CCH-ICE-10	y	PFM	"	y	
121431-02 CCH-ICE-20	y	PFM	"	y	

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121431-02 CCH-ICE-11	28.07.05	PFM	"	Y	
121431-02 CCH-ICE-12	y	PFM	"	Y	
121431-02 CCH-ICE-13	27.07.05	PFM	"	Y	
121431-02 CCH-ICE-14	27.07.05	PFM	"	Y	
121431-02 CCH-ICA-11	26.07.05	PFM	"	Y	
121431-02 CCH-ICA-12	28.07.05	PFM	"	Y	
121431-02 CCH-ICB-11	28.07.05	PFM	"	Y	
121431-02 CCH-ICB-12	28.07.05	PFM	"	Y	
121431-02 CCH-ICE-31	31.08.05	PFM	"	Y	
121431-02 CCH-ICE-32	31.08.05	PFM	"	Y	
121431-02 CCH-ICE-33	y	PFM	"	Y	
121431-02 CCH-ICE-34	y	PFM	"	Y	
121431-02 CCH-ICE-36	y	PFM	"	Y	

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121431-02 CCH-ICA-31	27.07.05	PFM	"	y	
121431-02 CCH-ICB-31	27.07.05	PFM	"	y	
121431-02 CCH-ICA-33	27.08.05	PFM	"	y	
121431-02 CCH-ICB-33	18.09.05	PFM	"	y	
121431-02 CCH-ICS-31	29.08.05	PFM	"	y	
121431-02 CCH-ICA-34	18.09.05	PFM	"	y	
121431-02 CCH-ICB-34	18.09.05	PFM	"	y	
121431-02 CCH-ICS-36	29.08.05	PFM	"	y	
121431-02 CCH-ICS-32	y	PFM	"	y	
121431-02 CCH-ICS-33	y	PFM	"	y	
121431-02 CCH-ICE-35	27.09.05	PFM	"	y	
121431-02 CCH-ICS-37	y	PFM	"	y	
121431-02 CCH-ICS-38	y	PFM	"	y	


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121431-02 CCH-ICA-32	01.08.05	PFM	"	y	NC-1941: one connector bolt bent on 21T907-P01, bolt to be replaced for PFM
121431-02 CCH-ICB-32	17.08.05	PFM	"	y	
121431-02 CCH-ICA-51	See remark	PFM	"	y	HSS Sunshade; not integrated on STM level
121431-02 CCH-ICB-51	See remark	PFM	"	y	HSS Sunshade; not integrated on STM level
121431-02 CCH-ICA-41	22.09.05	PFM	"	y	SVM TS
121431-02 CCH-ICB-41	22.09.05	PFM	"	y	SVM TS
121432 Harness anchors (cable support rails)	05.10./ 21.10.04	PFM	2547-121432-15S-01-0A HP-2-ASED-DP-0028, iss. 2	n.a.	bonded with EC 2216; on 03.11.04 eight anchors removed and re-bonded in corrected position; position of all anchors checked and now ok. After harness integration lock wires applied on all upper and lower anchors
121432 Thermal bracket Assy on TSS chains 11, 16, 17, 18 (lower SFW)	22.03.05	PFM	2547-121432-156-01-0A 2547-121432-157-01-0A HP-2-ASED-DP-0028, iss. 2	y	Spacer width: 39.2 on chain 11 and 16; Spacer width: 43.2 on chain 17 and 18
121432-01 SIH-CH-01	14.07.06	PFM	HP-2-CASA-AB-0012, iss. 2, 18.04.05	y	finally routed and connected to HIFI CQM, ASED-SD-0110
121432-01 SIH-CH-02	14.07.06	PFM	"	y	finally routed and connected to HIFI CQM, ASED-SD-0110 NC-0816: Width of thermal bracket, reworked by ASED
121432-01 SIH-CH-03	14.07.06	PFM	"	y	finally routed and connected to HIFI CQM, ASED-SD-0110
121432-01 SIH-CH-04	14.07.06	PFM	"	y	finally routed and connected to HIFI CQM, ASED-SD-0110 NC-0816: Width of thermal bracket, reworked by ASED
121432-01 SIH-CH-05	22.03.05 14.07.06	PFM	"	y	FT connector J17 installed with non baked O-ring seal, accepted for this single case.
121432-01 SIH-CS-01 SPIRE J-FET harness	06.05.05 19.07.06	PFM	HP-2-CASA-AB-0013, iss. 1 rev.1, 18.07.05	y	finally routed and connected to SPIRE CQM, re-routed acc. to ASED-SD-0101 NC-0805: Backshell modified NC-0975: Outer and inner SPIRE wire shield contact, repaired by CASA.


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121432-01 SIH-CS-02 SPIRE J-FET harness	15.04.05 19.07.06	PFM	"	y	finally routed and connected to SPIRE CQM, re-routed acc. to ASED-SD-0101 NC-0805: Backshell modified; NC-0895: Error in ICD, H/W is o.k.
121432-01 SIH-CS-03	06.05.05 19.07.06	PFM	"	y	finally routed and connected to SPIRE CQM NC-0805: Backshell modified NC-0975: Outer and inner SPIRE wire shield contact, repaired by CASA.
121432-01 SIH-CS-04	15.04.05 19.07.06	PFM	"	y	finally routed and connected to SPIRE CQM
121432-01 SIH-CS-05	15.04.05 19.07.06	PFM	"	y	finally routed and connected to SPIRE CQM
121432-01 SIH-CS-06	15.04.05 19.07.06	PFM	"	y	finally routed and connected to SPIRE CQM
121432-01 SIH-CS-07	15.04.05 19.07.06	PFM	"	y	finally routed and connected to SPIRE CQM
121432-01 SIH-CS-08	18.04.05 19.07.06	PFM	"	y	finally routed and connected to SPIRE CQM
121432-01 SIH-CS-09	18.04.05 19.07.06	PFM	"	y	finally routed and connected to SPIRE CQM
121432-01 SIH-CS-10	18.04.05 19.07.06	PFM	"	y	finally routed and connected to SPIRE CQM, re-routed acc. to ASED-SD-0101
121432-01 SIH-CS-11	15.04.05 19.07.06	PFM	"	y	finally routed and connected to SPIRE CQM, re-routed acc. to ASED-SD-0101
121432-01 SIH-CS-12	18.04.05 19.07.06	PFM	"	y	finally routed and connected to SPIRE CQM, re-routed acc. to ASED-SD-0101
121432-01 SIH-CS-13	14.04.05 19.07.06	PFM	"	y	finally routed and connected to SPIRE CQM, re-routed acc. to ASED-SD-0101
121432-01 SIH-CP-01	20.04.05	PFM	HP-2-CASA-AB-0014, iss. 1, 30.03.05	y	finally routed and connected to PACS MTD
121432-01 SIH-CP-02	20.04.05	PFM	"	y	finally routed and connected to PACS MTD
121432-01 SIH-CP-03	19.04.05	PFM	"	y	finally routed and connected to PACS MTD
121432-01 SIH-CP-04	19.04.05	PFM	"	y	finally routed and connected to PACS MTD
121432-01 SIH-CP-05	20.04.05	PFM	"	y	finally routed and connected to PACS MTD


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121432-01 SIH-CP-06	20.04.05	PFM	"	y	finally routed and connected to PACS MTD
121432-01 SIH-CP-07	21.04.05	PFM	"	y	finally routed and connected to PACS MTD
121432-01 SIH-CP-08	21.04.05	PFM	"	y	finally routed and connected to PACS MTD
121432-01 SIH-CP-09	21.04.05	PFM	"	y	finally routed and connected to PACS MTD
121432-01 SIH-CP-10	21.04.05	PFM	"	y	finally routed and connected to PACS MTD
121432-01 SIH-CP-11	21.04.05	PFM	"	y	finally routed and connected to PACS MTD; NC0917: Bent pin in FTH, reworked.
121432-01 SIH-CP-12	21.04.05	PFM	"	y	finally routed and connected to PACS MTD
121432-01 SIH-CP-13	20.04.05	PFM	"	y	finally routed and connected to PACS MTD
121432-01 SIH-CP-14	19.04.05	PFM	"	y	finally routed and connected to PACS MTD
121432-01 SIH-CP-15	19.04.05	PFM	"	y	finally routed and connected to PACS MTD
121432-02 SIH-IH-01	15.07.05 02.08.06	PFM	HP-2-ASSE-AB-0002, issue 1, 10.06.05	y	SIH-IH: HP-2-ASED-TP-0077 HIFI CQM
121432-02 SIH-IH-02	15.07.05 02.08.06	PFM	"	y	HIFI CQM
121432-02 SIH-IH-03	15.07.05 02.08.06	PFM	"	y	HIFI CQM
121432-02 SIH-IH-04	15.07.05 02.08.06	PFM	"	y	HIFI CQM
121432-02 SIH-IH-05	02.08.06	PFM	"	y	removed 07.07.06, NC-1171: Contact swap HIFI CQM
121432-02 SIH-IH-06		PFM	HP-2-ASSE-AB-0003, issue 1, 16.08.05	y	LOU-Removed 21.03.2006 HP-2-ASED-SD-0054

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121432-02 SIH-IH-07		PFM	"	y	LOU-Removed 21.03.2006 HP-2-ASED-SD-0054
121432-02 SIH-IH-08		PFM	"	y	LOU-Removed 21.03.2006 HP-2-ASED-SD-0054
121432-02 SIH-IH-09		PFM	"	y	LOU-Removed 21.03.2006 HP-2-ASED-SD-0054
121432-02 SIH-IH-10		PFM	"	y	LOU-Removed 21.03.2006 HP-2-ASED-SD-0054
121432-02 SIH-IH-11		PFM	"	y	LOU-Removed 21.03.2006 HP-2-ASED-SD-0054
121432-02 SIH-IH-12		PFM	"	y	LOU-Removed 21.03.2006 HP-2-ASED-SD-0054
121432-02 SIH-IS-01	18.07.06	PFM	HP-2-ASSE-AB-0005, issue 1, 15.07.05	y	
121432-02 SIH-IS-02	18.07.06	PFM	"	y	
121432-02 SIH-IS-03	18.07.06	PFM	"	y	
121432-02 SIH-IS-04	18.07.06	PFM	"	y	
121432-02 SIH-IS-05	18.07.06	PFM	"	y	
121432-02 SIH-IS-06	18.07.06	PFM	"	y	
121432-02 SIH-IS-07	18.07.06	PFM	"	y	

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121432-02 SIH-IS-08	18.07.06	PFM	"	y	
121432-02 SIH-IS-09	18.07.06	PFM	"	y	
121432-02 SIH-IS-10	18.07.06	PFM	"	y	
121432-02 SIH-IS-11	18.07.06	PFM	"	y	
121432-02 SIH-IS-12	18.07.06	PFM	"	y	
121432-02 SIH-IS-13	18.07.06	PFM	"	y	
121432-02 SIH-IP-01	18.07.06	PFM	HP-2-ASSE-AB-0004, issue 1, 10.06.05	y	
121432-02 SIH-IP-02	03.09.05	PFM	"	y	
121432-02 SIH-IP-03	01.09.05	PFM	"	y	
121432-02 SIH-IP-04	01.09.05	PFM	"	y	
121432-02 SIH-IP-05	02.09.05	PFM	"	y	
121432-02 SIH-IP-06	02.09.05	PFM	"	y	
121432-02 SIH-IP-07	05.09.05	PFM	"	y	

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121432-02 SIH-IP-08	06.09.05	PFM	"	y	
121432-02 SIH-IP-09	06.09.05	PFM	"	y	
121432-02 SIH-IP-10	06.09.05	PFM	"	y	
121432-02 SIH-IP-11	06.09.05	PFM	"	y	
121432-02 SIH-IP-12	06.09.05	PFM	"	y	
121432-02 SIH-IP-13	02.09.05	PFM	"	y	
121432-02 SIH-IP-14	01.09.05	PFM	"	y	
121432-02 SIH-IP-15	02.09.05	PFM	"	y	
121432-04 HIFI SIH-IH-21 to 24 (external coax cables)	05.07.2007	PFM	HP-2-ASED-PS-0048, issue 3;18.10.07 HP-2-ASED-DW-0252_01_A_Part 21 HP-2-ASED-DW-0253_01_A_Part 22 HP-2-ASED-DW-0254_01_A_Part 23 HP-2-ASED-DW-0255_01_A_Part 24	y	MA = 0,8 Nm, bonding measurement done Due to bad HF performance for STM use only; External Coax Cable Integration by ELSPEC
121432-04 HIFI SIH-CH-21 to 24 (internal coax cables)	25.05.07	PFM	HP-2-ASED-PS-0048, Iss 3 HP-2-ASED-DW-0183_01_B_Part 21 HP-2-ASED-DW-0186_01_B_Part 22 HP-2-ASED-DW-0189_01_B_Part 23 HP-2-ASED-DW-0192_01_B_Part 24	y	STM parts removed from PLM, new type of coax needed for FM, no COAX cables necessary for STM 2 tests. Final Integration on PFM acc. PR-0152 on 25.05.07 A.K. & Elspec
121432-04 HIFI SIH-SH-21 to 24 (SVM coax cables)		PFM	HP-2-ASED-PS-0048, issue 3;18.10.07 HP-2-ASED-DW-0279_01_0A_Part 21 HP-2-ASED-DW-0280_01_0A_Part 22 HP-2-ASED-DW-0281_01_0A_Part 23 HP-2-ASED-DW-0282_01_0A_Part 24	y	
121433 CB 212420	16.09.05	PFM	HP-2-ASED-DP-0028, issue 2	Y	Mating acc. HP-2-ASED-TP-0077 Brackets mounted to SVM according to HP-2-ASED-TP-0087 1.1 MLI standoffs integrated

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121433 CB 311100	12.07.05	PFM	"	Y	Mating acc. HP-2-ASED-TP-0077 Brackets mounted to SVM according to HP-2-ASED-TP-0087 1.1 MLI standoffs integrated
121433 CB 311200	12.07.05	PFM	"	Y	Mating acc. HP-2-ASED-TP-0077 Brackets mounted to SVM according to HP-2-ASED-TP-0087 1.1 MLI standoffs integrated
121433 CB 311300	12.07.05	PFM	"	Y	Mating acc. HP-2-ASED-TP-0077 Brackets mounted to SVM according to HP-2-ASED-TP-0087 1.1 MLI standoffs integrated
121433 CB 312100	27.08.05	PFM	"	Y	Mating acc. HP-2-ASED-TP-0077 Brackets mounted to SVM according to HP-2-ASED-TP-0087 1.1 MLI standoffs integrated
121433 CB 312200	27.08.05	PFM	"	Y	Mating acc. HP-2-ASED-TP-0077 Brackets mounted to SVM according to HP-2-ASED-TP-0087 1.1 MLI standoffs integrated
121433 CB 312300	27.08.05	PFM	"	Y	Mating acc. HP-2-ASED-TP-0077 Brackets mounted to SVM according to HP-2-ASED-TP-0087 1.1 MLI standoffs integrated
121433 CB 313100	27.08.05	PFM	"	Y	Mating acc. HP-2-ASED-TP-0077 Brackets mounted to SVM according to HP-2-ASED-TP-0087 1.1 MLI standoffs integrated
121433 CB 313200	27.08.05	PFM	"	Y	Mating acc. HP-2-ASED-TP-0077 Brackets mounted to SVM according to HP-2-ASED-TP-0087 1.1 MLI standoffs integrated
121433 CB 314200	27.08.05	PFM	"	Y	Mating acc. HP-2-ASED-TP-0077 (changed to CI 314200 due to writing error) Brackets mounted to SVM according to HP-2-ASED-TP-0087 1.1 MLI standoffs integrated
121433 CB 315100	27.08.05	PFM	"	Y	Mating acc. HP-2-ASED-TP-0077 Brackets mounted to SVM according to HP-2-ASED-TP-0087 1.1 MLI standoffs integrated
121433 CB 316100	27.08.05	PFM	"	Y	Mating acc. HP-2-ASED-TP-0077 Brackets mounted to SVM according to HP-2-ASED-TP-0087 1.1 MLI standoffs integrated
121433 CB 321100	27.08.05	PFM	"	Y	Mating acc. HP-2-ASED-TP-0077 Brackets mounted to SVM according to HP-2-ASED-TP-0087 1.1

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					MLI standoffs integrated
121433 CB 321200	27.08.05	PFM	"	Y	Mating acc. HP-2-ASED-TP-0077 Brackets mounted to SVM according to HP-2-ASED-TP-0087 1.1 MLI standoffs integrated
121433 CB 321300	27.08.05	PFM	"	Y	Mating acc. HP-2-ASED-TP-0077 Brackets mounted to SVM according to HP-2-ASED-TP-0087 1.1 MLI standoffs integrated
121433 Harness Rails	18.07.05	PFM	HP-2-ASED-DP-0028, Issue 2	y	Part No. 3132, 2900, 2728, 2526, 2400, 2300, 2122, 4344, 4200. Drwg. No. 2547-121430-200-07-0D; NC-1256: Fixed with bolts & nuts instead of helicoils
121433 Harness Rails	20.07.05	PFM	HP-2-ASED-DP-0028, Issue 2	y	Part No. 3334, 3800, 3900, 4041, 2 x 2100. Drwg. No. 2547-121430-200-07-0D; NC-1256: Fixed with bolts & nuts instead of helicoils
121433 P-clamps	27.08.05			y	on struts No. 22, 33, 38, 39, 40.
121433 LOU HRN Support Structure		PFM	HP-2-ASED-DW-0162-01 issue A, 31.05.05	y	Brackets -Z & +Z to be removed after mechanical tests at ESTEC (see OW 122) On + Z modifie the hole M4 Removed 30.03.06 HP-2-ASED-SD-0053
121433 Lower SFW Harness CBs					
121433 CB 214341	29.7.04		HP-2-ASED-DP-0028 (A)	n.a	Lower SFW CB +Y, connector labels exchanged on 21.01.05 SLI covered acc. to ASED-PR-0059
121433 CB 214342	29.7.04		HP-2-ASED-DP-0028 (A)	n.a	Lower SFW CB +Z SLI covered acc. to ASED-PR-0059
121433 CB 214343	29.7.04		HP-2-ASED-DP-0028 (A)	n.a	Lower SFW CB -Y; marking of connectors performed on 21.01.05 L-bracket for J01 exchanged on 3.12.04, SLI covered acc. to ASED-PR-0059
121433 CB 214344	29.7.04		HP-2-ASED-DP-0028 (A)	n.a	Lower SFW CB -Z SLI covered acc. to ASED-PR-0059
121433 CB 212510 + support	Y		HP-2-ASED-DP-0028 (A)	n.a	H701/702 CB
121433 L701 P-Clamp +	Y		HP-2-ASED-DP-0028 (A)	n.a	preliminary test bracket replaced by flight item


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CB/Backshell					
121433 L702 P-Clamp + CB/Backshell	Y		HP-2-ASED-DP-0028 (A)	n.a	preliminary test bracket replaced by flight item
121433 Harness CBs					In total 9 CB, 7 x 9 pole; 2 x 15 pole
121433 H103 CB	3.8.04	PFM		n.a	9 pole
121433 H104 CB	3.8.04	PFM		n.a	9 pole
121433 PPS CB	28.9.04	PFM		n.a	9 pole, preliminary test bracket replaced by flight item
121433 DLCM1 CB	28.9.04	PFM		n.a	(Qty = 2) 1 x 9 pole; 1 x 15 pole, preliminary test bracket replaced by flight item
121433 DLCM2 CB	28.9.04	PFM		n.a	(Qty = 2) 1 x 9 pole; 1 x 15 pole, preliminary test bracket replaced by flight item
21433 L101 conn. bkt. support (P- Clamp)	21.9.04	PFM		n.a	9 pole, preliminary test bracket replaced by flight item
121433 L102 conn. bkt. support (P- Clamp)	21.9.04	PFM		n.a	9 pole, preliminary test bracket replaced by flight item
121433 Pos. 110 Harness- Support 1 Cutout 1	04.01.2005	PFM	2547-121432-16I-01-0A	n. a.	
121433 Pos. 115 Harness- Support 1 Cutout 1	04.01.2005	PFM	2547-121432-16I-01-0A	n. a.	
121433 Pos. 120 Harness- Support 1 Cutout 2	04.01.2005	PFM	2547-121432-16J-01-0A	n. a.	
121433 Pos. 130 Harness-	14.01.2005	PFM	2547-121432-16K-01-0A	n. a.	

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Support 2 Cutout 2					
121433 Pos. 140 Harness- Support 3 Cutout 2	04.01.2005	PFM	2547-121432-16L-01-0A	n. a.	
121433 (143134) Pos. 150 HIFI Harness Bracket	19.07.07	PFM	HP-2-ASED-DW-0211-01-0A (2547-121432-185-01-0A)	n. a.	New drwg. for PFM, positions of venting holes changed. Not installed for STM 2. Installed 19.07.07 ASED-DW-0133
121433 Pos. 160 Harness- Support 1 Cutout 3	18.01.2005	PFM	2547-121432-16M-01-0A	n. a.	NC-0681: Modification of fixation holes I/F ASED-SD-0101: Rail wrapped with gore-tex
121433 Pos. 170 Harness- Support 2 Cutout 4	18.01.2005	PFM	2547-121432-16O-01-0A	n. a.	NC-0681: Modification of fixation holes I/F ASED-SD-0101: Rail wrapped with gore-tex ASED-SD-0111: Supports thermally decoupled with CFRP washers
121433 Pos. 180 Harness- Support 1 Cutout 4	14.01.2005	PFM	2547-121432-16N-01-0A	n. a.	ASED-SD-0101: Rail wrapped with gore-tex
121433 OB Harness-bracket 1	15.04.05	PFM	2547-121432-16Q-01-0A	n. a.	2 parts
121433 OB Harness-bracket 2	15.04.05	PFM	2547-121432-16R-01-0A	n. a.	
121433 OB Harness-bracket 3	15.04.05	PFM	2547-121432-16S-01-0A	n. a.	3 pcs
121433 OB Harness-bracket 4	15.04.05	PFM	2547-121432-16T-01-0A	n. a.	
121433 OB Harness-bracket 5	18.03.2005	PFM	2547-121432-16U-01-0B	n. a.	NC-0838: reworked to comply with drwg. issue B
121433 OB Harness-bracket 6	15.04.05	PFM	2547-121432-16V-01-0A	n. a.	
121433 OB Harness-bracket 7	15.04.05	PFM	2547-121432-16W-01-0A	n. a.	
121433 Upper SFW harn. CBs	14.12.04	PFM	HP-2-ASED-DP-0028 (A)	na	acc. to HP-2-ASED-DW-0086-01 NC-0842, backshells of connectors had to be turned 180°
121433 TSS Harness supports	21.07.06	PFM	HP-2-ASED-DW-0203-01-0A	n.a.	new Vespel supports on TSS chains iaw. ASED-SD-0101
121500 (CFE) LOU Radiator		FM	CFE	y	16.11.2005: removed after TB/TV test Mounted 21.12.05; HP-2-ASED-SD-0030 Iss.1; removed 24.02.06 HP-2-ASED-SD-0042

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121510 LOU Baffle		PFM			Mounted 07.07.05, removed on 08.07.05 after negative fit check, ref. NC-1245
121520 LOU Support Structure incl. Support Plate and I/F struts		PFM	HP-2-ECAS-DP-0004, iss. 1, 13.12.04	y	Mating acc. to HP-2-ASED-PR-0024 Wire locking done 02.08.05 Removed 29.03.2006 HP-2-ASED-SD-0053
121530 HIFI-LOU Windows assy	22.-25.04.05	PFM, SN see under remarks	HP-2-QMC-AB-0001, Issue 2, 24.01.05	y	Incl. clamps, bolts and o-rings SN: B1/31, B2/28, B3/03, B4/12, B5/13, B6L/21, B6H/22
121530 Alignment windows assy	25.04.05	PFM SN: OA#3, OA#8	"	y	Incl. clamps, bolts and o-rings
121550 LOU Waveguide Assy		PFM, SN 01	HP-2-RYM-AB-0030, issue 1, 31.10.04	y	WG Tapes removed 05.10.05 Lower section removed after TB/TV and re-mounted on 30.11.05; Screws secured with EC 2216; removed 24.03.2006 HP-2-ASED-PR-0053
122000 122300 122500 TMS incl. CB`s	12.06.07	PFM-0300	HP-2-ECAS-DP-0009, issue 1, 31.08.05	Y	Integration acc. to HP-2-ASED-SD-0043 NCR generated during Incoming and Integration see NC-1437 NC-1481: Flatness out of tolerance, to be reworked for PFM final installation and alignment check on 12.09.05 Mirror bracket -Z, -Y side installed on 09.09.05 Removed 27.03.06 HP-2-ASED-SD-0042 Final integrated acc.PR-0092 B.K.
122100 TMS Strut	12.06.07	PFM 0166	"	y	TMS/CVV_1 Strut blade at CVV wrongly installed see NC-1437 2 mm shim; Removed 27.03.06 HP-2-ASED-SD-0042 Final integrated acc.PR-0092 B.K.
122100 TMS Strut	12.06.07	PFM 0152	"	y	TMS/CVV_6 1mm shim; Removed 27.03.06 HP-2-ASED-SD-0042 Final integrated acc.PR-0092 B.K.
122100 TMS Strut	12.06.07	PFM 0151	"	y	TMS/CVV_5 2 mm shim; Removed 27.03.06 HP-2-ASED-SD-0042 Final integrated acc.PR-0092 B.K.
122100 TMS Strut	12.06.07	PFM 0163	"	y	TMS/CVV_4 Strut blade at CVV wrongly installed see NC-1437 2 mm shim; Removed 27.03.06 HP-2-ASED-SD-0042 Final integrated acc.PR-0092 B.K.


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122100 TMS Strut	12.06.07	PFM 0154	"	y	TMS/CVV_3 2 mm shim; Removed 27.03.06 HP-2-ASED-SD-0042 Final integrated acc.PR-0092 B.K.
122100 TMS Strut	12.06.07	PFM 0165	"	y	TMS/CVV_2 Strut blade at CVV wrongly installed see NC-1437 2 mm shim Removed 27.03.06 HP-2-ASED-SD-0042 MLI installed for sine test; Final integrated acc.PR-0092 B.K.
122200 MLI on TMS struts		PFM	HP-2-AAEM-LI-0037, issue draft 2, 01.07.05	y	For sine test only partly installed: on TMS/CVV_2, TMS/CB 3, TMS/CB 4; TMS Removed 27.03.06 HP-2-ASED-SD-0042
122400 TMS Strut	12.06.07	PFM 0246	HP-2-ECAS-DP-0009, issue 1, 31.08.05	y	TMS/CB 2 Removed 27.03.06 HP-2-ASED-SD-0042 Final integrated acc.PR-0092 B.K.
122400 TMS Strut	12.06.07	PFM 0245	"	y	TMS/CB 1 Removed 27.03.06 HP-2-ASED-SD-0042 Final integrated acc.PR-0092 B.K.
122400 TMS Strut	12.06.07	PFM 0250	"	y	TMS/CB 6 Removed 27.03.06 HP-2-ASED-SD-0042 Final integrated acc.PR-0092 B.K.
122400 TMS Strut	12.06.07	PFM 0249	"	y	TMS/CB 5 Removed 27.03.06 HP-2-ASED-SD-0042 Final integrated acc.PR-0092 B.K.
122400 TMS Strut	12.06.07	PFM 0248	"	y	TMS/CB 4 MLI installed for sine test TMS Removed 27.03.06 HP-2-ASED-SD-0042 Final integrated acc.PR-0092 B.K.
122400 TMS Strut	12.06.07	PFM 0247	"	y	TMS/CB 3 MLI installed for sine test TMS Removed 27.03.06 HP-2-ASED-SD-0042 Final integrated acc.PR-0092 B.K.
123110 Solar Array Structure		STM	HP-2-DSSA-DP-0001, issue 1, Aug. 2005	pending	Finally installed on 19.12.2005 HP-2-ASED-TP-0085 Iss.2 Removed 01.03.2006 HP-2-ASED-SD-0042
123112 Strut 1 HSS/SVM		S/N 0101	HP-2-ECAS-DP-0008, issue 1, 03.08.05	Y	NC-1602: HSS STM sine test aborted, dampers introduced on struts 1-12. Dampers are mounted. Removed 01.03.2006 HP-2-ASED-SD-0042; final integration of Dampers 23.08.2007 R.Hengstler acc. DW 2547-123130-500-01-0B
123112 Strut 2 HSS/SVM		S/N 0202	HP-2-ECAS-DP-0008, issue 1, 03.08.05	Y	NC-1602: HSS STM sine test aborted, dampers introduced on struts 1-12. Dampers are mounted. Removed 01.03.2006 HP-2-ASED-SD-0042 final integration of Dampers 23.08.2007 R.Hengstler acc. DW 2547-123130-500-01-0B


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123112 Strut 3 HSS/SVM		S/N 0203	HP-2-ECAS-DP-0008, issue 1, 03.08.05	Y	NC-1602: HSS STM sine test aborted, dampers introduced on struts 1-12. Dampers are mounted. Removed 01.03.2006 HP-2-ASED-SD-0042 final integration of Dampers 23.08.2007 R.Hengstler acc. DW 2547-123130-500-01-0B
123112 Strut 4 HSS/SVM		S/N 0104	HP-2-ECAS-DP-0008, issue 1, 03.08.05	Y	NC-1602: HSS STM sine test aborted, dampers introduced on struts 1-12. Dampers are mounted. Removed 01.03.2006 HP-2-ASED-SD-0042 final integration of Dampers 23.08.2007 R.Hengstler acc. DW 2547-123130-500-01-0B
123112 Strut 5 HSS/CVV		S/N 0405	HP-2-ECAS-DP-0005, issue 1, 31.05.05	Y	NC-1602: HSS STM sine test aborted, dampers introduced on struts 1-12. Dampers are mounted. Removed 01.03.2006 HP-2-ASED-SD-0042 final integration of Dampers 23.08.2007 R.Hengstler acc. DW 2547-123130-500-01-0B
123112 Strut 6 HSS/CVV		S/N 0306	HP-2-ECAS-DP-0005, issue 1, 31.05.05	Y	NC-1602: HSS STM sine test aborted, dampers introduced on struts 1-12. Dampers are mounted. Removed 01.03.2006 HP-2-ASED-SD-0042 final integration of Dampers 23.08.2007 R.Hengstler acc. DW 2547-123130-500-01-0B
123112 Strut 7 HSS/CVV		S/N 0307	HP-2-ECAS-DP-0005, issue 1, 31.05.05	Y	NC-1602: HSS STM sine test aborted, dampers introduced on struts 1-12. Dampers are mounted. Removed 01.03.2006 HP-2-ASED-SD-0042 final integration of Dampers 23.08.2007 R.Hengstler acc. DW 2547-123130-500-01-0B
123112 Strut 8 HSS/CVV		S/N 0408	HP-2-ECAS-DP-0005, issue 1, 31.05.05	Y	NC-1602: HSS STM sine test aborted, dampers introduced on struts 1-12. Dampers are mounted. Removed 01.03.2006 HP-2-ASED-SD-0042 final integration of Dampers 23.08.2007 R.Hengstler acc. DW 2547-123130-500-01-0B
123120 Sunshade Structure		STM	HP-2-DSSA-DP-0001, issue 1, Aug. 2005	pending	Final Installation on 19.12.2005 HP-2-ASED-TP-0085 Iss.2 STM shall be refurbished to FM after S/C STM test Removed 01.03.2006 HP-2-ASED-SD-0042
123122 Strut 9 HSS/CVV		S/N 0109	HP-2-ECAS-DP-0005, issue 1, 31.05.05	Y	NC-1602: HSS STM sine test aborted, dampers introduced on struts 1-12. Dampers are mounted. Removed 01.03.2006 HP-2-ASED-SD-0042 final integration of Dampers 23.08.2007 R.Hengstler acc. DW 2547-123130-500-01-0B
123122 Strut 10 HSS/CVV		S/N 0210	HP-2-ECAS-DP-0005, issue 1, 31.05.05	Y	NC-1602: HSS STM sine test aborted, dampers introduced on struts 1-12. Dampers are mounted. Removed 01.03.2006 HP-2-ASED-SD-0042 final integration of Dampers 23.08.2007 R.Hengstler acc. DW 2547-123130-500-01-0B
123122 Strut 11 HSS/CVV		S/N 0211	HP-2-ECAS-DP-0005, issue 1, 31.05.05	Y	NC-1602: HSS STM sine test aborted, dampers introduced on struts 1-12. Dampers are mounted. Removed 01.03.2006 HP-2-ASED-SD-0042 final integration of Dampers 23.08.2007 R.Hengstler acc. DW 2547-123130-500-01-0B
123122 Strut 12 HSS/CVV		S/N 0112	HP-2-ECAS-DP-0005, issue 1, 31.05.05	Y	NC-1602: HSS STM sine test aborted, dampers introduced on struts 1-12. Dampers are mounted. Removed 01.03.2006 HP-2-ASED-SD-0042 final integration of Dampers 23.08.2007 R.Hengstler acc. DW 2547-123130-500-01-0B
123311 Solar Array MLI		STM	HP-2-AAEM-LI-0037, issue draft 2, 01.07.05 HP-2-AAEM-DP-0005	Y	Integration of the panel for FM only after refurbishment Removed 01.03.2006 HP-2-ASED-SD-0042

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123322 Sunshade MLI		STM	HP-2-AAEM-LI-0037, issue draft 2, 01.07.05 HP-2-AAEM-DP-0005	Y	Integration of the panel for FM only after refurbishment Removed 01.03.2006 HP-2-ASED-SD-0042
124100 PLM/SVM I/F Struts	08.07.05 - 20.07.05	PFM	HP-2-ECAS-DP-0002, iss. 1, 01.06.05	y	Mating acc. to HP-2-ASED-PR-0023
124200 PLM/SVM Strut MLI		PFM	HP-2-AAEM-LI-0037, issue draft 2, 01.07.05 HP-2-AAEM-DP-0005	y	Partly disintegrated For sine test MLI was integrated only on 2 Struts: (SN 22 &23) Removed 21.03.06
124300 SVM Thermal Shield		PFM	HP-2-ECAS-DP-0007, issue 1.1, 04.08.05	y	Removed after TB/TV test 15.11.05 Re-mounting on 12.01.2006 acc.HP-2-ASED-SD-0031 Iss.1 Release 2 Removal 25.02.2006 HP-2-ASED-SD-0042; Re-mounting for TB/TV Test STM2 acc.SD-0031 15.01.2007; Removed 14.03.2007 acc.SD-0042
124320 SVM Thermal Shield MLI		PFM	HP-2-AAEM-LI-0037, issue draft 2, 01.07.05 HP-2-AAEM-DP-0005	y	Integrated 12.01.2006 for Vibration Removal 25.02.2006 HP-2-ASED-SD-0042 Re-mounting for TB/TV Test STM2 acc.SD-0031 15.01.2007 Removed 14.03.2007 acc.SD-0042
Temporary Installed Items : MGSE, OGSE, CVSE		PFM	Alenia ABCL tbd	N/A	Mating to PLM according to HP-2-ASED-TP-0087 "1.1" De-Mating 02.03.2006 HP-2-ASED-SD-0042
130000 SVM Grounding lines installed: (SVM) 3000HP207-401 3000HP207-403 3000HP207-405 3000HP207-407		ID NR: 25, 33 ID NR: 27, 35 ID NR: 37 ID NR: 31			Removed on 02.03.2006 acc. To HP-2-ASED-SD-0042
142270 Load cells (Pretension Device)	28.02.2007	MGSE			Re-Integrated after TB/TV Test; Removed for Vibration Test 09.01.2006; installed -Z Side 07.03.2006; Installed on +Z Side 24.03.06 Re-integrated for adjustment of chains on 08.08.06 Removed for TB/TV Test STM2 10.01.2007 acc. SD-0145; covered with protective cap; Protective cap removed and installed the Pretension Device acc. TP-0133 R.Suess 28.02.2007
142300 Airlock Filling Port / CVV	15.06.07	MGSE			Re-integrated 17.11.05 Removed 12.04.2006; re-integrated SD0113; Removed 21.01.2007 acc. SD-0146; Prep. For TB/TV Test; TB/TV Safety Adapter installed; removed after TB/TV test 27.02.2007 a.. SD-0151 and installed the filling port A.Runge Removed acc.SD-0151; 22.03.2007


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					Integrated for Leaktest M.L. 15.06.07
142400 Alignment cubes -Z, +Y	01.08.05	OGSE			on CVV UB, Aligment Cube Cover removed 2x Aligment Cube Cover on -Z installed no cover on +y cube (under MLI) all Aligment Cube Covers installed 07.04.06 (Green Tag Items)
142410 HACS Camera +Z		OGSE	HP-2-TER-AB-0001, iss. 2-A, 03.06.05	Y	17.11.2005: removed after TB/TV test
142410 HACS Camera -Z		OGSE	HP-2-TER-AB-0001, iss. 2-A, 03.06.05	Y	17.11.2005: removed after TB/TV test
142410 HACS Harness - 2x power cables - 2x glass fibre cables		OGSE		y	17.11.2005: removed after TB/TV test
PLM Instruments					
142511-01 HIFI FPU	17.07.2007	FM	ABCL by SRON		MTD removed 07.07.06 acc.PR-0057; HIFI CQM integrated acc. PR-0063 12.07.2006, NC-2330: CQM covered with SLI iaw. SD-0109, connector fit check done iaw. SD-0105 Deintegrated 12.04.2007 K.R Final Integration acc.HP-2-ASED-PR-0090_1 HIFI Team & AESD Team
142511-01 HIFI Harness Bracket Fixation Clamp	20.07.2007	FM	HP-2-ASED-DW-0115-01 issue B, 27.04.2005		Integration acc. to HP-2-ASED-DW-0133-01 issue A, 17.12.2004 NC-0730: HIFI harness frame does not fit to HIFI MTD Removed, fixation clamps not used for STM2, no I/F to HIFI CQM. Intergation of Harness Rail acc HP-2-ASED-PR-0090(NC-3417 raised)
142511-02 LOU PFM		PFM	HP-2-PROT-AB-0002, iss. B, 17.01.05	y	Mating acc. to HP-2-ASED-PR-0024 Alignment wrt. FPU done on 14.07.05 Removed 29.03.2006 HP-2-ASED-SD-0053
142512-01 SPIRE FPU	18.04.2007	PFM	SPIRE-RAL-DOC-001971		MTD removed 08.05.2006 Not all temp sensors mounted, aperture cover removed CQM removed acc.PR-0057 11.04.2007;return to Supplier Final Integration acc.PR-0083 K.R. 18.04.2007
142512-022 SPIRE JFET Photometer	18.04.2007	PFM	SPIRE-RAL-DOC-001971		MTD Removed 05.05.2006; CQM removed acc.PR-0057 11.04.2007;return to Supplier Final Integration acc.PR-0083 K.R. 18.04.2007
142512-021 SPIRE JFET Spectrometer	18.04.2007	PFM	SPIRE-RAL-DOC-001971		MTD Removed 05.05.2006 P04 repaired on 14.07.06 according to NCR1394 CQM removed acc.PR-0057 11.04.2007;return to Supplier Final Integration acc.PR-0083 K.R. 18.04.2007

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142513 PACS single axis support	y		HP-2-PROT-AB-0006 issue C, 03.02.2005		
142513 PACS FPU	09.07.07	PFM	HP-2-PROT-AB-0006 issue C, 03.02.2005		NC-0650 and 0658: Rework on MTD after interference was found during fit check NC-631 (= PROT-NC-0006) deviation in connector 131100 J67 M8 bolts torqued 22 Nm; NC-0807: L0 I/F bad contact, reworked, closed. Deintegrated 12.04.2007 K.R Final Integrated by MPE & T.B. acc.PR-0089 Failure Investigation: Contamination on PACS Mirror Cleaning of trog 1 by KT&ESA acc.PR-042

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Annex 4: SVM Integration Status List

Herschel SVM Integration Status List for : Pre-Shipment Review

HP-2-ASED-LI-0033, issue: --


Status: 19.12.2007

Equipment / CI-No.	Integr. Date	Model, Serial No	ABCL Ref. (or EIDP)	Qualified	Remarks / Open Work / NCR's
SVM Connector Brakets				Y	
311 300 Upper Closure Panel	12.02.2007	FM		Y	
321 100 Upper Closure Panel	12.02.2007	FM		Y	
311 100 Upper Closure Panel	12.02.2007	FM		Y	
311 200 Upper Closure Panel	12.02.2007	FM		Y	
312 100 Upper Closure Panel	12.02.2007	FM		Y	
312 200 Upper Closure Panel	12.02.2007	FM		Y	
316 100 Upper Closure Panel	12.02.2007	FM		Y	
312 300 Upper Closure Panel	12.02.2007	FM		Y	
321 200 Upper Closure Panel	12.02.2007	FM		Y	
321 300 Upper Closure Panel	12.02.2007	FM		Y	


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315 100 Upper Closure Panel	12.02.2007	FM		Y	
314 200 Upper Closure Panel	12.02.2007	FM		Y	
313 200 Upper Closure Panel	12.02.2007	FM		Y	
313 100 Upper Closure Panel	12.02.2007	FM		Y	
SVM HIFI					
CI : 111 200 HIFI FHWEH	18.07.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0074 Integrated with Sigraflexpieces under the feet
CI : 111 200 HIFI FHWOH	18.07.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0074
CI : 111 200 HIFI FHLCU	24.07.2007	FLCU-FM 01/06		Y	Integrated acc. HP-2-ASED-PR-0074
CI : 111 200 HIFI FHHRH	24.07.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0074
CI : 111 200 HIFI FHIFH	25.07.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0074
CI : 111 200 HIFI FHIFV	25.07.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0074
CI : 111 200 HIFI FHHRV	25.07.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0074
CI : 111 200 HIFI FHWEV	25.07.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0074
CI : 111 200 HIFI FHWOV	25.07.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0074
CI : 111 200 HIFI FHHRH	25.07.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0074
CI : 111 200 HIFI FHFCU	25.07.2007	FM Drwg. 324-G-		Y	Integrated acc. HP-2-ASED-PR-0074

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		7000			
CI: 111 200 HIFI FHLSU	24.07.2007	PF P/N 157704 S/N 4905079		Y	Integrated acc. HP-2-ASED-PR-0074
CI.: 125 100 HIFI-HPDPU	19.02.2007	AVM2 S/N 01		Y	
CI.: 125 100 HIFI-HSDPU	26.02.2007	AVM2 S/N 01		Y	
CI.: 125 100 HIFI-HHICU	05.03.2007	AVM2 S/N 01		Y	Integrated acc. H-P-ED-A-0033
HIFI I Harness 121432-03-31A	07.05.2007	FM		Y	Integrated acc. H-P-ED-A-0033
HIFI I Harness 121432-03-31B	07.05.2007	FM		Y	Integrated acc. H-P-ED-A-0033
HIFI I Harness 121432-03-31C	07.05.2007	FM		Y	Integrated acc. H-P-ED-A-0033
HIFI I Harness 121432-03-316	07.05.2007	FM		Y	Integrated acc. H-P-ED-A-0033
HIFI I Harness 121432-03-317	07.05.2007	FM		Y	Integrated acc. H-P-ED-A-0033
HIFI I Harness 121432-03-318	07.05.2007	FM		Y	Integrated acc. H-P-ED-A-0033
HIFI I Harness 121432-03-329	07.05.2007	FM		Y	Integrated acc. H-P-ED-A-0033
HIFI II Harness 121432-03-311 SIH-SH-01	04.09.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0078
HIFI II Harness 121432-03-312 SIH-SH-02	04.09.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0078
HIFI II Harness 121432-03-313	04.09.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0078

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SIH-SH-03					
HIFI II Harness 121432-03-314 SIH-SH-04	04.09.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0078
HIFI II Harness 121432-03-315 SIH-SH-05	04.09.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0078
Bridging Waveguide HIFI-1; LSU	02.10.2007	FM		Y	Integrated acc. SRON-U/HIFI/PR/2005-009
SVM PACS					
Panel *Y-Z (PACS)	27.09.2007	STM			Final closing acc.H-P-PR-AI-0058 Step 640-750
CI: PACS HP BOLC	06.07.2007	FM	PACS-ME-DP-003	Y	Integrated acc. HP-2-ASED-PR-0075 With HPPSU S/N 4194;electrical Int.acc.TP-0145
CI: 113 000 PACS FP SPU	11.07.2007	FM; S/N 01	CIDL/ABCL: FPL-CL-1214-05- CRS	Y	Integrated acc. HP-2-ASED-PR-0075 NCR: HP-113000-ASED-NC-3398 electrical Int.acc.TP-0145
CI: PACS FP DPU	13.07.2007	FM; S/N 01	PACS-ME-DP-003	Y	Integrated acc. HP-2-ASED-PR-0075 electrical Int.acc.TP-0145
CI: PACS HP DECMEC	09.07.2007	FM; P/N 767-052	PACS-ME-DP-003	Y	Integrated acc. HP-2-ASED-PR-0075 electrical Int.acc.TP-0145
PACS WIH Harness					
CI : 131 100 PACS WIH Harness FPD20_01R	19.02.2007	FM	PACS-NXH-DP-0005	Y	Integrated acc. HP-2-ASED-PR-0077
CI : 131 100 PACS WIH Harness FPD20_02R	19.02.2007	FM	PACS-NXH-DP-0005	Y	Integrated acc. HP-2-ASED-PR-0077
CI : 131 100 PACS WIH Harness FPD20_03R	19.02.2007	FM	PACS-NXH-DP-0005	Y	Integrated acc. HP-2-ASED-PR-0077
CI : 131 100 PACS WIH Harness FPD20_04R	19.02.2007	FM	PACS-NXH-DP-0005	Y	Integrated acc. HP-2-ASED-PR-0077

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Equipment / CI-No.	Integr. Date	Model, Serial No	ABCL Ref. (or EIDP)	Qualified	Remarks / Open Work / NCR's
CI : 131 100 PACS WIH Harness FPD20_05R	19.02.2007	FM	PACS-NXH-DP-0005	Y	Integrated acc. HP-2-ASED-PR-0077
CI : 131 100 PACS WIH Harness FPD20_08R	19.02.2007	FM	PACS-NXH-DP-0005	Y	Integrated acc. HP-2-ASED-PR-0077
CI : 131 100 PACS WIH Harness FPD20_01N	19.02.2007	FM	PACS-NXH-DP-0005	Y	Integrated acc. HP-2-ASED-PR-0077
CI : 131 100 PACS WIH Harness FPD20_03N	19.02.2007	FM	PACS-NXH-DP-0005	Y	Integrated acc. HP-2-ASED-PR-0077
CI : 131 100 PACS WIH Harness FPD20_04N	19.02.2007	FM	PACS-NXH-DP-0005	Y	Integrated acc. HP-2-ASED-PR-0077
CI : 131 100 PACS WIH Harness FPD20_05N	19.02.2007	FM	PACS-NXH-DP-0005	Y	Integrated acc. HP-2-ASED-PR-0077
CI : 131 100 PACS WIH Harness FPD20_06N	19.02.2007	FM	PACS-NXH-DP-0005	Y	Integrated acc. HP-2-ASED-PR-0077
CI : 131 100 PACS WIH Harness FPD20_07N	19.02.2007	FM	PACS-NXH-DP-0005	Y	Integrated acc. HP-2-ASED-PR-0077
CI : 131 100 PACS WIH Harness FPD20_08N	19.02.2007	FM	PACS-NXH-DP-0005	Y	Integrated acc. HP-2-ASED-PR-0077
PACS SIH Harness					
CI : 131 100 PACS SIH Harness 121432-03-331 SIH-SP-01	22.02.2007	FM	HP-2-CASA-DP-0015	Y	Integrated acc. HP-2-ASED-PR-0077
CI : 131 100 PACS SIH Harness	22.02.2007	FM	HP-2-CASA-DP-0015	Y	Integrated acc. HP-2-ASED-PR-0077

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Equipment / CI-No.	Integr. Date	Model, Serial No	ABCL Ref. (or EIDP)	Qualified	Remarks / Open Work / NCR's
121432-03-332 SIH-SP-02					
CI : 131 100 PACS SIH Harness 121432-03-333 SIH-SP-03	22.02.2007	FM	HP-2-CASA-DP-0015	Y	Integrated acc. HP-2-ASED-PR-0077
CI : 131 100 PACS SIH Harness 121432-03-334 SIH-SP-04	22.02.2007	FM	HP-2-CASA-DP-0015	Y	Integrated acc. HP-2-ASED-PR-0077
CI : 131 100 PACS SIH Harness 121432-03-335 SIH-SP-05	22.02.2007	FM	HP-2-CASA-DP-0015	Y	Integrated acc. HP-2-ASED-PR-0077
CI : 131 100 PACS SIH Harness 121432-03-336 SIH-SP-06	22.02.2007	FM	HP-2-CASA-DP-0015	Y	Integrated acc. HP-2-ASED-PR-0077
CI : 131 100 PACS SIH Harness 121432-03-337 SIH-SP-07	22.02.2007	FM	HP-2-CASA-DP-0015	Y	Integrated acc. HP-2-ASED-PR-0077
CI : 131 100 PACS SIH Harness 121432-03-338 SIH-SP-08	22.02.2007	FM	HP-2-CASA-DP-0015	Y	Integrated acc. HP-2-ASED-PR-0077
CI : 131 100 PACS SIH Harness 121432-03-339 SIH-SP-09	22.02.2007	FM	HP-2-CASA-DP-0015	Y	Integrated acc. HP-2-ASED-PR-0077
CI : 131 100 PACS SIH Harness 121432-03-33A SIH-SP-10	22.02.2007	FM	HP-2-CASA-DP-0015	Y	Integrated acc. HP-2-ASED-PR-0077

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Equipment / CI-No.	Integr. Date	Model, Serial No	ABCL Ref. (or EIDP)	Qualified	Remarks / Open Work / NCR's
CI : 131 100 PACS SIH Harness 121432-03-33B SIH-SP-11	22.02.2007	FM	HP-2-CASA-DP-0015	Y	Integrated acc. HP-2-ASED-PR-0077
CI : 131 100 PACS SIH Harness 121432-03-33C SIH-SP-12	22.02.2007	FM	HP-2-CASA-DP-0015	Y	Integrated acc. HP-2-ASED-PR-0077
CI : 131 100 PACS SIH Harness 121432-03-33C SIH-SP-13	22.02.2007	FM	HP-2-CASA-DP-0015	Y	Integrated acc. HP-2-ASED-PR-0077
CI : 131 100 PACS SIH Harness 121432-03-33D SIH-SP-14	22.02.2007	FM	HP-2-CASA-DP-0015	Y	Integrated acc. HP-2-ASED-PR-0077
CI : 131 100 PACS SIH Harness 121432-03-33 ^E SIH-SP-15	22.02.2007	FM	HP-2-CASA-DP-0015	Y	Integrated acc. HP-2-ASED-PR-0077
SVM SPIRE 125200					
Panel ~Z (SPIRE/CCU)	19.10.2007	STM			Final closed acc.H-P-PR-AI-0058 Iss.02 Step 260 to 370
CI : 125200 SPIRE DCU Box	04.04.2007	PFM	HP-2-RAL-DP-0004 Iss.2	Y	Integrated acc. HP-2-ASED-PR-0076
CI : 25200 SPIRE DPU Box	03.04.2007	PFM	HP-2-RAL-DP-0004 Iss.2	Y	Integrated acc. HP-2-ASED-PR-0076
CI : 122 200 SPIRE FCU Box	03.04.2007	PFM	HP-2-RAL-DP-0004 Iss.2	Y	Integrated acc. HP-2-ASED-PR-0076
CI : 125200 SPIRE LPU box	12.10.2007	FM	HP-2-RAL-DP-0004 Iss.2	Y	Prepared acc. SD-0186 and final integrated acc.LAM.SSP.SPI.PRC,070911_02 Iss1 Suess R. SA.Kopper& LAM
CI : 121 420 CCU Box	13.02.2007	FM S/N 02143	HP-2-PANT-DP-0571.5		Integrated acc. HP-2-ASED-PR-0076
SPIRE WIH Harness					


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CI : 121 220 SPIRE Harness WIH	16.02.2007	FM	SPIRE-SAP-DOC-002787	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P01	04.09.2007	PFM	SPIRE-SAP-DOC-002787	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P02	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P03	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P04	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P05	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P06	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P07	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P08	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P09	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P10	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P11	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P12	04.09.2007	PFM	SPIRE-SAP-DOC-002787	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P13	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P14	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P15	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P16	04.09.2007	PFM	SPIRE-SAP-DOC-002787	Y	Integrated acc. HP-2-ASED-PR-0073

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Equipment / CI-No.	Integr. Date	Model, Serial No	ABCL Ref. (or EIDP)	Qualified	Remarks / Open Work / NCR's
CI : 122 300 SPIRE DCU P17	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P18	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P19	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P20	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P21	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P22	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P23	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P24	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P25	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P26	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P27	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P28	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P29	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P30	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P31	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P32	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 100 SPIRE DPU P01	04.09.2007	PFM	SPIRE-SAP-DOC-002787	Y	Integrated acc. HP-2-ASED-PR-0073

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CI : 122 100 SPIRE DPU P02	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 100 SPIRE DPU P03	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 100 SPIRE DPU P04	04.09.2007	PFM	SPIRE-SAP-DOC-002787	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 100 SPIRE DPU P05	04.09.2007	PFM	«	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 100 SPIRE DPU P06	04.09.2007	PFM	«	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 100 SPIRE DPU P07	04.09.2007	PFM	«	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 100 SPIRE DPU P08	04.09.2007	PFM	«	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 100 SPIRE DPU P09	04.09.2007	PFM	«	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 100 SPIRE DPU P10	04.09.2007	PFM	«	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 100 SPIRE DPU P11	04.09.2007	PFM	«	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 100 SPIRE DPU P12	04.09.2007	PFM	«	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 200 SPIRE FCU P01	15.10.2007	PFM	SPIRE-SAP-DOC-002787	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 200 SPIRE FCU P02	15.10.2007	PFM	«	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 200 SPIRE FCU P03	15.10.2007	PFM	«	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 200 SPIRE FCU P04	15.10.2007	PFM	«	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 200 SPIRE FCU P05	15.10.2007	PFM	«	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 200 SPIRE FCU P06	15.10.2007	PFM	«	Y	Integrated acc. HP-2-ASED-PR-0073


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CI : 122 200 SPIRE FCU P07	15.10.2007	PFM	«	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 200 SPIRE FCU P08	15.10.2007	PFM	«	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 200 SPIRE FCU P09	15.10.2007	PFM	«	Y	Integrated on FCU by SPIRE
CI : 122 200 SPIRE FCU P10	15.10.2007	PFM	«	Y	Integrated on FCU by SPIRE
CI : 122 200 SPIRE FCU P11	04.09.2007	PFM	«	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 200 SPIRE FCU P12	04.09.2007	PFM	SPIRE-SAP-DOC-002787	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 200 SPIRE FCU P13	15.10.2007	PFM	«	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 200 SPIRE FCU P14	15.10.2007	PFM	«	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 200 SPIRE FCU P17	15.10.2007	PFM	«	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 200 SPIRE FCU P18	15.10.2007	PFM	«	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 200 SPIRE FCU P19	15.10.2007	PFM	«	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 200 SPIRE FCU P20	15.10.2007	PFM	«	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 200 SPIRE FCU P21	15.10.2007	PFM	«	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 200 SPIRE FCU P22	15.10.2007	PFM	«	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 200 SPIRE FCU P23	04.09.2007	PFM	«	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 200 SPIRE FCU P24	04.09.2007	PFM	«	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 200 SPIRE FCU P25	04.09.2007	PFM	«	Y	Integrated acc. HP-2-ASED-PR-0073


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CI : 122 200 SPIRE FCU P26	04.09.2007	PFM	«	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 200 SPIRE FCU P29	15.10.2007	PFM	«	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 200 SPIRE FCU P30	15.10.2007	PFM	«	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 200 SPIRE FCU P31	15.10.2007	PFM	«	Y	Integrated on FCU by SPIRE
CI : 122 200 SPIRE FCU P32	15.10.2007	PFM	«	Y	Integrated on FCU by SPIRE
CI : 122 200 SPIRE FCU P33	15.10.2007	PFM	«	Y	Integrated on FCU by SPIRE
CI : 122 200 SPIRE FCU P34	15.10.2007	PFM	«	Y	Integrated on FCU by SPIRE
CI : 122 200 SPIRE FCU P35	15.10.2007	PFM	«	Y	Integrated on FCU by SPIRE
CI : 122 200 SPIRE FCU P29 to LPU P43	15.10.2007	PFM	«	Y	Harness modified acc. SPIRE -RAL-PRJ-000608 Iss1.4-
CI : 122 200 SPIRE FCU P30 to LPU P44	15.10.2007	PFM	«	Y	Harness modified acc. SPIRE -RAL-PRJ-000608 Iss1.4
CI : 122 200 SPIRE DB04 P01 to LPU P41	15.10.2007	PFM	«	Y	Harness modified acc. SPIRE -RAL-PRJ-000608 Iss1.4
CI : 122 200 SPIRE DB04 P02 to LPU P42	15.10.2007	PFM	«	Y	Harness modified acc. SPIRE -RAL-PRJ-000608 Iss1.4
CCU Harness					
CI : 214 100 CCU-A P01	13.09.2007	FM	SPIRE-SAP-DOC-002787		Final Integrated acc. PR-0073
CI : 214 100 CCU-A P02	13.09.2007	FM	«		Final Integrated acc. PR-0073
CI : 214 100 CCU-A P03	13.09.2007	FM	«		Final Integrated acc. PR-0073
CI : 214 100 CCU-A P04	13.09.2007	FM	«		Final Integrated acc. PR-0073


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CI : 214 100 CCU-A P05	13.09.2007	FM	«		Final Integrated acc. PR-0073
CI : 214 100 CCU-A P06	13.09.2007	FM	«		Final Integrated acc. PR-0073
CI : 214 100 CCU-A P07	13.09.2007	FM	«		Final Integrated acc. PR-0073
CI : 214 100 CCU-A P08	13.09.2007	FM	«		Final Integrated acc. PR-0073
CI : 214 100 CCU-A P09	13.09.2007	FM	«		Final Integrated acc. PR-0073
CI : 214 100 CCU-A P10	13.09.2007	FM	«		Final Integrated acc. PR-0073
CI : 214 100 CCU-A P11	13.09.2007	FM	«		Final Integrated acc. PR-0073
CI : 214 100 CCU-A P12	13.09.2007	FM	«		Final Integrated acc. PR-0073
CI : 214 100 CCU-A P13	13.09.2007	FM	SPIRE-SAP-DOC-002787		Final Integrated acc. PR-0073
CI : 214 100 CCU-B P01	13.09.2007	FM	«		Final Integrated acc. PR-0073
CI : 214 100 CCU-B P02	13.09.2007	FM	«		Final Integrated acc. PR-0073
CI : 214 100 CCU-B P03	13.09.2007	FM	«		Final Integrated acc. PR-0073
CI : 214 100 CCU-B P04	13.09.2007	FM	«		Final Integrated acc. PR-0073
CI : 214 100 CCU-B P05	13.09.2007	FM	«		Final Integrated acc. PR-0073
CI : 214 100 CCU-B P06	13.09.2007	FM	«		Final Integrated acc. PR-0073
CI : 214 100 CCU-B P07	13.09.2007	FM	«		Final Integrated acc. PR-0073
CI : 214 100 CCU-B P08	13.09.2007	FM	«		Final Integrated acc. PR-0073

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Equipment / CI-No.	Integr. Date	Model, Serial No	ABCL Ref. (or EIDP)	Qualified	Remarks / Open Work / NCR's
CI : 214 100 CCU-B P09	13.09.2007	FM	«		Final Integrated acc. PR-0073
CI : 214 100 CCU-B P10	13.09.2007	FM	«		Final Integrated acc. PR-0073
CI : 214 100 CCU-B P11	13.09.2007	FM	«		Final Integrated acc. PR-0073
CI : 214 100 CCU-B P12	13.09.2007	FM	«		Final Integrated acc. PR-0073
CI : 214 100 CCU-B P13	13.09.2007	FM	«		Final Integrated acc. PR-0073
SPIRE SIH Harness 121432-03-32B	04.04.2007	FM		Y	Preintegrated acc. HP-2-ASED-PR-0073
SPIRE SIH Harness 121432-03-32A	04.04.2007	FM		Y	Preintegrated acc. HP-2-ASED-PR-0073
SPIRE SIH Harness 121432-03-32C	04.04.2007	FM		Y	Preintegrated acc. HP-2-ASED-PR-0073
SPIRE SIH Harness 121432-03-321	04.04.2007	FM		Y	Preintegrated acc. HP-2-ASED-PR-0073
SPIRE SIH Harness 121432-03-322	04.04.2007	FM		Y	Preintegrated acc. HP-2-ASED-PR-0073
SPIRE SIH Harness 121432-03-323	04.04.2007	FM		Y	Preintegrated acc. HP-2-ASED-PR-0073
SPIRE SIH Harness 121432-03-324	04.04.2007	FM		Y	Preintegrated acc. HP-2-ASED-PR-0073
SPIRE SIH Harness 121432-03-325	04.04.2007	FM		Y	Preintegrated acc. HP-2-ASED-PR-0073
SPIRE SIH Harness 121432-03-326	04.04.2007	FM		Y	Preintegrated acc. HP-2-ASED-PR-0073
SPIRE SIH Harness 121432-03-327	04.04.2007	FM		Y	Preintegrated acc. HP-2-ASED-PR-0073
SPIRE SIH Harness 121432-03-328	04.04.2007	FM		Y	Preintegrated acc. HP-2-ASED-PR-0073
SPIRE SIH Harness 121432-03-329	04.04.2007	FM		Y	Preintegrated acc. HP-2-ASED-PR-0073


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Equipment / CI-No.	Integr. Date	Model, Serial No	ABCL Ref. (or EIDP)	Qualified	Remarks / Open Work / NCR's
Panel +Y+Z (TT&C)	09.11.2007	STM			Final closure acc.H-P-PR-AI-0058 Iss.02 Step 500 to 630
CI : 341 000 Transponder	12.06.2007	FM5; S/N 006	H-P-4-AEO-2600, iss. 01	Y	
Panel +Z (VMC)	08.11.2007	STM			Final closure acc.H-P-PR-AI-0058 Iss.02 Step 10 to 130
Panel -Y+Z(RW)		STM			
Panel -Y (HIFI1)		STM			
Panel -Y-Z(HIFI2)		STM			
Panel +Y (PWR)		FM			
CI : 361 000 PCDU	21.05.2007	FM3; S/N 004		Y	
SPIRE EMC test adaptor	29.11.2007	EGSE	Fig. 6-5 of HP-2-ASED-TP-0155_1.1	n.a.	Temporarily installed for EMC test, remains installed for transport to ETS
CDMU					
ACC					
BAT					
Harness					
CI : 121 431 CCH SVM Harness 121431-03-311 SCA-10	15.02.2007	FM	HP-2-CASA-DP-0012	Y	Preintegrated acc. HP-2-ASED-PR-0073
CI : 121 431 CCH SVM Harness 121431-03-311 SCA-11	15.02.2007	FM	HP-2-CASA-DP-0012	Y	Preintegrated acc. HP-2-ASED-PR-0073
CI : 121 431 CCH SVM Harness 121431-03-311 SCA-12	15.02.2007	FM	HP-2-CASA-DP-0012	Y	Preintegrated acc. HP-2-ASED-PR-0073

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CI : 121 431 CCH SVM Harness 121431-03-311 SCA-31	15.02.2007	FM	HP-2-CASA-DP-0012	Y	Preintegrated acc. HP-2-ASED-PR-0073
CI : 121 431 CCH SVM Harness 121431-03-311 SCA-32	15.02.2007	FM	HP-2-CASA-DP-0012	Y	Preintegrated acc. HP-2-ASED-PR-0073
CI : 121 431 CCH SVM Harness 121431-03-311 SCA-33	15.02.2007	FM	HP-2-CASA-DP-0012	Y	Preintegrated acc. HP-2-ASED-PR-0073
CI : 121 431 CCH SVM Harness 121431-03-311 SCA-34	15.02.2007	FM	HP-2-CASA-DP-0012	Y	Preintegrated acc. HP-2-ASED-PR-0073
CI : 121 431 CCH SVM Harness 121431-03-312 SCA-10	15.02.2007	FM	HP-2-CASA-DP-0012	Y	Preintegrated acc. HP-2-ASED-PR-0073
CI : 121 431 CCH SVM Harness 121431-03-312 SCA-11	15.02.2007	FM	HP-2-CASA-DP-0012	Y	Preintegrated acc. HP-2-ASED-PR-0073
CI : 121 431 CCH SVM Harness 121431-03-312 SCA-12	15.02.2007	FM	HP-2-CASA-DP-0012	Y	Preintegrated acc. HP-2-ASED-PR-0073
CI : 121 431 CCH SVM Harness 121431-03-312 SCA-31	15.02.2007	FM	HP-2-CASA-DP-0012	Y	Preintegrated acc. HP-2-ASED-PR-0073
CI : 121 431 CCH SVM Harness 121431-03-312	15.02.2007	FM	HP-2-CASA-DP-0012	Y	Preintegrated acc. HP-2-ASED-PR-0073

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Equipment / CI-No.	Integr. Date	Model, Serial No	ABCL Ref. (or EIDP)	Qualified	Remarks / Open Work / NCR's
SCA-32					
CI : 121 431 CCH SVM Harness 121431-03-312 SCA-33	15.02.2007	FM	HP-2-CASA-DP-0012	Y	Preintegrated acc. HP-2-ASED-PR-0073
CI : 121 431 CCH SVM Harness 121431-03-312 SCA-34	15.02.2007	FM	HP-2-CASA-DP-0012	Y	Preintegrated acc. HP-2-ASED-PR-0073
DECMEC Harness	20.02.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0077
DBH4 LCP I/F-CB P01	02.10.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0078
DBH4 LCP I/F-CB P02	02.10.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0078
DBH4 LCP I/F-CB P03	02.10.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0078
DBH4 LCP I/F-CB P04	02.10.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0078
DBH4 LCP I/F-CB P05	02.10.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0078
DBH4 LCP I/F-CB P06	02.10.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0078
DBH4 LCP I/F-CB P07	02.10.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0078
FH LSU Harness P01	02.10.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0078
FH LSU Harness P02	02.10.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0078
FH LSU Harness P03	02.10.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0078
FH LSU Harness P04	02.10.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0078


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FH LSU Harness P05	02.10.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0078
FH LSU Harness P06	02.10.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0078
FH LSU Harness P07	02.10.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0078
FH LSU Harness P08	02.10.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0078
FH LSU Harness P09	02.10.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0078
FH LSU Harness P10	02.10.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0078
Coaxcables SIH SH 21 P03	01.10.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0143
Coaxcables SIH SH 22 P04	01.10.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0143
Coaxcables SIH SH 23 P01	01.10.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0143
Coaxcables SIH SH 24 P02	01.10.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0143
Coaxcable HIFI-1 LSU P10 RF-8a	01.10.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0078 Re-routed
Coaxcable HIFI-1 LSU P09 RF-7	01.10.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0078 Re-routed
Coaxcable HIFI-1 LSU P07 RF-5	01.10.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0078 Re-routed
Coaxcable HIFI-1 LSU P06 RF-6a	01.10.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0078 Re-routed
Accelerometers				Y	
331 + Y panel (power)	13.08.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
334 + Y panel (power)	13.08.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099

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335 + Y panel (power)	13.08.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
336 + Y panel (power)	13.08.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
337 + Y panel (power)	13.08.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
338 + Y panel (power)	13.08.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
341 + Y - Z panel (PACS)	13.08.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
342 + Y - Z panel (PACS)	13.08.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
361 - Y - Z panel (HIFI-2)	13.08.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099 (w ill be removed after Vibration Test)
362 - Y - Z panel (HIFI-2)	13.08.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
365 - Y - Z panel (HIFI-2)	13.08.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
371 - Y panel (HIFI-1)	13.08.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
372 - Y panel (HIFI-1)	13.08.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
373 - Y panel (HIFI-1)	13.08.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
374 - Y panel (HIFI-1)	13.08.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
375 - Y panel (HIFI-1)	13.08.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
376 - Y panel (HIFI-1)	13.08.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
453 - Z + Y shearwall	13.08.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099

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Equipment / CI-No.	Integr. Date	Model, Serial No	ABCL Ref. (or EIDP)	Qualified	Remarks / Open Work / NCR's
514 Cone	13.08.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
523 Cone	13.08.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
531 Cone	13.08.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099 (w ill be removed after Vibration Test)
532 Cone	13.08.2007	FM		Y	Integrated acc. To HP-2-ASED-PR-0099
535 Cone	13.08.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
702 Upper closure panel	13.08.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099 (w ill be removed after Vibration Test)
706 Upper closure panel	13.08.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099 (w ill be removed after Vibration Test)
811 P/L Subplatform	13.08.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
351 - Z panel (SPIRE)	22.08.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
453 - Z + Y Shearwall	22.08.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
211 Thermal Closing and Baffle	04.09.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
312 + Z panel	04.09.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
321 + Y + Z panel	04.09.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
322 +Y + Z panel	04.09.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
323 +Y + Z panel	04.09.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
324 +Y + Z panel	04.09.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
381	04.09.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099


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-Y + Z panel					
312 + Z panel	04.09.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
382 -Y + Z panel	04.09.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
383 -Y + Z panel	04.09.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
384 -Y + Z panel	04.09.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
383 -Y + Z panel	04.09.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
386 -Y + Z panel	04.09.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
412 +Z -Y panel	04.09.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
424 +Z +Y panel shearwall	04.09.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
423 +Z +Y panel shearwall	04.09.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
432 +Z +Y panel shearwall	04.09.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
921 STR Assembly	05.09.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
923 STR Assembly	05.09.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
425 +Z +Y panel shearwall (external)	05.09.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
426 +Z +Y panel shearwall (external)	05.09.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
623 Tanks	05.09.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099


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627 Tanks	05.09.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
Thermistors					
THM 52	06.08.2007	FM; 0504A0221		Y	Integrated acc. H-P-ED-AI-0033
THM 100	06.08.2007	FM; 0504A0223		Y	Integrated acc. H-P-ED-AI-0033
THM 53	06.08.2007	FM; 0504A0029		Y	Integrated acc. H-P-ED-AI-0033
THM 101	06.08.2007	FM; 0504A0235		Y	Integrated acc. H-P-ED-AI-0033
THM 149	06.08.2007	FM; 0504A0240		Y	Integrated acc. H-P-ED-AI-0033
THM 54	06.08.2007	FM; 0504A0093		Y	Integrated acc. H-P-ED-AI-0033
THM 102	06.08.2007	FM; 0504A0137		Y	Integrated acc. H-P-ED-AI-0033
THM 150	06.08.2007	FM; 0504A0201		Y	Integrated acc. H-P-ED-AI-0033
THM 56	06.08.2007	FM; 0504A0202		Y	Integrated acc. H-P-ED-AI-0033 Swaped with THM 104 (see: NC-3598)
THM 104	06.08.2007	FM; 0504A0209		Y	Integrated acc. H-P-ED-AI-0033 Swaped with THM 56 (see: NC-3598)
THM 152	06.08.2007	FM; 0504A0217		Y	Integrated acc. H-P-ED-AI-0033
THM 58	18.04.2007	FM; 0504A0155		Y	Integrated acc. H-P-ED-AI-0033
THM 106	18.04.2007	FM; 0504A0241		Y	Integrated acc. H-P-ED-AI-0033
THM 154	18.04.2007	FM; 0504A0058		Y	Integrated acc. H-P-ED-AI-0033

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THM 61	08.08.2007	FM; 0504A0065		Y	Integrated acc. H-P-ED-AI-0033
THM 109	08.08.2007	FM; 0504A0066		Y	Integrated acc. H-P-ED-AI-0033
THM 157	08.08.2007	FM; 0504A0092		Y	Integrated acc. H-P-ED-AI-0033
THM 63	08.08.2007	FM; 0504A0059		Y	Integrated acc. H-P-ED-AI-0033
THM 111	08.08.2007	FM; 0504A0060		Y	Integrated acc. H-P-ED-AI-0033
THM 159	08.08.2007	FM; 0504A0061		Y	Integrated acc. H-P-ED-AI-0033
THM 65	09.08.2007	FM; 0504A0174		Y	Integrated acc. H-P-ED-AI-0033
THM 113	09.08.2007	FM; 0504A0182		Y	Integrated acc. H-P-ED-AI-0033
THM 161	09.08.2007	FM; 0504A0183		Y	Integrated acc. H-P-ED-AI-0033
THM 66	09.08.2007	FM; 0504A0164		Y	Integrated acc. H-P-ED-AI-0033
THM 114	09.08.2007	FM; 0504A0168		Y	Integrated acc. H-P-ED-AI-0033
THM 162	09.08.2007	FM; 0504A0171		Y	Integrated acc. H-P-ED-AI-0033
THM 67	09.08.2007	FM; 0504A0147		Y	Integrated acc. H-P-ED-AI-0033
THM 115	09.08.2007	FM; 0504A0148		Y	Integrated acc. H-P-ED-AI-0033
THM 163	09.08.2007	FM; 0504A0154		Y	Integrated acc. H-P-ED-AI-0033
THM 68	09.08.2007	FM; 0504A0193		Y	Integrated acc. H-P-ED-AI-0033
THM 116	09.08.2007	FM; 0504A0198		Y	Integrated acc. H-P-ED-AI-0033

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THM 164	09.08.2007	FM; 0504A0199		Y	Integrated acc. H-P-ED-AI-0033
THM 76	09.08.2007	FM; 0504A0040		Y	Integrated acc. H-P-ED-AI-0033
THM 124	09.08.2007	FM; 0504A0057		Y	Integrated acc. H-P-ED-AI-0033
THM 172	09.08.2007	FM; 0504A0047		Y	Integrated acc. H-P-ED-AI-0033
Startrecker					
Startrecker STR 1	13.09.2007 06.11.2007	FM1;S/N 01 FM1;S/N 05		Y	Integrated acc. H-P-PR-AI-0083 06.11.2007 integrated by Hengstler/Schmidt
Startrecker STR 2	22.11.2007	FM 2; S/N 02		Y	Integrated acc. H-P-PR-AI-0083 22.11.2007 integrated by Thales Alenia Space

End of list

PURPOSE :

IST Test Readiness Review/TRR Closeout Board/TRR Part 2

CLASSIFICATION :

ATTENDEES	FIRM	SIGNATURE	ATTENDEES	FIRM	SIGNATURE
S Mooney	TASF		O. Martin	ASED	
J. Hall	TASF		C. Much	ASED	
M. Priestley	TASF		M.Oort	TASF	
J. Vandenhove	TASF		P.Couzin	TASF	
A. Gatti	ESA		G. Beaufils	TASF	
J.Huesler	ESA		R. Reutemann (PT)	ESA	
WRITTEN BY : J. Hall			Chair:	A. Knight	

CONCLUSION :

All major issues have been reviewed and all open work is listed in the test release sheet.

With the closure of the test release sheet the TRR will reconvene to verify and give approval for the start of the test.

Given the current incomplete status of the spacecraft, TAS-F agreement of the TRR minutes provides confirmation and authorisation to perform the IST1 part 1 tests in the current configuration.

Deviations from the requirements specification resulting from the open NCRs as listed in this TRR minutes are accepted by this TRR for IST1 part 1.


The TRR closeout board concludes that with the closure of the open work items and the formal issue of the procedures, the IST1 part 1 tests: 'mode transitions', 'ACMS commissioning' and 'Satellite Commissioning' can commence

The TRR part 2 board concludes that with the closure of the open work items and the formal issue of the procedures, the IST1 part 1 tests: 'nominal launch sequence', 'launch robustness' and 'Launch clean run' can commence

DISTRIBUTION : ATTENDEES	FOR FURTHER ACTION :	See MoM and action item table at end of minutes
	FOR INFORMATION :	ASED : R HOHN, M MUELLER, M. KOLLE, J KROEKER, W FRICKE, R STRITTER, R. VASCOTTO TAS-F : A KNIGHT, P COUZIN, B COLLAUDIN, F SAUVAGE, Y ROCHE, D MONTET, JM REIX, T GRASSIN, J.VANDERHOVE

APPROVED BY

NAME				
SIGNATURE				

	REF.: H-P-TASF-MN-9960 issue 2	
	HERSCHEL FM	
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MINUTES OF MEETING		PLACE : System Meeting Room

	ACTION
<p><u>Introduction</u></p> <p>The following TRR shall assess the go ahead status for the Herschel IST 1 part 1 tests.</p> <p>Previous Meeting</p> <p>IST Pre TRR meeting H-P-TASF-MN-9959 IST procedure evaluation meeting H-P-TASF-MN-9992</p> <p>Agenda:</p> <ol style="list-style-type: none"> 1. Identification of Test Item 2. Inspection Status 3. NCR/RFD status 4. Open work/Open Action 5. Test procedure/Timeline 6. Safety Hazards and Hazardous operations 7. Test equipment/Facility and Calibration Status 8. Cleanliness 9. Test Personnel and Responsibilities 10. Problem Areas 11. AOB 12. Conclusion <p>Test Cases to be executed for IST 1 part 1:</p> <ul style="list-style-type: none"> • Launch sequence • Launch Sequence Robustness • Launch Clean Run • Mode Transitions • Satellite commissioning • ACMS Commissioning <p>A second TRR was convened on 23rd January 2008 to discuss the status of the launch scenario tests.</p>	
<p style="text-align: center;">Identification of Test Item</p> <p>As Designed</p> <ul style="list-style-type: none"> • S/C CIDL Herschel S/C CI#100000 CIDL: H-P-2-ASP-LI-1054 iss.1 	

As Built

H-EPLM Integration Status List

ASED PLM ISL: HP-2-ASED-LI-0033 Status 11.12.2007
See Annex 3

SVM Integration Status List

ASED SVM ISL: HP-2-ASED-LI-0033 Status 19.12.2007
See Annex 4

The above were produced for this TRR review

SW Configuration

- **CDMS**
V 3.1.3
- **ACMS**
V 3.7
- **HPSDB**
V 6

- The HPSDB must be updated prior to the execution of the IST1 part 1 tests.

Version 6 of the HPSDB shall be loaded following go ahead from an IRR.
This IRR shall be held 11/1/2008

Open Work

The IST specification expects a fully integrated spacecraft. Current deviations from this status are:

- Listed in Annex 1

The TRR states that the proposed configuration is acceptable for the execution of the IST1 part 1 tests.

The CCU will be disconnected during the IST1 part 1 tests due to the ongoing bake-out operation.

It shall be identified whether the sensors shall be left open or connected to GSE during the test.

The valves activation TASF require the signals to be monitored. A procedure shall be provided to cover this within the launch sequences will require a test box connection. This shall be validated by TASF

Open Work

Inspection Status	
<p>Before the test commences, a 4eye inspection shall be performed by the test conductor and QA responsible.</p> <p>Open work</p>	
NCR/RFD status	
<p>The following NCRs were considered blocking for the IST1 part 1 tests as identified in the Pre-TRR status meeting minutes H-P-TASF-MN-9959. These minutes also identify the NCRs that should be closed by these tests.</p> <p>NCR3472: It is proposed that the flight battery shall be used for launch clean run. An NRB with system power team shall be performed prior to execution of the Launch clean run to validate the approach. This NCR is considered not an issue for the other launch scenarios. An NRB is planned for 15/1/2008 This is a blocking NCR</p> <p>NCR 3821/3842: ACMS memory dump issues. This should be corrected with the new release of the BSW which should be delivered as part ACMS 3.8. NRB decision is to skip the parts of the test during the IST1 part 1 testing. This is not a blocking NCR</p> <p>NCR2998: Incorrect connector It is mandatory that this pin swap is performed prior to any launch test case. It is the recommendation of the TRR that the night shift be used for this (14/1/2008) This is a blocking NCR</p> <p>NCR3769: Incorrect TC in HPSDB There is an HPSDB NCR review ongoing at TAS-F. It is believed that this may be resolved in version 6 of the HPSDB. This impacts the loading of the OBCP. Therefore this does not block fully the execution of the test, but if not resolved, it shall impact the OBCP part of each test case. This is not a blocking NCR</p> <p>NCR3483: Missing calibration curve Believed to be solved in HPSDB issue 6. This will be verified during the SFT. The TRR decision is to leave the workaround for this NCR in place during IST1 part 1. This is not a blocking NCR</p>	

NCR 3749: OBCP and payload EAT missing
 There is an HPSDB NCR review ongoing at TAS-F. It is believed that this may be resolved in version 6 of the HPSDB.
 This impacts the loading of the OBCP. Therefore this does not block fully the execution of the test, but if not resolved, it shall impact the OBCP part of each test case.

This is not a blocking NCR

NCR 3492: Mass memory errors
 NCR is still open.

**An NRB must be held with TAS-I to determine the status of this NCR.
 This is not a blocking NCR**

Non Critical NCRs

NCR 3195: Unexpected reconfiguration of the CDMS.
 Modification have been made to close this NCR and a retest has been performed. This will be closed after the IST1 part 1 if the anomaly no longer occurs

NCR 3419: Unknown packets after OBCP triggering
 Should be resolved with HPSDB version 6. Not foreseen to be seen during IST 1 part 1 as no OBCPs should be triggered

NCR 3458: COCOS Memory dump
 This NCR covered by NCR 3842

NCR 3834: OBCP upload problems
 There is an HPSDB NCR review ongoing at TAS-F. It is believed that this may be resolved in version 6 of the HPSDB.
 This impacts the loading of the OBCP. Therefore this does not block fully the execution of the test, but if not resolved, it shall impact the OBCP part of each test case.

Version 6 of the HPSDB has been used on Planck and the raised NCRs have seen to be resolved.

AIT shall verify that the OBCP loading sequence is correct for the version 6 HPSDB.

Open Work

Open work/Open Action

Open Actions From IST Progress Review:

AI#2: Closed. SM to contact M.Langfermann. During the bake-out it will not be possible to connect to the CCU.

AI#3: Open.

- TAS-F (AK) to confirm the as built configuration for the test related to heaters and thermistors.
- AIT (CM) shall then modify the test configuration table to disable the appropriate lines.
- The configuration file for SW version 3.1.3 is not yet available at ASED. ASED (OM) shall organise the preparation of the file or alternative means.

Open Work

AI#4: Open

Evaluation is ongoing. This is not a prerequisite for the IST1 part 1 test to commence.

AI#7: Open

These are not covered in issue 6 of the IST Specification. ASED (CM) will ensure TAS-F (GB) has the latest version of the NCR. TAS-F will evaluate and, if there are no issues with the NCR, the NCR shall be deemed as applicable for the IST1 part 1 tests.

TAS-F (JV) shall coordinate this.

Open Actions from IST Pre-TRR (H-P-TASF-MN- 9959)

AI#1: Open

Agreed

AI#2: Open

Requested from TAS-I. This only affects the launch clean run procedure. TAS-I are providing engineering support to connect and commission the battery prior to the required IST1 part 1 test.

Open Work

AI#3: Closed

NCR reviews held for CDMS, ACMS and CCS.
Of the 32 identified, 8 are seen as blocking.

AI#4: Closed

ESA state that formal deviations shall only be raised for permanent deviations. For non permanent deviations the TRR shall contain a deviation

list.

AI#5: Closed

The configuration status is included in these minutes

AI#6: Open

ASED (JM) has established a problem reporting mechanism for use in the test campaigns. ASED shall organise that all testers are familiar with the mechanism to use.

Open Work

AI#7 Closed

Battery is only required for Launch clean run

AI#8: Closed

Shift pattern generated. See attached

Open Actions from IST TRR Progress Meeting (H-P-TASF-MN- 9992)

AI#1: Open

Satellite commissioning still to be provided.

AI#2: Closed

A deviation list has been raised and is attached in Annex 1

AI#3: Closed

Updated in test procedure

AI#4: Closed

Launch locks tests shall only be performed if not performed before. It must be performed after each spacecraft movement.

The test is not currently within the procedures

The TRR agrees that the launch lock tests shall be skipped for IST1 part1.

TAS-F (AK) shall inform Instruments teams to the current situation.

AI#5: Closed


A deviation list has been raised and is attached in Annex 1

AI#6: Open

Ongoing

AI#7: Closed

AI#8: Closed

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<p>A deviation list has been raised and is attached in Annex 1</p> <p>AI#9: Open Ongoing</p> <p>AI#10: Closed</p> <p>AI#11: open Ongoing. This shall be created by TAS-F (JV)</p> <p>Other Issues An NCR exists covering the issue that the status of the use of the redundant TCS side is unknown. The status of this NCR shall be verified. The test cases for IST1 part 1 do not use the redundant side. A script shall be made available to control the heaters in case of spurious FDIR event (CM). Open Work</p>	
<p style="text-align: center;">Test procedure/Timeline</p> <p>Requirement Specification Preparation for the IST1 part 1 has been made towards issue 5 of the IST specification. Issue 6 of the IST specification is in preparation (signed by TAS-F). The TRR states that the baseline for the IST1 part 1 testing is issue 5 of the IST specification plus amendments highlighted in NCR 3693. The Specification is unclear in the issue relating to the test cases in which the flight battery is used (section 5.7.6). It is agreed that only the 2 sequences listed will use the flight battery (Launch clean run & routine Mission scenario).</p> <p>The TRR agrees that this baseline is suitable for the IST1 part 1 tests to be performed.</p> <p>The IST specification reference document, spacecraft IST system requirement verification document does not exist. TAS-F are in the process of finalising the document. This must be tracked in future TRRs.</p> <p>Procedures</p> <p>The following procedures shall be executed for IST1 part 1 in the following order:</p> <p>Without flight battery:</p>	

- Mode Transition (H-P-ASED-TP-0189 iss 1.0)
- ACMS Commissioning (H-P-ASED-TP-0187 iss 1.0)
- Satellite Commissioning (H-P-ASED-TP-0186 iss 1.0)
- Nominal Launch sequence (H-P-ASED-TP-0193 iss 1.0)
- Launch robustness (H-P-ASED-TP-0195 iss 1.0)

With flight battery:

- Launch clean run(H-P-ASED-TP-0194 iss 1.0)

Documents are in process of being reviewed. Initial comments have been supplied to ASED.

TASF system engineering and TASF Test director shall be placed on the front sheet as part of the approval and signature cycle

Leading Procedure and mode Transition shall be reviewed and finalised by 11/1/2008 to have these two documents ready for start of IST1 part 1 tests on 14/1/2008.

Other procedures shall be reviewed and approved in rolling reviews.

The battery conditioning procedure is required prior to Launch clean run.

For the set up of the oscilloscope for the evaluation of spurious CCU latch signals the predefined ACS shall be used.

For Mode Transitions, only sections up to and including SAM to NOM (5.8.5.7) shall be executed as the remaining tests require He II.

For Satellite commissioning, section 5.8.3.8 (CCU Commissioning) shall not be performed as He II is required.

It is confirmed that the procedures which use the real RF link are to be executed in AD mode.

- ACMS Commissioning
- Spacecraft Commissioning
- Launch clean run
- Launch sequence
- Launch mode robustness

Timeline:

11/1/2008:

Attachment 2 to Section 6.1.x:

MOMs

Minutes of Meeting Mode Transitions
Checkpoint 19/04/08, H-P-TASF-MN-10349



Mode transitions checkpoint

REF.: **H-P-TASF-MN-10349**

HERSCHEL FM

DATE : 19/04/08

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MINUTES OF MEETING

PLACE : FL Meeting Room, ESTEC

PURPOSE :

CLASSIFICATION :

Mode Transitions checkpoint

ATTENDEES	FIRM	SIGNATURE	ATTENDEES	FIRM	SIGNATURE
J. Hall	TASF				
S. Mooney	TASF				
C. Much	ASED				
S. Hamer (PT)	ASED				
WRITTEN BY : J. Hall			Chair: J. Hall		


CONCLUSION :

DISTRIBUTION : ATTENDEES	FOR FURTHER ACTION :	See MoM and action item table at end of minutes
	FOR INFORMATION :	ASED : TAS-F : ESA:


APPROVED BY

NAME	J. Hall	S. Mooney		
SIGNATURE				


THALES

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	ACTION
<p><u>Agenda</u></p> <ol style="list-style-type: none"> 1. Introduction 2. Identification of Test Item 3. Test procedure/Timeline 4. NCR/RFD status 5. Safety Hazards and Hazardous operations 6. Test equipment/Facility and Calibration Status 7. Cleanliness 8. Test Personnel and Responsibilities 9. Problem Areas 10. AOB 11. Conclusion 	
<p style="text-align: center;">Introduction</p> <p>This Meeting is the checkpoint for the Mode Transitions test performed within the scope of the IST 1 part 2 testing for the Herschel satellite.</p>	
<p style="text-align: center;">Identification of Test Item</p> <p>As Designed</p> <ul style="list-style-type: none"> • S/C CIDL Herschel S/C CI#100000 CIDL: H-P-2-ASP-LI-1054 iss.1 <p>As Built</p> <p>H-EPLM Integration Status List</p> <p>ASED PLM ISL: HP-2-ASED-LI-0032 iss 13 Status 17.04.2008 See Annex 1</p> <p>SVM Integration Status List</p> <p>ASED SVM ISL: HP-2-ASED-LI-0033 iss 12 Status 12.04.2008 See Annex 2</p> <p>SW Configuration</p> <ul style="list-style-type: none"> • CDMS V 3.4.0.9 • ACMS 	

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<p style="text-align: center;">V 3.7</p> <ul style="list-style-type: none"> • HPSDB HP-2-ASP-LI-1441 v 10 (11/4/2008) <p>A full software configuration is detailed in Annex 4</p> <p>Instruments: PACS: Spectro Simulated Science mode</p> <p>HIFI: Standby (ICU only ON generating housekeeping)</p> <p>SPIRE: Required to be in serendipity mode. This mode is not known. Photometer simulated Science mode shall be used.</p> <p>As the instruments are not powered into operational modes, instrument permission or monitoring support is not required to perform this test.</p> <p>The checkpoint states that the proposed configuration is acceptable for the execution of the test.</p>	
Test procedure/Timeline	
<p>Procedures</p> <p>The test shall be performed under the control of ACS HP-2-ASED-SD-0310 iss 1</p> <p>Within this the following procedures are used:</p> <p>The Leading Procedure HP-2-ASED-TP-0134 iss 3 shall be used to control the test.</p> <p>Leading procedure to have PVS raised to cope with script change for calling correct instrument shutdown procedure (within IST_End) and Procedure to be red marked where PVS is to be performed.</p> <p>Open Work</p> <p>The dedicated test procedure HP-2-ASED-TP-189 iss 2 (draft) is used to perform the testing.</p> <p>Additionally the instruments power on/off and mode switching procedure HP-2-ASED-TP-206 iss 1.1 (draft)</p>	

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<p>The ACS is currently in the signature loop.</p> <p>Signed ACS will presented for the test execution</p> <p>Open work</p> <p>Timeline:</p> <p>The test is planned to be performed 20/4/2008 starting at approximately 04:00.</p> <p>The test is foreseen to run for a duration of approximately 17 hours broken down as follows:</p> <ul style="list-style-type: none"> • IST START 2 hours • Configuration of spacecraft 0 hours • Test 14 hours • IST End 1 hours 	
<p>NCR/SPR Status</p> <p>SPRs</p> <p>SPR 6: Missing Parameters in Sel downlink TC + Missing Boot Event To be verified during this run</p> <p>SPR 28: SAM to NOM transition not conformed to Spec. To be verified during this run</p> <p>SPR 29: Problem occurs during SREM Stat Acquisition To be verified during this run</p> <p>SPR 33: ACMS SCOE errors TM 5,2 and TM 5,1 - New TM 251002939/251004939 To be verified during this run</p> <p>SPR 38: No CCU A monitoring packet received To be verified during this run</p> <p>SPR 39: IST Status Check - RCS to be extended To be verified during this run</p> <p>SPR 52: CEV disabled in thermal control</p>	

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<p>Still to be confirmed with system engineering. SPR Open</p> <p>SPR 53: CCU switch on to be asynchronous Decided that does not work for launch cases. SPR shall be closed by SRB</p> <p>SPR 54: ACMS simulator not booted Operator note #3 SPR can be closed</p> <p>SPR 55: TM check failures Recheck for TM if initial check fails. Operators have been trained SPR can be closed</p> <p>SPR59: CCS inconsistency To be verified with system engineering. NCR? Potentially blocking! SPR Open</p> <p>SPR 60: TM check failure in IST dump packet store To be verified during this run</p> <p>SPR 61: Wrong TC sent during mode transition To be verified during this run</p> <p>SPR 62: IST Status check 5.8.5.3 fails To be verified during this run</p> <p>SPR 63: Missing TC before LNCH-LNCH To be verified during this run</p> <p>SPR 64: IST Status check 5.8.5.4 fails Updated To be verified during this run</p> <p>SPR 66: XPND does not change to 4K (5.8.5.4) To be verified during this run</p> <p>SPR 67: Incorrect parameter check To be verified during this run</p> <p>SPR 69: Wrong IST Status check 5.8.5.5</p>	
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To be verified during this run

SPR 70: Syntax error in TC

To be verified during this run

SPR 71: TC in incorrect order

To be verified during this run

SPR 72: Incorrect TC

To be verified during this run

SPR 73: Low rate OCM packet still present in SCM mode

To be verified during this run

SPR 79: Before Launch to launch transition to sufficient time for config validation

To be verified during this run

SPR 80: RF output incorrect for launch to launch transition

To be verified during this run

SPR 81: Transponder RF to be displayed in SAD mimic

SPR Open. Considered minor and non blocking

SPR 82: Incorrect disabling of acknowledge flag

To be verified during this run

SPR 294: Allow downlink of all TM after transition SAM to NOM

To be verified during this run

Torino SPRs

SPR 16 IST_STATUS 5.8.5.5 shows ranging ON

Still to be investigated and clarified with system engineering.

SPR Open


SPR 18 Warning in code IST_STATUS; code to be completed

Still to be investigated and clarified with system engineering.


SPR Open

SPR 19 TC DC140160 SelDownlink Storage rejected


To be verified during this run

	<u>Mode transitions checkpoint</u>	REF.: H-P-TASF-MN-10349	
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<p>SPR 29 TM Check on MTL status failed To be verified during this run</p> <p>SPR 33 Update GET_MOT Table To be verified during this run</p> <p>SPR 50 "Fetch Problem" Proposed solution use as is (with resend TC). Potential known NCR. SRB to decide. NCR Reference to be found SPR open</p> <p>SPR 51 PACS and SPIRE Issue during mode transitions AVM issue SPR to be closed</p> <p>SPR 52 IST_STATUS to be updated to IST_SPEC change To be verified during this run</p> <p>SPR 53 Spurious Command Error on CCS AVM CCS Issue SPR to be closed</p> <p>SPR 54 SM00M500 – Mode; has incorrect value Still to be investigated. SPR Open</p> <p>SPR 64 Script Error in Mode Transition Master To be verified during this run</p> <p>SPR 65 Transponder X1 set to incorrect rate To be verified during this run</p> <p>SPR 66 Call function trap packets for CCU TM Failed Still to be investigated. SPR Open</p> <p>SPR 67 Failure in Transition SCM -> OCM To be verified during this run</p> <p>SPR 68 CEV Check Failed at enabling an non existing HK_TM Still to be investigated. SPR Open</p>	
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<p>SPR 69 XPND TMRate wrong configured To be verified during this run</p> <p>SPR 70 XPND TMRate wrong configured To be verified during this run</p> <p>NCRs</p> <p>3958: Re-occurred on OBCP actions to switch off SPIRE (Reported as HIFI off). Not a spacecraft related issue. Potentially a SCOS issue. Minor NCR with no impact</p> <p>4086: SPIRE PRIME needs to be booted with the secondary partition. No operational impact for this test</p> <p>3787: FCV-Duty cycle too long Minor NCR awaiting TASF inputs No operational impact for this test</p> <p>Other: None</p>	
Test equipment/Facility and Calibration Status	
<p>Calibration status of equipment</p> <p>All equipment within the Herschel EGSE that requires certification has been recertified.</p> <p>A full list of calibrated equipment is contained in annex 4.</p>	
Safety	
<p>The tests will be performed in Helium I.</p> <p>The following Safety related issue are identified:</p> <ul style="list-style-type: none"> • None 	
<u>Cleanliness</u>	
<p>Test will be performed in the class 100000 Hydra area at ESTEC.</p>	


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Test Personnel and responsibilities	
<p>Test Director: S. Mooney Test Conductor: C. Much PA : J. Hall Engineering Support: Y. Roche/F. Sauvage (on call +33 677 175930) Cryo Engineering Support: N/A Functional Support: S. Hamer (instrument) ESA: J. Huesler</p> <p>Test operator, as per shift EGSE support as per shift QA support as per shift</p>	
Problem Areas	
None	
AOB	
<p>The red mark to IST specification 6: Section 5.8.5.10.1 Serendipity Mode to be clarified with system engineering.</p> <p>IST 5.8.5.17 the volunteer instrument meaning is unclear (i.e. which mode is required for HIFI).</p> <p>ASED (CM) to clarify the issues with the specification with system engineering</p> <p>HIFI ICU mode is not representative for the OBCP triggering actions. Specifically the OBCP triggering for Nominal to survival mode will not be correctly tested.</p> <p>ASED (CM) to gain permission and the means from HIFI to allow the instrument to be fully powered for the formal test.</p> <p>For SPIRE and PACS the configuration is fully representative.</p>	<p style="text-align: center;">AI #1 ASED (CM) 25/4/2008</p> <p style="text-align: center;">AI #2 ASED (CM) 25/4/2008</p>
Conclusion of meeting	
The checkpoint board states formally that, given the closure of the Open work items, the mode transitions test can be executed as per the schedule.	

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OPEN WORK TO BE CHECKED OFF BY QA PRIOR TO START OF Test

1. Verify the skin connector sheet is signed by the floor manager.
2. Signed ACS will be presented for the test execution.
3. Leading procedure to have PVS raised to cope with script change for calling correct instrument shutdown procedure (within IST_End) and Procedure to be red marked where PVS is to be performed.

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Annex 1 : H-EPLM Integration Status List


Herschel H-EPLM Integration Status for Preparation Vibration Test

HP-2-ASED-LI-0032_13


Status: 17.04.2008

Equipment / CI-No.	Integr. Date	Model, Serial No	ABCL Ref. (or EIDP)	Qualified	Remarks / Open Work / NCR's
111110 HIFI FPU	17.07.2007	FM	HP-2-SRON-DP-0004 issue 5 (= SRON-U/HIFI/LI/2007-002_5)		MTD removed 07.07.06 acc.PR-0057; HIFI CQM integrated acc. PR-0063 12.07.2006, NC-2330: CQM covered with SLI iaw. SD-0109, connector fit check done iaw. SD-0105 Deintegrated 12.04.2007 K.R FM final Integration acc.HP-2-ASED-PR-0090_1 HIFI Team & AESD Team
111120 LOU PFM	11.03.2008	FM 01	HP-2-SRON-DP-0004 issue 5 (= SRON-U/HIFI/LI/2007-002_5)	y	Mating acc. to HP-2-ASED-PR-0024 Alignment wrt. FPU done on 14.07.05 Removed 29.03.2006 HP-2-ASED-SD-0053 Fitchek for Cool Down acc.PR-0098 and removed 15.02.08 H.G Integration for Coalignment of Pentaprism 28.02.08 Geiger/Schink. De-Interated acc. -PR-0098; Geiger Final Integrated acc. PR-0098 H.Geiger
112110 SPIRE FPU	18.04.2007	FM	HP-2-RAL-DP-AB-0004 issue 2 (= SPIRE-RAL-PRJ-002017_2)		MTD removed 08.05.2006 Not all temp sensors mounted, aperture cover removed CQM removed acc.PR-0057 11.04.2007;return to Supplier Final Integration acc.PR-0083 K.R. 18.04.2007
112121 SPIRE JFET Photometer	18.04.2007	FM	HP-2-RAL-DP-AB-0004 issue 2 (= SPIRE-RAL-PRJ-002017_2)		MTD Removed 05.05.2006; CQM removed acc.PR-0057 11.04.2007;return to Supplier Final Integration acc.PR-0083 K.R. 18.04.2007
112122 SPIRE JFET Spectrometer	18.04.2007	FM	HP-2-RAL-DP-AB-0004 issue 2 (= SPIRE-RAL-PRJ-002017_2)		MTD Removed 05.05.2006 P04 repaired on 14.07.06 according to NCR1394 CQM removed acc.PR-0057 11.04.2007;return to Supplier Final Integration acc.PR-0083 K.R. 18.04.2007
113110 PACS FPU	09.07.07	FM	HP-2-MPE-DP-0003 issue 1_4, (= PACS-ME-DP-003)		NC-0650 and 0658: Rework on MTD after interference was found during fit check NC-631 (= PROT-NC-0006) deviation in connector 131100 J67 M8 bolts torqued 22 Nm; NC-0807: L0 I/F bad contact, reworked, closed. Deintegrated 12.04.2007 K.R Final Integrated by MPE & T.B. acc.PR-0089 Failure Investigation: Contamination on PACS Mirror Cleaning of trog 1 by KT&ESA acc.PR-042
121110 CVV	(02.06.05)	PFM, SN01	HP-2-APCO-AB-0043, Issue 1, 19.01.05	y	NC-1161: One flange bolt broken at 30 Nm, torque reduced to 28 Nm, NC is closed. 09.12.05: 12 bolts removed for pull test & replaced by new ones from stock NC-1257: Positions of harness fixation brackets on CVV changed
121111 CVV Upper Bulkhead	planned for 06.12.07	PFM, SN01	HP-2-APCO-AB-0043, Issue 1, 19.01.05	y	NC-1174: Leakage at seal I/F to filling port; status of top plate see cryo cover 121131. Re-mated; NC-2558: Traces of contamination/corrosion found inside UB Molecular wipes taken, no aggressive radicals included, use as is for STM2. CVV screws preliminary mated: only each 4th screw inserted and torqued with 24Nm 27.07.2006 HP-2-ASED-SD-0116_REWORK OF SEALING SURFACE ON

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					UPPER BULKHEAD AND FILLINGPORT performed (closeout of NC-1174) NC-1476: 2 stand-offs are detached, repair is open work Final integration of all I/F screws and torque with MA= 25Nm and second torque, final with MA= 31Nm , performed on 14.08.06 Screws LN 65056, 056-08028 charge FA 05/2146, nuts LN 65410-08, charge FA 05/2146 Removed acc. PR-0049 Issue2 23.03.2007 R.K. Preliminary Integration acc.PR-0064 T.B. Removal after Leaktest acc.PR-0049.2 T.B. Preliminary Integration acc.PR-0064 H.G.. Removal for PACS FPU final el. connection acc.PR0049 H.G. Final integration acc. ASED-PR-0064_2
121112 CVV cylinder	15.10.04	PFM, SN01	HP-2-APCO-AB-0043, Issue 1, 19.01.05	y	Integration acc. to HP-2-ASED-PR-0020 /-0021 Report: HP-2-ASED-RP-0145 on 1.2.05: check of helicoils M8x1 on flanges, 5 helicoils on upper flange exchanged HP-2-ASED-SD-0115_RE- FASTENING OF CONNECTORS MOUNTED ON CVV CYLINDER_performed on 28.07.06 For integration and torque of I/F screws, See UB and LB
121112 Dummy receptacles on FT J03 and J04	21.03.05	PFM			FT J03 and J04 not used for wiring, integrated dummies are leak tested
121113 CVV Lower Bulkhead	06.06.07	PFM, SN01	HP-2-APCO-AB-0043, Issue 1, 19.01.05	y	Remated CVV screws preliminary mated: only each 4th screw inserted and torqued with 24Nm Final integration of all I/F screws and torque with MA= 25Nm and second torque, final with MA= 31Nm performed on 14.08.06 Screws LN 65056; 056-08028 ; charge FA 05/2146 Nuts LN 65410-08, charge FA 05/2146 Removed acc. PR-0049 Issue2 23.03.2007 R.K. Final Integration acc. PR-0023 Iss2 T.B.
121114 Radiator on -Z		PFM	HP-2-APCO-AB-0052, issue 2, 28.09.05	y	2 Parts pre-integration on 17.9.05 Integration acc. to HP-2-APCO-MA-0048 Both removed 05.04.2006
121115 Radiator on +Y	07.03.2008	PFM	HP-2-APCO-AB-0052, issue 2, 28.09.05	Y	2 Parts, NC-1508: MLI too short, bolt torque 29 Nm Integration acc. to HP-2-APCO-MA-0048 NC-1851; Upper part removed on 19.12.05 due to interference with HSS strut 5, radiator reworked, new bracket added. Upper part re-installed 10.01.2006, bolt torqued 29 Nm Both removed 31.03.2006;changed the new bracket (black anodizing) 20.02.08 R.H. OW 291 closed; Final Integrated acc. PR-0121 07.03.08 R.Suess
121116 Radiator on -Y	10.03.2008	PFM	HP-2-APCO-AB-0052, issue 2, 28.09.05	y	Lower part removed 16.11.05; reintegrated 15.12.2005 Removed 30.03.2006 Preliminary integrated for MLI integration
121117 IMT Crown	05.08.06	FS	HP-2-ASED-DW-0135		Glued and screwed to PFM Top Plate acc. to DW-0135, same configuration as used on EQM-PLM
121118 Heaters,TC's and PT1000 for TB/TV test on	19.02.08	PFM Instrumentation	HP-2-ASED-PL-0046 Iss.1	n a	NC-1595: Heater burnt during TB/TV test Removed the damaged heaters on LBH acc- PR-0097 and integrated new test heaters on CVV_05_LB;CVV_06_LC-pz and CVV_35_LB

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CVV,					Removed the damaged heaters on UBH acc- PR-0097 and integrated new test heaters on CVV_08_UB;CVV_15_UB 12.02.2008 J.H. Dale Heater on CVV_10_RAD upper -Y glued 19.02.08 U.W.
121121-01 TSS chain pos. 1	23.12.04	PFM, SN 18	HP-2-ECD-AB-0001, Issue 1, 29.07.04	y	Pre-integrated on 23.12.04, adjusted and tensioned on 17.1.05 load cells remounted on 07.08.06 adjusted to 5-6kN;adjustment 26.10.06 to 25 Nm
121121-01 TSS chain pos. 2	03.01.05	PFM, SN 3	"	Y	Pre-integrated on 03.01.05, adjusted and tensioned on 17.1.05 load cells remounted on 07.08.06 adjusted to 5-6kN;adjustment 26.10.06 to 25 Nm
121121-01 TSS chain pos. 3	03.01.05	PFM, SN 7	"	Y	Pre-integrated on 03.01.05, adjusted and tensioned on 17.1.05 load cells remounted on 07.08.06 adjusted to 5-6kN;adjustment 26.10.06 to 25 Nm
121121-01 TSS chain pos. 4	03.01.05	PFM, SN 13	"	Y	Pre-integrated on 03.01.05, adjusted and tensioned on 17.1.05 load cells remounted on 07.08.06 adjusted to 5-6kN;adjustment 26.10.06 to 25 Nm
121121-01 TSS chain pos. 5	03.01.05 19.07.06	PFM, SN 16	"	Y	Pre-integrated on 03.01.05, adjusted and tensioned on 17.1.05, one washer at Th. Shield 3 had to be reworked in order to remove an interference with the shield bracket Thermal bonding jumper integrated, isolation stand-offs for SPIRE JFET harness fixed iaw. ASED-SD-0101. load cells remounted on 07.08.06 adjusted to 5-6kN;adjustment 26.10.06 to 25 Nm
121121-01 TSS chain pos. 6	03.01.05 19.07.06	PFM, SN 4	"	Y	Pre-integrated on 03.01.05, adjusted and tensioned on 17.1.05 Thermal bonding jumper integrated, isolation stand-offs for SPIRE JFET harness fixed iaw. ASED-SD-0101. load cells remounted on 07.08.06 adjusted to 5-6kN;adjustment 26.10.06 to 25 Nm
121121-01 TSS chain pos. 7	03.01.05	PFM, SN 2	"	Y	Pre-integrated on 03.01.05, adjusted and tensioned on 17.1.05 load cells remounted on 07.08.06 adjusted to 5-6kN
121121-01 TSS chain pos. 8	03.01.05	PFM, SN 14	"	Y	Pre-integrated on 03.01.05, adjusted and tensioned on 17.1.05 load cells remounted on 07.08.06 adjusted to 5-6kN;adjustment 26.10.06 to 25 Nm
121121-02 TSS chain pos. 9	04.01.05	PFM, SN 11	"	Y	Pre-integrated on 04.01.05, adjusted and tensioned on 17.1.05 load cells remounted on 07.08.06 adjusted to 5-6kN;adjustment 26.10.06 to 25 Nm
121121-02 TSS chain pos. 10	04.01.05	PFM, SN 9	"	Y	Pre-integrated on 04.01.05, adjusted and tensioned on 17.1.05 load cells remounted on 07.08.06 adjusted to 5-6kN;adjustment 26.10.06 to 25 Nm
121121-02 TSS chain pos. 11	04.01.05	PFM, SN 17	"	Y	Pre-integrated on 04.01.05, adjusted and tensioned on 17.1.05 load cells remounted on 07.08.06 adjusted to 5-6kN;adjustment 26.10.06 to 25 Nm
121121-02 TSS chain pos. 12	04.01.05	PFM, SN 6	"	Y	Pre-integrated on 04.01.05, adjusted and tensioned on 17.1.05 load cells remounted on 07.08.06 adjusted to 5-6kN;adjustment 26.10.06 to 25 Nm
121121-02 TSS chain pos.	04.01.05	PFM, SN 5	"	Y	Pre-integrated on 04.01.05, adjusted and tensioned on 17.1.05

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13					load cells remounted on 07.08.06 adjusted to 5-6kN;adjustment 26.10.06 to 25 Nm
121121-02 TSS chain pos. 14	04.01.05	PFM, SN 12	"	Y	Pre-integrated on 04.01.05, adjusted and tensioned on 17.1.05 A cut was missing in outer MLI blanket. Photos taken, cut made with sharp scissors load cells remounted on 07.08.06 adjusted to 5-6kN;adjustment 26.10.06 to 25 Nm
121121-02 TSS chain pos. 15	04.01.05	PFM, SN 15	"	Y	Pre-integrated on 04.01.05, adjusted and tensioned on 17.1.05 load cells remounted on 07.08.06 adjusted to 5-6kN;adjustment 26.10.06 to 25 Nm
121121-02 TSS chain pos. 16	04.01.05	PFM, SN 8	"	Y	Pre-integrated on 04.01.05, adjusted and tensioned on 17.1.05 load cells remounted on 07.08.06 adjusted to 5-6kN;adjustment 26.10.06 to 25 Nm
121121-04 Strap pre-tensioning devices	22.- 24.09.04	PFM	HP-2-ECD-AB-0001, Issue 1, 29.07.04	y	Leak test after integration was successful
121122-01 Upper SFW	19.10.04 19.07.06	PFM	HP-2-HTSZ-LI-0008 Iss. 2, 23.10.03	y	Lateral struts adjusted and 21 Nm applied on bolt nuts; wire locking on all struts performed ASED-NC-0481, X-ray investigation of all strut fittings performed, all are ok. New Al-angles and Vespel stand-offs glued with EC 2216 on Y-side of frame, SD-0101
121122-02 Lower SFW	05.05.04 27.06.06	FM, SN 01	HP-2-HTSZ-LI-0008 Iss. 2, 23.10.03	y	wire locking on struts performed; New stand-offs and sensors on LSFW acc. to ASED-SD-0102 Harness Brackets Struts SLI on LSFW installed acc to AC 0102
121131 Cryo Cover incl. Top Plate	22.05.07	PFM, SN 01	HP-2-AAE-AB-0002, Issue 2, 07.03.05	y	NC-2316: Rework on cryo cover mirror, mirror polished. Deintegrated and shipped to AAE 02.04.2007 K.R. Final Integrated acc. PR-0091 22.05.2007 K.R.
121132 Cryo Baffle	22.05.07	PFM, SN-01	HP-2-AAE-AB-0003, issue 2, 31.05.05	y	HP-2-AAE-MA-0004 Baffle cover removed for inspection on 7.12.05, re-mounted on 22.12.06 Removed 05.04.2006 HP-2-ASED-SD-0093 Final Integrated acc. PR-0091 22.05.2007 K.R.
121140 Optical Bench Assembly	into CVV on 24.01.05 24.07.06	PFM, SN 003	HP-2-SEN-AB-0002 Issue 2, 16.11.04 additional holes acc. to NC-0678 and HP-2-ASED-ID-0096 OBHCL1 modified iaw. HP-2-ASED-DW-0234-01-0A	y	NC-0644: Several heli-coils were not mounted properly, replaced by ASED NC-0565: Cooling loop interference, rework performed by AIRL NC-0961: OBA labels covered with AL-tape MLI Straylight covers mounted on L 0 -Pod MLI SPIRE cooler pump and evaporator , Stray Light Cover, L 0 -Pod MLI SPIRE Detector , Stray Light Cover, HIFI LO, PACS Cooler Pump and Evaporator, PACS LO, according to HP-2-ASED-PR-0059_as run OBA cooling loop: straylight protection orifices mounted on inlet, add. holes for T-sensors drilled in OBHCL1 iaw. HP-2-ASED-DW-0234-01-0A
121140 L0 Light tightness devices	19.01.05	PFM	HP-2-SEN-AB-0002 Issue 2, 16.11.04 (HP-2-SEN-DW-2200)	y	incl. harness routing, modified acc. to ASED-SD-0101
121140 OBA	24.01.05	PFM	OBA integration status list of 24.01.05	y	shimmed and aligned Tubing fit check: 4 mm offset in X-dir. OBA outlet tube / shield inlet, on 1.2.05 adjusted with 2 mm shims at tripod

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121141 Fixation bars for HIFI harness brackets	04.01.2005	PFM	HP-2-ASED-DW-0080-01-0A, NC-0678	n. a.	4 additional holes drilled into OB plate acc. to HP-2-ASED-ID-0096-01-0A "OB Fixation Bar I/F", four harness bracket nuts mounted with one screw each, see NC-0678 Cut-out Cover 3 removed 11.05.2006
121142 OB instrument shield	27.11.07	PFM	HP-2-SEN-AB-0002 issue 2, 16.11.2004	y	Pre-integration acc. to HP-2-ASED-DW-0140-01-0A NC-0961: OBA labels covered with AL-tape Harness for T211, T212, T213 connected and tested AL-tapes applied on gaps for straylight protection OBS plate and OBS mounted according to HP-2-ASED-PR-0064 on 24.07.06 NC-xxxx: OBS plate reworked, see pics. 1082 & 1083 of 21.7.06 Removal for PACS FPU final el. connection acc.PR0049 H.G. Final integration acc.PR-0064 K.R. Removal acc.PR-0049 Iss.3 20.11.2007 Final integration acc. PR-0064_2 H.G.; R.H.; ASED-NC-3795, OBS cover on HIFI side reworked
121142-01 HIFI Baffle Assy	27.11.07	PFM	HP-2-ASED-DW-0090-01-0A HP-2-ASED-DW-0130-01-0A HP-2-ASED-DW-0131-01-0B	y	De- integrated from PLM 26.04.2006, re-mounted acc. to PR-0064. FPU baffle DW-0130 and OBS baffle DW-0131 are black anodized. Re-integrated during final closure acc. ASED-PR-0064_2, H.G.
121144 Thermal links					Integration of thermal flex links is reported in HP-2-ASED-SD-0004
121144-01 PACS Evaporator, L0 Open Pod	11.6.04 11.07.07	H-0400-E-150	HP-2-AIRL-AB-0002, issue 1, 27.05.2004	y	Integrated by Airl (protective cover installed) Integr. procedure: HP-2-AIRT-PR-0001 Final integrated on PACS acc. PR-0089 by MPE 10.07.07
121144-01 PACS Evaporator flex link	08.05.07 11.07.07	2000_14C101 S/N:1	HP-2-AIRL-AB-0002, issue 1, 27.05.2004	y	integr. by ASED acc. to HP-2-ASED-PR-0026 NC-0807: Thermal I/F improved:CQM removed 19.04.2007 Geiger;NC-3256 Re-Integration acc-PR-0086 T.Bayer 08.05.2007 Final integrated on PACS acc. PR-0089 by MPE 10.07.07
121144-01 SPIRE Evaporator, L0 Open Pod	11.6.04	H-0400-E-149	HP-2-AIRL-AB-0002, issue 1, 27.05.2004	y	Integrated by Airl (protective cover installed) Integr. procedure: HP-2-AIRT-PR-0001
121144-01 PACS L0 cooler evaporator rigid pod	26.11.04 11.07.07	H-0400-E-121	HP-2-AIRL-AB-0004, issue 2, 29.09.2004	y	Final integrated on PACS acc. PR-0089 by MPE 10.07.07
121144-01 PACS L0 cooler evaporator flex link	13.01.05 11.07.07	H-0400-E-110	HP-2-AIRL-AB-0004, issue 2, 29.09.2004	y	integr. by ASED acc. to HP-2-ASED-PR-0026 Final integrated on PACS acc. PR-0089 by MPE 10.07.07
121144-01 PACS L0 cooler pump rigid pod	26.11.04 11.07.07	H-0400-E-105	HP-2-AIRL-AB-0004, issue 2, 29.09.2004	y	Final integrated on PACS acc. PR-0089 by MPE 10.07.07
121144-01 PACS L0 cooler pump flex link	08.05.07 11.07.07	2000_14C102 S/N1	HP-2-AIRL-AB-0004, issue 2, 29.09.2004	y	integr. by ASED acc. to HP-2-ASED-PR-0026 NC-0807: Thermal I/F improved CQM removed 19.04.2007 Geiger;NC-3256 Re-Integration acc-PR-0086 T.Bayer 08.05.2007 Final integrated on PACS acc. PR-0089 by MPE 10.07.07
121144-01 PACS L0 red detector rigid pod	11.07.07	H-0400-E-108	HP-2-AIRL-AB-0004, issue 2, 29.09.2004	y	Final integrated on PACS acc. PR-0089 by MPE 10.07.07

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121144-01 PACS L0 red detector flex link	08.05.07 11.07.07	520_5119_2A S/N.III	HP-2-AIRL-AB-0004, issue 2, 29.09.2004	y	integr. by ASED acc. to HP-2-ASED-PR-0026, NC-0434; NC-0807: Thermal I/F improved CQM removed 19.04.2007 Geiger;NC-3256 Re-Integration acc-PR-0086 T.Bayer 08.05.2007 Final integrated on PACS acc. PR-0089 by MPE 10.07.07
121144-01 PACS L0 blue detector rigid pod	20.01.05 11.07.07	H-0400-E-122	HP-2-AIRL-AB-0004, issue 2, 29.09.2004	y	Final integrated on PACS acc. PR-0089 by MPE 10.07.07
121144-01 PACS L0 blue detector flex link	07.05.07 11.07.07	520_5118_2A S/N:II	HP-2-AIRL-AB-0004, issue 2, 29.09.2004	y	integr. by ASED acc. to HP-2-ASED-PR-0026; fixed to MTD on 08.02.05 NC-0807: Thermal I/F improved CQM removed 19.04.2007 Geiger;NC-3256 Re-Integration acc-PR-0086 T.Bayer 07.05.2007 Final integrated on PACS acc. PR-0089 by MPE 10.07.07
121144-01 SPIRE L0 cooler evaporator rigid pod	06.12.04	H-0400-E-117	HP-2-AIRL-AB-0004, issue 2, 29.09.2004	y	NC-0571: defect heli-coils replaced by ASED NC-2301: Discolouration of gold plating
121144-01 SPIRE L0 cooler pump rigid pod	06.12.04	H-0400-E-117	HP-2-AIRL-AB-0004, issue 2, 29.09.2004	y	NC-0571: defect heli-coils replaced by ASED NC-2301: Discolouration of gold plating
121144-01 SPIRE L0 SM detector rigid pod	26.11.04	H-0400-E-106	HP-2-AIRL-AB-0004, issue 2, 29.09.2004	y	
121144-01 HIFI L0 rigid pod	06.12.04	H-0400-E-107	HP-2-AIRL-AB-0004, issue 2, 29.09.2004	y	NC-0571: defect helicoils replaced by ASED
121144-01 HIFI L0 flex link	24.07.2007	H-0400-E-114 STM	HP-2-AIRL-AB-0004, issue 2, 29.09.2004	y	NC-0434; SRON-NC-0653: Modified by removing 10 Cu-layers, perf. on 5.4.05 Removed on 12.07.06 H.G.; N/A for STM2 test Final integration H.G. acc. HP-2-ASED-PR-0090_1
121144-02 L1 PACS Photometer Thermal Link	10.02.05 11.07.07	PFM	HP-2-AIRL-AB-0003 issue 1, 30.07.2004		Torque on M4: 2.1 Nm + RT;Torqued with 3,25 Nm Final integrated on PACS acc. PR-0089 by MPE & H.G: 11.07.07
121144-02 L1 PACS Collimator Thermal Link	08.02.05 11.07.07	PFM	HP-2-AIRL-AB-0003 issue 1, 30.07.2004		Torque on M4: 2.1 Nm + RT ;Torqued with 3,25 Nm Final integrated on PACS acc. PR-0089 by MPE & H.G: 11.07.07
121144-02 L1 PACS Spectrometer Thermal Link	08.02.05 11.07.07	PFM	HP-2-AIRL-AB-0003 issue 1, 30.07.2004		Torque on M4: 2.1 Nm + RT;Torqued with 3,25 Nm Final integrated on PACS acc. PR-0089 by MPE & H.G: 11.07.07
121144-02 L1 SPIRE 1 Thermal Link	29.05.06	PFM	HP-2-AIRL-AB-0003 issue 1, 30.07.2004		Procedure Variation on torque: M4: 2.1 Nm + RT; M8: 10.5 Nm acc. to SPIRE ICD Remounted acc HP-2-ASED-PR-0061_1
121144-02 L1 SPIRE 2 Thermal Link	29.05.06	PFM	HP-2-AIRL-AB-0003 issue 1, 30.07.2004		Remounted acc HP-2-ASED-PR-0061_1 Final integration H.G. acc. HP-2-ASED-PR-0090_1
121144-02 L1 HIFI Thermal flex Link	24.07.2007	PFM	HP-2-AIRL-AB-0003 issue 1, 30.07.2004		Torque on M4: 2.1 Nm + RT Removed on 12.07.06; N/A for STM2 test
121144-03 L3 JFET 6 (P) Thermal Link	29.05.06	PFM	HP-2-AIRL-AB-0003 issue 1, 30.07.2004		Remounted acc. HP-2-ASED-PR-0061_1
121144-03 L3 JFET 2 (S) Thermal Link	29.05.06	PFM	HP-2-AIRL-AB-0003 issue 1, 30.07.2004		Remounted acc. HP-2-ASED-PR-0061_1

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121210 HTT	25.5.04	PFM, SN01	HP-2-AIR-AB-0001 Iss. 2, 22.7.04	y	
121221 PPS	10.6.04	PFM, SN01	HP-2-LIND-AB-3511 Iss. 4, 19.1.04	y	NCR-0256 Helicoflex HN 100 used instead of HN 200
121222 DLCM 1	25.5..04	PFM, SN01	HP-2-LIND-AB-4511 Iss. 4, 19.1.04	y	-y position, Ty-rap fixed with AL-tape, NCR-0256 Helicoflex HN 100 used instead of HN 200; SLI covered acc. to ASED-PR-0059
121222 DLCM 2	25.5.04	FM, SN02	HP-2-LIND-AB-4512 Iss. 4, 19.1.04	y	+y position, Ty-rap fixed with AL-tape, NCR-0256 Helicoflex HN 100 used instead of HN 200; SLI covered acc. to ASED-PR-0059
121223 Cryo Components					General: all VCR initially torqued 45°, after detecting leak at V701/702 25° added to each valve VCR connection around lower SFW
121223-01 L101	25.5.04	PFM, SN01	HP-2-LIND-AB-5611 Iss. 3, 28.11.03	y	+y position NCR-0256 Helicoflex HN 100 used instead of HN 200 See NCR HP-2-ASED-NC-121223-ASED-NC-2339 pin bended Protection cover removed prior to cryostat closure
121223-01 L102	03.05.07	FM, SN02	HP-2-LIND-AB-5612 Iss. 3, 28.11.03	y	+y / -z position NCR-0256 Helicoflex HN 100 used instead of HN 200 Protection cover removed prior to cryostat closure NC-2659: LLP L 102 Zero reading on SCOE STM2 Ex-changed the L102 acc. PR-0088 03.05.07 M.L.
121223-02 L 701	03.05.07	PFM, SN 03	HP-2-LIND-AB-5513 Iss. 3, 28.11.03	y	Protective cover removed before LBTS1 mounting Protection cover removed prior to cryostat closure NC-2590: Ex-changed the L701 acc. PR-0088 03.05.07 M.L. (leak)
121223-02 L 702	29.03.04	FM, SN 02	HP-2-LIND-AB-5512 Iss. 3, 28.11.03	y	Protective cover removed before LBTS1 mounting Protection cover removed prior to cryostat closure
121224-02 H 701	30.07.04	FM 03	HP-2-ASED-DP-0035 Iss. 1, 17.03.04	y	incl. connector brackets
121224-02 H702	30.07.04	FM 04	HP-2-ASED-DP-0035 Iss. 1, 17.03.04	y	incl. connector brackets
121224-02 H103	3.8.04	FM01	HP-2-ASED-DP-0035 Iss. 1, 17.03.04	y	SLI covered acc. to ASED-PR-0059
121224-02 H104	3.8.04	FM02	HP-2-ASED-DP-0035 Iss. 1, 17.03.04	y	SLI covered acc. to ASED-PR-0059
121224-03 Ventline Heater H501	13.05.05	PFM, SN 1	HP-2-LIND-AB-7511, Issue 2, 17.03.05	y	Part of harness integrated by ASED acc. to CCH-PFM Wiring list NC-2305: Power cables of H501 partially bent.
121225 RD 724	29.03.04	FM2, SN 311148/4	HP-2-ASED-DP-0042 Iss. 1, 18.03.04	y	NC-0212: Mounted with HN 100 seal instead of HN 200; HP-2-ASED-DP-0042 includes Rembe EIDP HP-2-REMB-DP-0081(1) protective cover removed, RD housing SLI covered acc. to ASED-PR-0059
121225 RD124	24.11.04	FM1, SN 311148/9	HP-2-ASED-DP-0042 Iss. 1, 18.03.04	y	NC-0212: Mounted with HN 100 seal instead of HN 200 HP-2-ASED-DP-0042 includes Rembe EIDP HP-2-REMB-DP-0081(1) SLI covered acc. to ASED-PR-0059, protective cover removed
121226-01 SV 723	24.11.04	FS2, SN IA- 81824/1/4	HP-2-ASED-DP-0040 Iss. 1, 18.03.04	y	with VCR coupling SLI covered acc. to ASED-PR-0059
121226-01 SV 123	26.01.05	FM1, SN IA- 81824/1/1	HP-2-ASED-DP-0040 Iss. 1, 18.03.04	y	with flanges, helicoflex seals installed, final torque on flange bolts applied fits without the shims from the dummy!
121226-02 SV 521	16.09.05	SN 02	Swagelock SS-12C- VCR-WD-5 HP-2-ASED-TR-0097,	y	Qualified acc. SD-0136 see NC-2452

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			issue 1, 26.09.05		
121226-03 SV 921		SN 02	HP-2-ASED-DP-0039, issue -, 16.03.04	Y	Flange 922-3, +plate 922-2 mounted on -Y M6 x 35 Fixationscrews torqued with 7 Nm acc. to Stoehr drwing 08-616 issue 05.05.03 Vacuum pump mounted on SV921 place; 07.08.06 SV921 should be tested after Mech.Test AI: Hans Huber SV921 is tested acc.SD-0136 see NC 2452 SV921 integrated acc. HP-2-STOE-ID-0001 H.Huber 19.01.2007 T=7 Nm; Removed for Evacuation TB/TV test;J.Huber 23.01.2007; re-integrated acc. HP-2-STOE-ID-0001 H.Huber 23.01.2007; Removal after abort 27.01.2007 Huber; Vacuum pump mounted Installed for restart TB/TV test 04.02.2007 A.Runge; Removed after TB/TV test acc.SD-0151 28.02.2007 A.Runge; re-installed for Transport acc. PR-0036 05.03.2007 Huber J. Removed acc PR-0045 Issue2 R.K. 23.03.07 Vacuum Pump inst. 11.01.2008 at Estec
121226-03 SV 922	07.08.06	SN 03	HP-2-ASED-DP-0039, issue -, 16.03.04	Y	Flange 922-2, +plate 922-4 mounted on +Y M6 x 35 Fixationscrews torqued with 7 Nm acc. to Stoehr drwing 08-616 issue 05.05.03 SV 922 should be tested after Mech.Test AI: Hans Huber SV 922 is tested acc. SD-0136 see NC 2452
121227 Adsorbers	23.05.07 14.08.07	- X-FM SN ?? +X-FM SN 05- SN 21	HP-2-ASED-DP-0064	y	Not mounted since not needed on STM level Non used I/Fs covered with SLI blankets and tape, ref. HP-2-ASED-PR-0059-1_as_run Final integrated of 3 Adsorbers at lower Part acc. PR- 0094 Final integrated of 17 Adsorbers at upper part acc.PR-0094 14.08.2007
121228-01 External Filling Port	10.08.06	PFM	HP-2-LIND-AB-6611, iss. 3, 13.12.04	y	External Filling Port Re-integrated on 10.08.06 Viton ring 169,2x 5,7 STM taken, MA 7,5 Nm Pressure plate S/N 02 PFM integrated 10.08.06 torqued with 10Nm Helicoflex seal HNV 200 batch 138512/ 03; 29.09.2005 used
121228-02 Internal Filling Port with OD 101		PFM OD; SN 2	HP-2-LIND-AB-6511 Iss. 4, 11.02.05	y	LIND-NC-0546: Weak design, stiffener bonded on tube weld on 11.02.05 ASED-NC-0905: I/F from Y201 transferline to the ext. FP did not fit, repaired, closed NC-1174: I/F sealing surface reworked according to HP-2-ASED-SD-0116_REWORK OF SEALING SURFACE ON UPPER BULKHEAD AND FILLINGPORT Helicoflex sealing used HN200, Helicoflex 122.3 x 132.1 x 4.9 Retorqued finally to MA: 24,3Nm OD 101 integrated 24.10.06, OD removed according DW at ESTEC 16.11.2006
121228-02 Thermal Strap (filling port to TS1)	19.05.05	PFM	HP-2-AIRT-ID-1084-00- A1, 05.01.05		Improved according to HP-2-ASED-PR-0059
121231 V 105	23.11.04	FM1, SN 3R	HP-2-ASIP-AB-0004 Iss. 3, 29.09.04	y	HP-2-ASIP-RD-0001/-0002/-0003/-0004, HP-2-ASED- RD-0024 SLI covered acc. to ASED-PR-0059
121231 V 701	23.11.04	FM3, SN 5R	HP-2-ASIP-AB-0006 Iss. 3, 11.10.04	y	HP-2-ASIP-RD-0001/-0002/-0003/-0004, HP-2-ASED- RD-0024 SLI covered acc. to ASED-PR-0059


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121231 V 702	23.11.04	FM4, SN 6R	HP-2-ASIP-AB-0007 Iss. 3, 21.10.04	y	HP-2-ASIP-RD-0001/-0002/-0003/-0004, HP-2-ASED-RD-0024 NC-0812: Incorrect pin allocation for heater foil, use as is, change on EGSE harness SLI covered acc. to ASED-PR-0059
121231 V102	15.04.05	FM 5, SN07	HP-2-ASIP-AB-0008 Iss. 3, 02.11.04	y	NC-0530: Pull in current scatter high - use as is. NC-0011/NC-0017: Change from Cajon- to Hope glands EI- I/F Connector covered with kapton acc. To NCR 2437. MLI cover (BBP 1413, 1641 SBP 400-08) repaired iaw. NC-1609 and applied, stainless steel bonding leads mounted; ASED-PR-0060
121231 V103	15.04.05	FM 8, SN10	HP-2-ASIP-AB-0012 Iss. 2, 04.03.05	y	NC-0011/NC-0017: Change from Cajon- to Hope glands EI- I/F Connector covered with kapton acc. To NCR 2437. MLI cover (BBP 1408, 1577 SBP 400-10) repaired iaw. NC-1609 and applied, stainless steel bonding leads mounted;ASED-PR-0060
121231 V104	24.02.2005	FM 7, SN09	HP-2-ASIP-AB-0010 Iss. 3, 28.01.05	y	NC-0011/NC-0017: Change from Cajon- to Hope glands EI- I/F Connector covered with kapton acc. To NCR 2437. MLI cover (BBP 1482, 1470 SBP 400-09) repaired iaw. NC-1609 and applied, stainless steel bonding leads mounted; ASED-PR-0060
121231 V106	15.04.05	FM 9, SN11	HP-2-ASIP-AB-0013 Iss. 2, 17.03.05	y	NC-0011/NC-0017: Change from Cajon- to Hope glands EI- I/F Connector covered with kapton acc. To NCR 2437. MLI cover (BBP 1510, 1488 SBP 400-01) repaired iaw. NC-1609 and applied, stainless steel bonding leads mounted; ASED-PR-0060
121232 Liquid Helium Valve V 501	22.08.05	FM 10 S/N 12	HP-2-ASIP-AB-0014, issue 2, 15.06.05	y	Valve 501 should be tested after Mech.Test AI: Hans Huber Valve 501 is tested see NC 2452
121232 Liquid Helium Valve V 503	22.08.05	FM 11 S/N 13	HP-2-ASIP-AB-0015, issue 2, 15.06.05	y	
121232 Liquid Helium Valve V 504	22.08.05	FM 12 S/N 14	HP-2-ASIP-AB-0016, issue 2, 07.07.05	y	
121232 Liquid Helium Valve V 505	22.08.05	FM 13 S/N 15	HP-2-ASIP-AB-0017, issue 2, 07.07.05	y	
121241-01 HTT HST	see below & 19.06.06	PFM, SN01	HP-2-AIRT-AB-0003 Iss. 2, 22.07.04	y	Pipe supports improved wrt thermal behavior in lower HTT area according to HP-2-ASED-SD-0099_Thermal_Decoupling_of_Tubing_Suppor, see as run
121241-01 Line 1 of HOT HST	y		HP-2-AIRT-AB-0001 (2)	y	mounted with 3 brackets on HTT
121241-01 Line 1	y		HP-2-AIRT-AB-0003 (2)	y	
121241-01 Support bkt 16	y		HP-2-AIRT-AB-0003 (2)	y	
121241-01 Line 2	11.6.04		HP-2-AIRT-AB-0003 (2)	y	


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121241-01 Support bkt 15	11.6.04 & 29.06.06		HP-2-AIRT-AB-0003 (2)	y	Pipe support improved wrt thermal behavior in lower HTT area according to HP-2-ASED-SD-0099_Thermal_Decoupling_of_Tubing_Support see as run
121241-01 Support bkt 17	11.6.04		HP-2-AIRT-AB-0003 (2)	y	
121241-01 Support bkt 18	11.6.04 & 29.06.06		HP-2-AIRT-AB-0003 (2)	y	Pipe support improved wrt thermal behavior in lower HTT area according to HP-2-ASED-SD-0099_Thermal_Decoupling_of_Tubing_Support see as run
121241-01 Line 3	11.6.04		HP-2-AIRT-AB-0003 (2)	y	NCR-279, holes elongated to fit to SV123 (angular displacement at I/F flange) NCR-273, tube re-bent to fit to V104
121241-01 Support bkt 6	11.6.04		HP-2-AIRT-AB-0003 (2)	y	
121241-01 Support bkt 19	11.6.04		HP-2-AIRT-AB-0003 (2)	y	
121241-01 Line 4	11.6.04		HP-2-AIRT-AB-0003 (2)	y	
121241-01 Support bkt 1	8.6.04 & 19.06.06		HP-2-AIRT-AB-0003 (2)	y	Pipe support improved wrt thermal behavior in lower HTT area according to HP-2-ASED-SD-0099_Thermal_Decoupling_of_Tubing_Support see as run, SLI covered acc. to ASED-PR-0059
121241-01 Support bkt 9	8.6.04 & 19.06.06		HP-2-AIRT-AB-0003 (2)	y	Pipe support improved wrt thermal behavior in lower HTT area according to HP-2-ASED-SD-0099_Thermal_Decoupling_of_Tubing_Support see as run SLI covered acc. to ASED-PR-0059
121241-01 Support bkt 27	8.6.04 & 19.06.06		HP-2-AIRT-AB-0003 (2)	y	Pipe support improved wrt thermal behavior in lower HTT area according to HP-2-ASED-SD-0099_Thermal_Decoupling_of_Tubing_Support see as run SLI covered acc. to ASED-PR-0059
121241-01 Support bkt 11,12,13	8.6.04		HP-2-AIRT-AB-0003 (2)	y	
121241-01 Support bkt 14	8.6.04		HP-2-AIRT-AB-0003 (2)	y	
121241-01 Line 5	19.01.05		HP-2-AIRT-AB-0005 (2)	y	to filling port
121241-01 Support bkt 5 & 35	19.01.05 & 19.06.06		HP-2-AIRT-AB-0005 (2)	y	Pipe supports 5 & 35 improved wrt thermal behavior in lower HTT area according to HP-2-ASED-SD-0099_Thermal_Decoupling_of_Tubing_Support see as run
121241-01 Line 6	11.6.04		HP-2-AIRT-AB-0003 (2)	y	NCR-273, I/F problems corrected by re-bending
121241-01 Support bkt 31	8.6.04		HP-2-AIRT-AB-0003 (2)	y	
121241-01 Support bkt 22,23,24	8.6.04		HP-2-AIRT-AB-0003 (2)	y	
121241-01 Support bkt 25,26	8.6.04 & 19.06.06		HP-2-AIRT-AB-0003 (2)	y	Pipe supports 25 & 26 improved wrt thermal behavior in lower HTT area according to HP-2-ASED-SD-0099_Thermal_Decoupling_of_Tubing_Support see as run Supports 25 & 26 SLI covered acc. to ASED-PR-0059
121241-01 Line 7	11.6.04		HP-2-AIRT-AB-0003 (2)	y	
121241-01 Support bkt 3	11.6.04		HP-2-AIRT-AB-0003 (2)	y	

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121241-01 Line 8	11.6.04		HP-2-AIRT-AB-0003 (2)	y	
121241-01 Support bkt 2	11.6.04		HP-2-AIRT-AB-0003 (2)	y	
121241-01 Support bkt 4	11.6.04		HP-2-AIRT-AB-0003 (2)	y	
121241-01 Line 9	19.01.05		HP-2-AIRT-AB-0005 (2)	y	SV 123 to FP wire locking done
121241-01 Support bkt 20	y		HP-2-AIRT-AB-0005 (2)	y	
121241-01 Support bkt 34	y & 13.07.06		HP-2-AIRT-AB-0005 (2)	y	Pipe support improved wrt thermal behavior in lower HTT area according to HP-2-ASED-SD-0099_Thermal_Decoupling_of_Tubing_Support see as run
121241-01 Support bkt 36	y		HP-2-AIRT-AB-0005 (2)	y	
121241-02 HOT HST	on HTT		HP-2-AIRT-AB-0001 Iss. 2, 22.06.04	y	HOT HST "red tags": All removed before LBTS1 mounting <ul style="list-style-type: none"> Flushing system Manometer Tooling bracket / support, pressure sensor line Tooling cap pressure sensor line
121241-02 Line 1	on HTT		HP-2-AIRT-AB-0001 (2)	y	
121241-02 HOT HST Bkt 7	15.12.04 & 19.06.06		HP-2-AIRT-AB-0001 (2)		mounted on lower SFW Pipe support improved wrt thermal behavior in lower HTT area according to HP-2-ASED-SD-0099_Thermal_Decoupling_of_Tubing_Support see as run
121241-02 HOT HST Bkt 10	on HTT		HP-2-AIRT-AB-0001 (2)		
121241-02 HOT HST Bkt 11	on HTT		HP-2-AIRT-AB-0001 (2)		
121241-02 HOT HST Bkt 12	on HTT		HP-2-AIRT-AB-0001 (2)		
121241-02 Line 2	6.5.04		HP-2-AIRT-AB-0001 (2)	y	wire locking line 2 to line 3 done NC-0817: wrong routing, clash with TS, reworked to fit by bending - closed
121241-02 HOT HST Bkt 5	6.5.04		HP-2-AIRT-AB-0001 (2)		
121241-02 HOT HST Bkt 6	6.5.04		HP-2-AIRT-AB-0001 (2)		
121241-02 Line 3	6.5.04		HP-2-AIRT-AB-0001 (2)	y	30.6.06: Thermal connection of Line 3 to LSFV improved by mounting a Cu-wire between tube and frame.
121241-02 HOT HST Bkt 2	6.5.04		HP-2-AIRT-AB-0001 (2)		
121241-02 HOT HST Bkt 3	6.5.04		HP-2-AIRT-AB-0001 (2)		
121241-02 Line 4	6.5.04		HP-2-AIRT-AB-0001 (2)	y	wire locking line 4 to line 5 done
121241-02 HOT HST Bkt 1	6.5.04		HP-2-AIRT-AB-0001 (2)		
121241-02 Line 5	6.5.04 14.07.06		HP-2-AIRT-AB-0001 (2)	y	Pipe supports improved wrt thermal behavior in lower HTT area according to HP-2-ASED-SD-0099_Thermal_Decoupling_of_Tubing_Support see as run
121241-02 HOT HST Bkt 9	6.5.04		HP-2-AIRT-AB-0001 (2)		

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121242-01 External Tubing	08.02.2008	PFM	HP-2-AIRT-AB-0006, issue 2, 02.08.05	y	HP-2-ASED-DW-0180-01, issue A, 19.07.05 Hand rails on Pos. V506 is missing & Part 380 missing(Modification of A-frame); all screws are torqued External Tubing removed 30.04.06 Final Integration of external tubing 22.11.2006 acc. SD 0063 Removed acc. SD-0063 Iss.2 22.03.2007 Integrated at Estec acc. PR-0112 J.H.
121242-01 External Tubing Brackets	08.02.2008	PFM	HP-2-ASED-DW-0158-01, issue A, 25.05.05	y	Removed acc. SD-0063 Iss.2 22.03.2007 Integrated at Estec acc. PR-0112 J.H.
121242-04 Nozzle support structure (A-frame)	08.02.2009	PFM	HP-2-ASED-DW-0158-01, issue A, 25.05.05	y	NC-1451: Modified for Radiator Mounting See OW124/closed; removed 31.08.05 Integration on 14.09.2005; Removed 15.09.05 -A-Frame blocked the Harness Integration, finally integrated 17.09.05; removed 05.04.06 HP-2-ASED-SD-0063 Final integration 21.11.2006 acc. SD 0063 Removed acc. SD-0063 Iss.2 22.03.2007 Integrated at Estec acc. PR-0112 J.H.
121242-05 Nozzles	06.02.08	STM 2 Large S/N1 FM Small S/N 1-2	HP-2-AIRT-AB-0006, issue 2, 02.08.05	Y	Acc. HP-2-ASED-DW-0159-01-0B & HP-2-ASED-DW-0180-04-0A NC-1553: Diameter of big nozzle enlarged to 3.3 mm Remove of STM nozzles and integration of FM nozzles acc. SD 0063 ; 21.11.06, removed 3 Nozzles and 2 distance rings on +Y / -Y side. Exchange sealing ring -> Helicoflex reintegration of Nozzles acc. SD-0063 03.01.07 Removed the small nozzles acc.SD0063 J.H. 24.10.2007SN1=T505;SN2=T506 Re-Integration of small nozzles at A-frame acc.SD0219 J.H. 11.12.2007 Removed the small nozzles acc. SD 0219 13.12.2007 Exchange sealing ring-> Helicoflex reintegration acc. PR-0112 Small Nozzles re-integrated acc. PR-0112 J.H. 06.02.2008 at Estec
121250 HOT	05.05.04	PFM 02	HP-2-AIR-AB-0002 Iss. 2, 01.07.04 except: new Fix. pads HP-2-ASED-DW-0200-01, A	y	Including 4 adjusted shim pads (FM1 to FM4) between each pad and the lower SFW (ref:HP-2-AIR-DW-2141), shim thickness see HP-2-ASED-PR-0015, para 5.1.12.3* 09.06.05: HOT fixation pads replaced by new ones made from stainless steel, see HP-2-ASED-SD-0098_as_run. Blade thickness 1,21- 1,22mm, old shims from STM campaign used
121263 VG 901 / 902	08.06.05 03.05.07	F-No. 387 / 388 F-No. 394	HP-2-ASED-DP-0036 /1 (Balzers No. BGG 18753)	y	VG 901 see NC-2574: VG 901 not functioning STM2 CVV; Exchange of VG901 (SN387) see NC-2574 03.05.2007 M.L.
121264 Ventline Test Valve V 506	09/2005	SN 02	Swagelock SS-4BG-VCR-HC-TUV HP-2-ASED-TR-0098, issue 1, 23.09.05	y	Valve 506 should be tested after Mech.Test AI: Hans Huber Valve 506 is tested acc. SD.0136 see NC 2452
121311 Lower bulkhead thermal shield 1	25.05.2007	PFM 01	HP-2-AIRS-AB-0003, Issue 1, 17.12.04	Y	Closure of MLI with Cyl. TS on 13.04.05, harness for T421 & T422 connected and tested De-mating 10.05.2006; Re-installed acc.PR-0023 on 03.07.06 Deintegrated 23.03.2007 K.R Final integrated acc.PR-0023 H.G.
121312 Lower bulkhead thermal shield 2	30.05.2007	PFM 01	HP-2-AIRS-AB-0003, Issue 1, 17.12.04	Y	Closure of MLI with Cyl. TS on 20.04.05, harness for T441 & T442 connected and tested NC-0649: I/F holes for T-sensor missing, reworked by ASED, closed.

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					De-mating 10.05.2006; re-installed acc.PR-0023 on 04.07.06 NC-2409: Teflon tube bracket reworked to provide more clearance to TS3 Deintegrated 23.03.2007 K.R Final integrated acc.PR-0023 H.G.
121313 Lower bulkhead thermal shield 3	01.06.07	PFM 01	HP-2-AIRS-AB-0003, Issue 1, 17.12.04	Y	Closure of MLI with Cyl. TS ongoing, harness for T461 & T462 connected and tested De-mating 10.05.2006 Re-installed acc.PR-0023 on 06.07.06 Deintegrated 24.03.2007 K.R Final integrated acc.PR-0023 H.G.
121320 Cyl. Thermal Shields	20.12.04	PFM	HP-2-AIRS-AB-0002, Issue 2, 13.12.04	y	Positioned on Rotary Table around Tanks, supported on AI stands Sensors incl. harness were mounted at AIRS before MLI integration NC-2351: Delamination of NI-coating on cyl. TS1 at TSS 07 I/F, covered with S-425 Al-tape.
121331 Upper bulkhead thermal shield 1	29.11.07	PFM 01	HP-2-AIRS-AB-0004, Issue 2, 24.02.05	y	Harness for T423, T424 & A421, A422 connected and tested NC-1047: Enlarge cut-out at filling port, reworked, closed NC-2448: Cut-outs at TSS chains 5, 6, 7 enlarged due to new SPIRE harness routing Deintegrated 24.03.2007 K.R Final integrated acc.PR-0064 Iss1 22.10.07 Removal acc. PR-0049 Iss.3 14.11.2007 Finally integrated acc. PR-0064_2, harness connected and tested acc. ASSED-SD-0190
121331-01 TS1 LOU Baffle	29.11.07	PFM	HP-2-ASED-DW-0125-01-0A		Baffle sheets black anodized acc. to HP-2-ASED-DW-0124-01-0A Modified LOU baffle mounted to TS1 according to HP-2-ASED-SD-0112 Removed acc. PR-0049 T.B. 03.04.07 Final integrated acc.PR-0064 Iss1 22.10.07 Removal acc. PR-0049 Iss.3 14.11.2007 Finally integrated acc. PR-0064_2
121332 Upper bulkhead thermal shield 2	30.11.07	PFM 01	HP-2-AIRS-AB-0004, Issue 2, 24.02.05	y	24.05.2005: Closure of MLI with Cyl. TS, Harness for T443, T444 connected and tested NC-1043: Cut-out reworked; NC-1098: Broken stand off repaired. Re- integrated; NC-2448: Cut-outs at TSS chains enlarged Deintegrated 25.03.2007 K.R Final integrated acc.PR-0064 Iss1 23.10.07 Removal acc. PR-0049 Iss.3 15.11.2007 Finally integrated acc. PR-0064_2, harness connected and tested acc. ASSED-SD-0190 ASED-NC-3807: Broken stand-off
121332 Entrance Baffle	30.11.07	PFM	HP-2-AIRS-AB-0004, Issue 2, 24.02.05	y	Re- integrated Removed acc. PR-0049 T.B. 03.04.07 Final integrated acc.PR-0064 Iss1 23.10.07 Removal acc.PR-0049 Iss.3 15.11.2007 Finally integrated with TS 2 acc. PR-0064_2
121332 LOU Baffle	04.12.07	PFM	HP-2-AIRS-AB-0004, Issue 2, 24.02.05	y	Re- integrated with new HIFI stray light baffle Removed acc. PR-0049 T.B. 03.04.07 Final integrated acc.PR-0064 Iss1 23.10.07 Removal acc.PR-0049 Iss.3 15.11.2007 Finally integrated acc. PR-0064_2
121332 LOU Window Plate	04.12.07	PFM			Re- integrated acc. to HP-2-ASED-TP-0064 Removed acc. PR-0049 T.B. 03.04.07 Final integrated acc.PR-0064 Iss1 23.10.07 Removal acc.PR-0049 Iss.3 15.11.2007

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121333 Upper bulkhead thermal shield3	04.12.07	PFM 01	HP-2-AIRS-AB-0004, Issue 2, 24.02.05	Y	02.06.2005: Closure of MLI with Cyl. TS, Harness for T463, T464 connected and tested NC-1044: Cut-out reworked Re-integrated; NC-2448: Cut-outs at TSS chains enlarged Deintegrated 26.03.2007 K.R Final integrated acc.PR-0064 Iss1 05.11.2007 Removal acc.PR-0049 Iss.3 15.11.2007 Finally integrated acc. PR-0064_2, harness connected and tested acc. ASED-SD-0190
121341 MLI on lower bulkhead thermal shields	01.06.07 By AAEM	PFM 01	HP-2-AAEM-LI-0024, Issue 1, 11.08.04	Y	Stand offs inside all 3 LB shields covered with AL tape (close out of open work item) NC-0946: Small damages on MLI repaired MLI at TSS chain feed throughs closed acc. to NC-0950 Partly opened for TS De-Mating 11.05.2006, finally closed 10.07.06 Partly opened for TS De-Mating 26.03.07 AAEM Finally closed acc.HP-2-AAEM-PR-0003 J.H.
121342 MLI on cyl. th. shields	by AAEM 11/04	PFM	HP-2-AAEM-LI-0024, Issue 1, 11.08.04	y	MLI was integrated on Cy. Shields by AAEM at AIRS before shields delivery NC-0483: Cut-outs on MLI templates do not fit to cyl. TS, reworked, closed.
121343 MLI on upper bulkheads thermal shields	01.06.2005 by AAEM 06.07.06 05.11.2007 by AAEM 05.12.07 by AAEM	PFM 01	HP-2-AAEM-LI-0024, Issue 1, 11.08.04	Y	Stand offs inside UB shield 1 covered with AL tape, 20.4. (close out of open work item) Partly removed for De-Mating of TS; NC-2295: Damages found on MLI - closed. New final installation 06.07.06 by AAEM see PR-0023; see IR42 Cu bonding leads replaced by steel leads acc. to ASED-PR-0060 NC-2459: MLI repaired with Mylar-VDA tapes, additional SLI patches on TS1 MLI. Partly opened for TS De-Mating 26.03.07 AAEM 1. Final closure acc.HP-2-AAEM-PR-0003 J.H. 05.11.2007 Partly opened for TS De-Mating 16.11.2007 AAEM, Finally closed acc.HP-2-AAEM-PR-0003 J.H. 05.12.2007 ASED-NC-3789: MLI degraded
121343-02 LOU Baffle MLI		PFM	HP-2-AAEM-LI-0024, Issue 1, 11.08.04	y	NC-1162: LOU Baffle MLI bonding leads not connected for STM Modified and re-integrated and HP-2-ASED-PR-0059_1_AS_RUN See also AAEM-PR-0003 as run
121345 HTT MLI	30.09.- 08.10.04	PFM	HP-2-AAEM-LI-0024 Iss. 1.0, 11.08.04 & HP-2-ASED-PR-0059_1_AS_RUN	y	IRR: HP-2-ASED-MN-0770; Procedure: HP-2-AAEM-PR-0003 (1) See HP-2-ASED-PR-0059_1_AS_RUN: modification performed in order to close open areas and mount SLI patches over Accelerometer, heater, DLCM 1 and 2, H103, H104, not needed interface flanges (Adsorber I/F)
121345 MLI grounding wires	y	PFM	HP-2-AAEM-LI-0024 Iss. 1.0, 11.08.04		See HP-2-ASED-PR-0059_1_AS_RUN
121345-01 LO pods MLI	LB 19.07.06 UB 28.07.06	PFM	HP-2-ASED-DW-0212/213/...225/226-01-0A		LO pods SLI covered acc. to HP-2-ASED-PR-0059_1_AS_RUN
121345-02 SV 123 MLI cap	27.07.06	PFM	HP-2-ASED-DW-0204-01-0A		SLI covered acc. to HP-2-ASED-PR-0059_1_AS_RUN
121345-03 PPS MLI cap	27.07.06	PFM	HP-2-ASED-DW-0205-01-0A		SLI covered acc. to HP-2-ASED-PR-0059_1_AS_RUN


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Valve MLI covers V102, V103, V104, V105 integrated	27.07.06	PFM			acc. to HP-2-ASED-PR-0059_1_AS_RUN
121345-04 SLI for HTT open areas (tubing, flanges etc.)	27.07.06	PFM	HP-2-ASED-PR-0059-1_as_run		no drwg. issued, as built doc. is the as run procedure.
121346 HOT MLI	16.-19.08.04 & 06.10.04 & 12.06.06	PFM	HP-2-AAEM-LI-0024 Iss. 1.0, 11.08.04		IRR: HP-2-ASED-MN-0729; Procedure: HP-2-AAEM-PR-0003 (1) All integrated on 16.-19.8.04, except closure at accelerometer / harness region, closed on 06.10.04 See NCR: HP-2-ASED-121346-NC-2353 Outer layer tape opened and re-fixed, grounding cable cut and re-crimped with longer cable status 20.06.06 OW 279 closed 21.06.06
121346 MLI grounding wires GP1, GP2	Y	PFM			Grounding cables integrated see EIDP HP-2-ASSE-DP-0006
121347 Filling port MLI	28.07.06	PFM	HP-2-ASED-DW-0227-01-0A HP-2-ASED-DW-0228-01-0A		modified FP MLI mounted acc. to ASED-PR-0060
121348 SLI on (cryo) components at low. SFW	Y	PFM	HP-2-ASED-PR-0059-1_as_run		as built doc. is the as run procedure, all accessible tubing parts covered with SLI; Components covered with SLI: V701, V702, SV723, V105, RD724 flange, P701.
121351-01 Ext. Lower Bulkhead MLI -Layer 1 -Layer 2 -Layer 3 -Layer 4	02.08.07	PFM	HP-2-AAEM-DP-0005, Iss: 2.0	y	HP-2-AAEM-PR-0004 Removed 28.02.2007 J.H. & AAEM; Visual Inspection performed Final Integration acc.PR-0004 by AAEM
121351-02 Ext. CVV Cylinder MLI -Layer 1 -Layer 2 -Layer 3 -Layer 4	19.03.08	PFM	HP-2-AAEM-DP-0005, Iss: 2.0	Y	HP-2-AAEM-PR-0004 Modified in order to give access to P02 Closure of NCR 1508: CVV blankets too short. Repaired for STM, some new blankets needed for PFM MLI at +Y radiator closed on 11.01.06 Removed 23.03.2006 HP-2-ASED-SD-0092; NC-1595
121351-03 Ext. Upper Bulkhead MLI -Layer 1 -Layer 2 -Layer 3 -Layer 4	19.03.08	PFM	HP-2-AAEM-DP-0005, Iss: 2.0	y	HP-2-AAEM-PR-0004 Removed 23.03.2006 HP-2-ASED-SD-0092; NC-1595
121353 LOU MLI		PFM	HP-2-AAEM-LI-0037, issue draft 2, 01.07.05	y	De-integrated
121421-01 T 702	23.07.04	JX 74	HP-2-ASED-DP-0050, Issue 1, 25.04.05	y	C 100
121421-01 T 703	23.07.04	JX 75	HP-2-ASED-DP-0050, Issue 1, 25.04.05	y	C 100
121421-01 T106	3.8.04	JX72	"	y	C100, covered with 5 layer crinkled MLI on 01.04.05
121421-01 T107	3.8.04	JX73	"	y	C100

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121421-01 T113	cancelled	KJ 03	"	y	C100 with reduced width, glued to Filling Port, NC-2307: disintegrated on 13.07.06, SD 101
121421-01 T114	cancelled	KJ 09	"	y	C100 with reduced width, glued to Filling Port, NC-2307: disintegrated on 13.07.06, SD 101
121421-01 T 115	18.07.06	KT90	HP-2-ASED-DP-0051, issue 1, 25.04.05	y	PT 1000 ASED-SD-0101, connected to T113 connector
121421-01 T 116	18.07.06	KR34	"	y	PT 1000 ASED-SD-0101, connected to T114 connector
121421-01 Temp. Sensor T117	17.07.06	KV 90	HP-2-ASED-DP-0050, Issue 1, 25.04.05	Y	C 100, electr. checked and torqued 19.07.06 ASED-SD-0101, harness re-routed
121421-01 Temp. Sensor T118	17.07.06	KV 91	"	Y	C 100, electr. checked and torqued 19.07.06 ASED-SD-0101, harness re-routed
121421-01 Temp. Sensor T202	17.11.04	KO 38	"	Y	C 100, electr. checked and torqued 09.02.05
121421-01 Temp. Sensor T208	17.11.04	KO 40	"	Y	C 100, electr. checked and torqued 09.02.05
121421-01 Temp. Sensor T254	01.12.04	KO 68	"	Y	C 100 electr. checked and torqued 09.02.05
121421-01 Temp. Sensor T256	14.12.04	KO 69	"	Y	C 100, electr. checked and torqued 09.02.05
121421-01 Temp. Sensor T258	14.12.04	KO 70	"	Y	C 100, electr. checked and torqued 09.02.05
121421-01 Temp. Sensor T221	15.05.2007	KO45	"	Y	C 100, electr. checked and torqued on 09.05.05 removed 19.04.2007 Geiger Final Integration acc.PR-0086 H.G. on Red Detector flex link
121421-01 Temp. Sensor T222	15.05.2007	KO46	"	Y	C 100, electr. checked and torqued removed 19.04.2007 Geiger Final Integration acc.PR-0086 H.G. on Evaporator flex link
121421-01 Temp. Sensor T223	15.05.2007	KO47	"	Y	C 100, electr. checked, torqued NC-0775: broken bolt, closed removed 19.04.2007 Geiger Final Integration acc.PR-0086 H.G. on Cooler Pump flex link
121421-01 Temp. Sensor T224	15.05.2007	KO48	"	Y	C100, electr. checked and torqued 15.02.05 removed 19.04.2007 Geiger Final Integration acc.PR-0086 H.G. on Blue Detector flex link
121421-01 Temp. Sensor T225	14.02.05	KO49	"	Y	C 100, P01 had to be rotated by 180° electr. checked and torqued 15.02.05
121421-01 Temp. Sensor T226	20.07.06	KV89	"	Y	C 100, electr. checked and torqued 20.07.06 (old KO50 replaced by KV89)
121421-01 Temp. Sensor T227	14.02.05	KO51	"	Y	C 100, P01 had to be rotated by 180° electr. checked and torqued 15.02.05
121421-01 Temp. Sensor T228	14.02.05	KO52	"	Y	C 100, electr. checked and torqued 15.02.05
121421-01 Temp. Sensor T231	17.11.04	KO 53	HP-2-ASED-DP-0050, Issue 1, 25.04.05	Y	C 100, electr. checked and torqued 09.02.05

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121421-01 Temp. Sensor T232	17.11.04	KO 54	"	Y	C 100, electr. checked and torqued 09.02.05
121421-01 Temp. Sensor T233	17.11.04	KO 55	"	Y	C 100, electr. checked and torqued 09.02.05 NC-0683: AI closed by shimming on 3.2.05 NC-1015: broken bolt, fixed with Kapton tape
121421-01 Temp. Sensor T234	17.11.04	KO 56	"	Y	C 100 electr. checked and torqued 09.02.05
121421-01 Temp. Sensor T235	17.11.04	KO 57	"	y	C 100, electr. checked and torqued 09.02.05 NC-0683: AI closed by shimming on 3.2.05
121421-01 Temp. Sensor T236	17.11.04	KO 58	"	Y	C 100, electr. checked and torqued 09.02.05 NC-0683: AI closed by shimming on 3.2.05
121421-01 Temp. Sensor T237	17.11.04	KO 60	"	Y	C 100, electr. checked and torqued 09.02.05
121421-01 Temp. Sensor T238	13.07.06	MH 20	"	Y	PT 1000, electr. checked and torqued 19.07.06 ASED-SD-0101, harness re-routed
121421-01 Temp. Sensor T239	13.07.06	MH 21	"	Y	PT 1000, electr. checked and torqued 19.07.06 ASED-SD-0101, harness re-routed
121421-01 Temp. Sensor T242	11.02.05	KO 61	"	Y	C 100, electr. checked and torqued 11.02.05
121421-01 Temp. Sensor T244	25.07.2007	KO 62	"	Y	C 100, electr. checked and torqued 11.02.05 C 100, electr. checked and torqued 25.07.2007 A.G.
121421-01 Temp. Sensor T248	11.02.05	KO 65	"	Y	C 100, electr. checked and torqued 11.02.05
121421-01 Temp. Sensor T246	17.11.04	KO 63	"	Y	C 100, electr. checked and torqued 09.02.05
121421-01 Temp. Sensor T247	17.11.04	KO 64	"	Y	C 100, electr. checked and torqued 09.02.05
121421-01 Temp. Sensor T250	15.02.05	KO66	HP-2-ASED-DP-0050, Issue 1, 25.04.05	Y	C 100, electr. checked and torqued 16.02.05
121421-01 Temp. Sensor T252	15.02.05	KO67	HP-2-ASED-DP-0050, Issue 1, 25.04.05	Y	C 100, electr. checked and torqued 16.02.05
121421-01 Temp. Sensor T212	25.04.05	KO42	HP-2-ASED-DP-0050, Issue 1, 25.04.05	Y	C 100, glued to OB shield with Stycast 2850 ST electr. grounding done with AL-tape
121421-01 Temp. Sensor T213	25.04.05	KO43	HP-2-ASED-DP-0050, Issue 1, 25.04.05	Y	C 100, glued to OB shield with Stycast 2850 ST electr. grounding done with AL-tape
121421-01 T862	17.03.05	KV84	HP-2-ASED-DP-0050, Issue 1, 25.04.05	y	C 100
121421-02 T 321 T 322 T 323 T 324	22.08.05	LS 19 LS 20 LS 25 LS 26	HP-2-ASED-DP-0051, issue 1, 25.04.05	y	PT 1000 on SVM TS
121421-02 T 501	15.09.05	LS23	HP-2-ASED-DP-0051, issue 1, 25.04.05	y	PT 1000


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121421-02 T 505	16.09.05	LS29	"	y	PT 1000
121421-02 T 506	16.09.05	LS34	"	y	PT 1000
121421-02 T 506	16.09.05	LS36	"	y	PT 1000
121421-02 T 601	y	ISO 8	"	y	PT 1000 on cover
121421-02 T 602	y	ISO 9	"	y	PT 1000 on cover
121421-02 T 651	y	KR32	"	y	PT 1000 on cryo baffle
121421-02 T 652	y	KR33	"	y	PT 1000 on cryo baffle
121421-02 T 901	21.02.08	LS27	"	y	PT 1000 Removed during TMS installation 31.05.2007 see OW359 Installed at ESTEC A.G. OW 359 closed(R=1081,77 Ohm)
121421-02 T 902	09.09.05	LS28	"	y	PT 1000
121421-02 T 903	12.09.05	LS38	"	y	PT 1000
121421-02 T 904	12.09.05	LS40	"	y	PT 1000
121421-02 T 905	09.09.05	LS35	"	y	PT 1000
121421-02 T 906	y	LS43	"	y	PT 1000
121421-02 T 907	10.01.06	LS17	"	y	PT 1000; NC-1851: +Y Radiator Upper part removed for repair. Radiator Upper part installed; T907 connected ; NC-1941: one bolt on sensor connector slightly bent, to be replaced for PFM
121421-02 T 908	13.09.05	LS18	"	y	PT 1000
121421-02 T 909	12.09.05	KR20	"	y	PT 1000
121421-02 T 910	12.09.05	LS30	"	y	PT 1000
121421-02 T 911	12.09.05	LS41	"	y	PT 1000
121421-02 T 912	12.09.05	KO22	"	y	PT 1000
121421-02 T 931	13.09.05	MH22	"	y	PT 1000 on LOU
121421-02 T 932	13.09.05	MH25	"	y	PT 1000 on LOU

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121421-02 T 933	y	LS33	"	y	PT 1000 on LOR; final integration after LOR integration
121421-02 T 934	15.09.05	KO23	"	y	PT 1000 with cut ears on LOU
121421-02 T 935	15.09.05	LS42	"	y	PT 1000 with cut ears on LOU
121421-02 T 701	06.08.04	KR 23	HP-2-ASED-DP-0051, Issue 1, 28.01.05	y	PT 1000 NCR: 0354, T701 changed from original SN KO 05 due to broken connector screw
121421-02 T 704	06.08.04	KR 26	HP-2-ASED-DP-0051, Issue 1, 28.01.05	y	PT 1000, T704 changed from original SN KO 09
121421-02 T103	3.8.04	KH10		y	PT1000, covered with 5 layer crinkled MLI on 01.04.05
121421-02 Temp. Sensor T207	17.11.04	KR 27	HP-2-ASED-DP-0051, Issue 1, 25.04.05	Y	PT 1000, electr. checked and torqued 09.02.05
121421-02 Temp. Sensor T253	01.12.04	KR 31	HP-2-ASED-DP-0051, Issue 1, 25.04.05	Y	PT 1000, electr. checked and torqued 09.02.05
121421-02 Temp. Sensor T255	01.12.04	KT 97	HP-2-ASED-DP-0051, Issue 1, 25.04.05	Y	PT 1000, electr. checked and torqued 09.02.05
121421-02 Temp. Sensor T249	15.02.05	KR29	HP-2-ASED-DP-0051, Issue 1, 25.04.05	Y	PT 1000, electr. checked and torqued 16.02.05
121421-02 Temp. Sensor T251	15.02.05	KR30	HP-2-ASED-DP-0051, Issue 1, 25.04.05	Y	PT 1000, electr. checked and torqued 16.02.05
121421-02 Temp. Sensor T211	25.04.05	KR28	HP-2-ASED-DP-0051, Issue 1, 25.04.05	Y	PT 1000, glued to OB shield with Stycast 2850 ST electr. grounding done with AL-tape
121421-02 Thermistor T462 & CCH DCB22 on cyl. thermal shield 3	11 / 04	KU01	HP-2-ASED-DP-0051, Issue 1, 25.04.05; HP-2-CASA-AB-0002, issue 1, 07.07.04	Y	PT 1000 Procedure: HP-2-ASED-TP-0028
121421-02 Thermistor T442 & CCH DCA 21 on cyl. thermal shield 2	11 / 04	KH13	"	Y	PT 1000 Procedure: HP-2-ASED-TP-0028
121421-02 Thermistor T422 & CCH DCB 21 on cyl. thermal shield 1	11 / 04	KU02	"	Y	PT 1000 Procedure: HP-2-ASED-TP-0028 NC-0504: broken screw, reworked, closed.
121421-02 T801	See remark	KR34	HP-2-ASED-DP-0051, Issue 1, 25.04.05 PT 1000	Y	Procedure: HP-2-ASED-TP-0047, bonded with Stycast 2850 FT acc. to ISO-MP-BEB00.020, Issue 1 on AlMgSi 1Cu washers acc. to HP-2-ASED-DW-0138-01-0B NC-0820: Bonding directly on Ni coated CuBe failed during sample test, NRB: Introduction of additional AlMgSi 1Cu washers acc. to HP-2-ASED-DW-0138-01-0B T801 removed and changed with T 872, harness extended
121421-02 T802	08.03.05	KH11	"	Y	Al tape over sensor
121421-02 T803	08.03.05	KH12	"	Y	"


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121421-02 T804	See remark	KT90	"	Y	T804 removed and changed with T 871, harness extended
121421-02 T805	09.03.05	KT93	"	Y	AI tape over sensor "
121421-02 T806	09.03.05	KT94	"	Y	"
121421-02 T851	09.03.05	KT95	"	Y	Procedure: HP-2-ASED-TP-0046, NC-0820 and bonding remarks as for T801
121421-02 T852	09.03.05	KT98	"	Y	"
121421-02 T853	09.03.05	KU04	"	Y	"
121421-02 T861	17.03.05	KO09	"	Y	"
121421-02 T871 LSFW near TSS 13	20.06.06	LS 39	HP-2-ASED-DP-0051, Issue 1, 25.04.05	Y	PT 1000 Procedure HP-2-ASED-SD-0101_1_PLM MLI modifications_add sensors New sensor, changed with T 804 see SD-0101, Harness extended from T804
121421-01 T872 LSFW near TSS 13	20.06.06	KV 85	HP-2-ASED-DP-0050, Issue 1, 25.04.05	Y	C100 Procedure HP-2-ASED-SD-0101_1_PLM MLI modifications_add sensors New sensor, changed with T 801 see SD-0101, Harness extended from T 801
121421-02 Thermistor T461 & CCH DCA23 on lower bulkh. thermal shield 3	12.01.05	KO20	HP-2-ASED-DP-0051, Issue 1, 25.04.05; HP-2-CASA-AB-0002, issue 1, 07.07.04	Y	PT 1000 Procedure: HP-2-ASED-TP-0045 (NC-0651: M3 holes in connector brackets changed to 4.3, covered by HP-2-ASED-DP-0028, issue 2)
121421-02 Thermistor T441 & CCH DCB 23 on lower bulkh. thermal shield 2	12.01.05	KO12	"	Y	PT 1000 Procedure: HP-2-ASED-TP-0045
121421-02 Thermistor T421 & CCH DCA 22 on lower bulkh. thermal shield 1	12.01.05	KO11	"	Y	PT 1000 Procedure: HP-2-ASED-TP-0045
121421-02 Thermistor T463 & CCH DCE11 on upper bulkh. thermal shield 3	04.03.2005	KO14	"	Y	See also drawing 2547-121430-100-1B-0B, "Herschel PFM Cryostat harness internal CCH & SIH"
121421-02 Thermistor T464 & CCH DCA11 on upper bulkh. thermal shield 3	04.03.2005	KO15	"	Y	See also drawing 2547-121430-100-1B-0B, "Herschel PFM Cryostat harness internal CCH & SIH"
121421-02 Thermistor T443 & CCH DCE12 on upper bulkh. thermal shield 2	07.03.2005	KO13	"	Y	
121421-02 Thermistor T444 & CCH DCB11 on upper bulkh. thermal shield 2	07.03.2005	KO25	"	Y	
121421-02 Thermistor T423 & CCH DCE13	08.03.2005	LS31	"	Y	

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on upper bulkh. thermal shield 1					
121421-02 Thermistor T424 & CCH DCA12 on upper bulkh thermal shield 1	08.03.2005	LS32	"	Y	
121422-01 Pressure Sensor P501	01.09.05	PFM S/N 510214	HP-2-ASED-DP-0033 Iss. 1, 16.03.04	Y	
121422-01 P701	13.01.05	FM2, SN 510212	HP-2-ASED-DP-0033 Iss. 1, 16.03.04	y	NC-0307: New design of pressure sensor bracket NC-0442: I/F deviation btw. P701 and int. CCH (different connector types, harness adaptor added)
121422-01 P101	preliminary fixed for test 11.6.04; final mech. integr. 13.1.05	FM1, SN 510211	HP-2-ASED-DP-0033 Iss. 1, 16.03.04	y	NCR-0272, Press sensor dropped NCR-0277, incorrect p. sensor bracket design NCR-0442, P701 harness (CCH CCA11) has a MDM 9P, this will not fit to sensor, ASED / CASA have to make an adaptor to sensor circular connector; adaptors with FM connector (baked) installed on 21.2.05, finally fixed and mated on 9.3.05
121422-01 P101 Support Plate	y			y	
121422-01 P101 bkt (front/rear)	y		NCR-0277	y	NCR-0277, incorrect p. sensor bkt design, corrected, closed
121422-01 P701 upper / lower bracket	y		NCR - 0307	y	NCR - 0307: re-design and manufacture at AIR, closed
121422-02 Pressure Sensor P502	16.11.06	QM, SN 951634	HP-2-ASED-DP-0032 Iss. 1, 16.03.04	Y	NC-1519: Harness adapter installed for TB/TV test to correct contact problem, adapter removed before sine test Remove of QM 13.06.06 H. Huber Reintegration acc. SD 0063 16.11.06 Torque 20 Nmr.; harness adapter should be integrated see NC-1519; harness adapter integrated 23.11.2006 A.G.
121423 A701	24.9.04	Endevco SN 11837	Endevco Model 2272 HP-2-ASED-TR-0031 /1	y	calibrated together with accel. harness
121423 A702	24.9.04	Endevco SN 11585	"	y	calibrated together with accel. harness
121423 A703	24.9.04	Endevco SN 11841	"	y	calibrated together with accel. harness
121423 Accelerometer (A201 to A206)	3.1.05	Endevco 11842 11840 Endevco 11844 Endevco 11826 Endevco 11851 Endevco 11848	"	y	first Hammertest performed 19.01.05 Observation at A 206 on 18.4.05: Shrink sleeve bend at connector to A 206. Kapton tape wrapped around for protection, health check and noise measurement on 21.4.05 ok.
121423 Accelerometer (A207 and A208)	See remark	Endevco 11865 Endevco 11843		y	PACS MTD accelerometers; Removed 12.04.07 acc. PACS MTD removal T.B. Harness for Accelerometer finally terminated
121423 Accelerometer A421 on upper bulkhead thermal shield 1	xx.03.2005	SN 11847	"	Y	
121423 Accelerometer A422 on upper	xx.03.2005	SN 11850	Endevco Model 2272 HP-2-ASED-TR-0031 /1	Y	


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bulkhead thermal shield 1					
121423 A101	24.9.04	Endevco SN 11833	"	calibrated	calibrated together with accel. harness; insulated with Kapton tape
121423 A102	24.9.04	Endevco SN 11846	"	calibrated	calibrated together with accel. harness; insulated with Kapton tape
121423 A103	24.9.04	Endevco SN 11839	"	calibrated	calibrated together with accel. harness; insulated with Kapton tape
121423 A104	24.9.04	Endevco SN 11849	"	calibrated	calibrated together with accel. harness; insulated with Kapton tape
121423 A105	24.9.04	Endevco SN 11825	"	calibrated	calibrated together with accel. harness; insulated with Kapton tape
121423 A106	24.9.04	Endevco SN 11845	"	calibrated	calibrated together with accel. harness; insulated with Kapton tape
121423 A107	24.9.04	Endevco SN 11832	"	calibrated	calibrated together with accel. harness; insulated with Kapton tape
121423 A108	24.9.04	Endevco SN 11580	"	calibrated	calibrated together with accel. harness; insulated with Kapton tape
121423 A109	24.9.04	Endevco SN 11876	"	calibrated	calibrated together with accel. harness; insulated with Kapton tape
121424 HOT Accelerometer block type 1	28.7.04		HP-2-ASED-DW-0046	n.a.	Installed on HOT
121425 Adaptor Block Type 2 (4 x)	3.1.05		HP-2-ASED-DW-0047-01-0A	n.a.	LN 9016 washers used for mounting instead of HV 100
121426 Accel. blocks type 3 (+x / -x)	3.8.04		HP-2-ASED-DW-0059-01-0A	n.a.	(Qty = 2)
121427 Accel. block type 4	24.9.04		HP-2-ASED-DW-0060-01-0A	n.a.	Hammer test on A101 - A109 performed on 27.9.04
121431-01 HOT CCH Bundles			see below	y	From cryo components to Lower SFW CBs Ref: HP-2-ASED-TP-0022 (1) IRR: HP-2-ASED-MN-0729
121431-01 DCE 28	4.8.04		HP-2-CASA-AB-0004 Iss. 1, 28.07.04	y	L701 / H701 NCR 0343 - , LLP wiring change (closed)
121431-01 DCE 29	4.8.04		HP-2-CASA-AB-0004 Iss. 1, 28.07.04	y	L702 / H702 NCR 0343 - , LLP wiring change (closed)
121431-01 DCB 24	30.7.04		HP-2-CASA-AB-0003 Iss. 1, 20.07.04	y	T701 / T703 NC-0833, insulation damaged at HOT HST brkt 7, repaired and checked - closed
121431-01 DCE 24	30.7.04		HP-2-CASA-AB-0003 Iss. 1, 20.07.04	y	T702 / T704
121431-01 DCE 25	27.9.04		HP-2-CASA-AB-0004 Iss. 1, 28.07.04	y	A701, 702, 703 hammer test performed on 27.9.04
121431-01 CCH			HP-2-CASA-AB-0011 Iss. 1, 22.02.05	y	AB-0011 is the cover-ABCL for all internal CCH, IRR: HP-2-ASED-MN-0749 ASED-SD-0101: Routing of internal CCH modified
121431-01 DCM22	7.9.04		HP-2-CASA-AB-0004 Iss. 1, 28.07.04	y	
121431-01 DCM21	7.9.04		HP-2-CASA-AB-0004 Iss. 1, 28.07.04	y	
121431-01 DCA24	y		HP-2-CASA-AB-0004 Iss. 1, 28.07.04	y	
121431-01	7.9.04		HP-2-CASA-AB-0004	y	

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DCB25			Iss. 1, 28.07.04		
121431-01 DCE32	6.9.04		HP-2-CASA-AB-0004 Iss. 1, 28.07.04	y	
121431-01 DCE33	24.9.04		HP-2-CASA-AB-0004 Iss. 1, 28.07.04	y	
121431-01 DCE34	24.9.04		HP-2-CASA-AB-0004 Iss. 1, 28.07.04	y	
121431-01 DCM23	2.9.04		HP-2-CASA-AB-0004 Iss. 1, 28.07.04	y	
121431-01 DCE27	2.9.04		HP-2-CASA-AB-0003 Iss. 1, 20.07.04	y	
121431-01 DCE30	7.9.04		HP-2-CASA-AB-0003 Iss. 1, 20.07.04	y	ASED-NC-0343 (closed): Pin allocation for L101 & L102 corrected
121431-01 DCM24	2.9.04		HP-2-CASA-AB-0003 Iss. 1, 20.07.04	y	
121431-01 DCE26	15.9.04		HP-2-CASA-AB-0006 Iss. 1, 10.09.04	y	
121431-01 DCE31	7.9.04		HP-2-CASA-AB-0004 Iss. 1, 28.07.04	y	ASED-NC-0343 (closed): Pin allocation for L101 & L102 corrected
121431-01 DCB17	15.9.04		HP-2-CASA-AB-0003 Iss. 1, 20.07.04	y	
121431-01 DCA18	15.9.04		HP-2-CASA-AB-0003 Iss. 1, 20.07.04	y	
121431-01 DCE 22	13.01.05		HP-2-CASA-AB-0006 Iss. 1, 10.09.04	y	to A20X
121431-01 DCE 23	13.01.05		HP-2-CASA-AB-0006 Iss. 1, 10.09.04	y	to A20X, DCE 23 re-routed on after OBA fit check on 21.01.2005, see log book and HP-2-ASED-TP-0044
121431-01 DCE 16	23.07.06		Acc.: HP-2-ASED-SD-0101	Y	Harness for new Sensors: T117 (C100; tubing), T118 (C100; tubing), T238 (PT1000; OBA ventline), T239 (PT1000; existing sensor T207
121431-01 DCE 17	10.05.05		HP-2-CASA-AB-0002, issue 1, 07.07.04	y	
121431-01 DCA 17	10.05.05		HP-2-CASA-AB-0002, issue 1, 07.07.04	y	
121431-01 DCB 16	10.05.05		HP-2-CASA-AB-0002, issue 1, 07.07.04	y	
121431-01 DCE 21	xx.03.2005	PFM	HP-2-CASA-AB-0003 Iss. 1, 20.07.04	y	
121431-01 DCA 13	02.02.05	PFM	HP-2-CASA-AB-0003 Iss. 1, 20.07.04	y	CCH integration acc. to HP-2-ASED-TR-0065
121431-01 DCB 12	02.02.05	PFM	"	y	
121431-01 DCA 14	03.02.05	PFM	"	y	Thermal brackets not yet fastened - open work #45, closed on 3.2.05
121431-01 DCB 13	03.02.05	PFM	"	y	
121431-01 DCE 15	03.02.05	PFM	"	y	NC-0766: wires broken (T249), repaired on 15.2.05, NCR closed.
121431-01 DCA 16	02.02.05	PFM	"	y	
121431-01 DCB 15	02.02.05	PFM	"	y	
121431-01 DCE 16	02.02.05 17.07.06	PFM	"	y	Remounted after modifications performed according to ACR-SD-0111 add temp sensor lines
121431-01 CCE11	21.02.2005	PFM	HP-2-CASA-AB-0009, issue 1, 17.12.04	Y	thermal bracket on TSS strap 11

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121431-01 CCE12	21.02.2005	PFM	HP-2-CASA-AB-0005, issue 1, 06.08.04	Y	thermal bracket on TSS strap 11
121431-01 CCA11	21.02.2005	PFM	HP-2-CASA-AB-0009, issue 1, 17.12.04	Y	thermal bracket on TSS strap 18
121431-01 CCB11	22.02.2005	PFM	HP-2-CASA-AB-0009, issue 1, 17.12.04	Y	thermal bracket on TSS strap 18
121431-01 CCA12	22.02.2005	PFM	"	Y	thermal bracket on TSS strap 17
121431-01 CCB12	22.02.2005	PFM	"	Y	thermal bracket on TSS strap 17
121431-01 CCE13	22.02.2005	PFM	"	Y	thermal bracket on TSS strap 16
121431-01 CCE14	22.02.2005	PFM	"	Y	thermal bracket on TSS strap 16
121431-01 CCA10	23.02.2005	PFM	"	Y	thermal bracket on TSS strap 8 short jackposts exchanged by long ones to allow mounting of lock washers
121431-01 CCB10	23.02.2005	PFM	"	Y	thermal bracket on TSS strap 8 short jackposts exchanged by long ones to allow mounting of lock washers
121431-01 CCE10	23.02.2005	PFM	"	Y	thermal bracket on TSS strap 8 short jackposts exchanged by long ones to allow mounting of lock washers NC-0825: Two broken wires to T249 & T253, repaired, closed.
121431-01 CCE20	23.02.2005	PFM	HP-2-CASA-AB-0005, issue 1, 06.08.04	Y	thermal bracket on TSS strap 8 short jackposts exchanged by long ones to allow mounting of lock washers
121431-01 CCS11	See remark	SPARE	HP-2-CASA-AB-0009, issue 1, 17.12.04	y	SPARE, will not be integrated, no T/C bracket potted
121431-02 CCH-ICA-10	28.07.05	PFM	HP-2-CASA-AB-0018, issue 2, 29.07.05	y	ext. CCH: HP-2-ASED-TP-0076
121431-02 CCH-ICB-10	27.08.05	PFM	"	y	
121431-02 CCH-ICE-10	y	PFM	"	y	
121431-02 CCH-ICE-20	y	PFM	"	y	
121431-02 CCH-ICE-11	28.07.05	PFM	"	y	
121431-02 CCH-ICE-12	y	PFM	"	y	
121431-02 CCH-ICE-13	27.07.05	PFM	"	y	
121431-02 CCH-ICE-14	27.07.05	PFM	"	y	
121431-02 CCH-ICA-11	26.07.05	PFM	"	y	
121431-02 CCH-ICA-12	28.07.05	PFM	"	y	
121431-02 CCH-ICB-11	28.07.05	PFM	"	y	

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121431-02 CCH-ICB-12	28.07.05	PFM	"	y	
121431-02 CCH-ICE-31	31.08.05	PFM	"	y	
121431-02 CCH-ICE-32	31.08.05	PFM	"	y	
121431-02 CCH-ICE-33	y	PFM	"	y	
121431-02 CCH-ICE-34	y	PFM	"	y	
121431-02 CCH-ICE-36	y	PFM	"	y	
121431-02 CCH-ICA-31	27.07.05	PFM	"	y	
121431-02 CCH-ICB-31	27.07.05	PFM	"	y	
121431-02 CCH-ICA-33	27.08.05	PFM	"	y	
121431-02 CCH-ICB-33	18.09.05	PFM	"	y	
121431-02 CCH-ICS-31	29.08.05	PFM	"	y	
121431-02 CCH-ICA-34	18.09.05	PFM	"	y	
121431-02 CCH-ICB-34	18.09.05	PFM	"	y	
121431-02 CCH-ICS-36	29.08.05	PFM	"	y	
121431-02 CCH-ICS-32	y	PFM	"	y	
121431-02 CCH-ICS-33	y	PFM	"	y	
121431-02 CCH-ICE-35	27.09.05	PFM	"	y	
121431-02 CCH-ICS-37	y	PFM	"	y	
121431-02 CCH-ICS-38	y	PFM	"	y	
121431-02 CCH-ICA-32	01.08.05	PFM	"	y	NC-1941: one connector bolt bent on 21T907-P01, bolt to be replaced for PFM
121431-02 CCH-ICB-32	17.08.05	PFM	"	y	
121431-02 CCH-ICA-51		PFM	"	y	HSS Sunshade;
121431-02 CCH-ICB-51		PFM	"	y	HSS Sunshade;

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121431-02 CCH-ICA-41	22.09.05	PFM	"	y	SVM TS
121431-02 CCH-ICB-41	22.09.05	PFM	"	y	SVM TS
121432 Harness anchors (cable support rails)	05.10./ 21.10.04	PFM	2547-121432-155-01-0A HP-2-ASED-DP-0028, iss. 2	n.a.	bonded with EC 2216; on 03.11.04 eight anchors removed and re-bonded in corrected position; position of all anchors checked and now ok. After harness integration lock wires applied on all upper and lower anchors
121432 Thermal bracket Assy on TSS chains 11, 16, 17, 18 (lower SFW)	22.03.05	PFM	2547-121432-156-01-0A 2547-121432-157-01-0A HP-2-ASED-DP-0028, iss. 2	y	Spacer width: 39.2 on chain 11 and 16; Spacer width: 43.2 on chain 17 and 18
121432-01 SIH-CH-01	14.07.06	PFM	HP-2-CASA-AB-0012, iss. 2, 18.04.05	y	finally routed and connected to HIFI CQM, ASED-SD-0110
121432-01 SIH-CH-02	14.07.06	PFM	"	y	finally routed and connected to HIFI CQM, ASED-SD-0110 NC-0816: Width of thermal bracket, reworked by ASED
121432-01 SIH-CH-03	14.07.06	PFM	"	y	finally routed and connected to HIFI CQM, ASED-SD-0110
121432-01 SIH-CH-04	14.07.06	PFM	"	y	finally routed and connected to HIFI CQM, ASED-SD-0110 NC-0816: Width of thermal bracket, reworked by ASED
121432-01 SIH-CH-05	22.03.05 14.07.06	PFM	"	y	FT connector J17 installed with non baked O-ring seal, accepted for this single case.
121432-01 SIH-CS-01 SPIRE J-FET harness	06.05.05 19.07.06	PFM	HP-2-CASA-AB-0013, iss. 1 rev.1, 18.07.05	y	finally routed and connected to SPIRE CQM, re-routed acc. to ASED-SD-0101 NC-0805: Backshell modified NC-0975: Outer and inner SPIRE wire shield contact, repaired by CASA.
121432-01 SIH-CS-02 SPIRE J-FET harness	15.04.05 19.07.06	PFM	"	y	finally routed and connected to SPIRE CQM, re-routed acc. to ASED-SD-0101 NC-0805: Backshell modified; NC-0895: Error in ICD, H/W is o.k.
121432-01 SIH-CS-03	06.05.05 19.07.06	PFM	"	y	finally routed and connected to SPIRE CQM NC-0805: Backshell modified NC-0975: Outer and inner SPIRE wire shield contact, repaired by CASA.
121432-01 SIH-CS-04	15.04.05 19.07.06	PFM	"	y	finally routed and connected to SPIRE CQM
121432-01 SIH-CS-05	15.04.05 19.07.06	PFM	"	y	finally routed and connected to SPIRE CQM
121432-01 SIH-CS-06	15.04.05 19.07.06	PFM	"	y	finally routed and connected to SPIRE CQM
121432-01 SIH-CS-07	15.04.05 19.07.06	PFM	"	y	finally routed and connected to SPIRE CQM
121432-01 SIH-CS-08	18.04.05 19.07.06	PFM	"	y	finally routed and connected to SPIRE CQM
121432-01 SIH-CS-09	18.04.05 19.07.06	PFM	"	y	finally routed and connected to SPIRE CQM
121432-01 SIH-CS-10	18.04.05 19.07.06	PFM	"	y	finally routed and connected to SPIRE CQM, re-routed acc. to ASED-SD-0101
121432-01 SIH-CS-11	15.04.05 19.07.06	PFM	"	y	finally routed and connected to SPIRE CQM, re-routed acc. to ASED-SD-0101
121432-01 SIH-CS-12	18.04.05 19.07.06	PFM	"	y	finally routed and connected to SPIRE CQM, re-routed acc. to ASED-SD-0101


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121432-01 SIH-CS-13	14.04.05 19.07.06	PFM	"	y	finally routed and connected to SPIRE CQM, re-routed acc. to ASED-SD-0101
121432-01 SIH-CP-01	20.04.05	PFM	HP-2-CASA-AB-0014, iss. 1, 30.03.05	y	finally routed and connected to PACS MTD
121432-01 SIH-CP-02	20.04.05	PFM	"	y	finally routed and connected to PACS MTD
121432-01 SIH-CP-03	19.04.05	PFM	"	y	finally routed and connected to PACS MTD
121432-01 SIH-CP-04	19.04.05	PFM	"	y	finally routed and connected to PACS MTD
121432-01 SIH-CP-05	20.04.05	PFM	"	y	finally routed and connected to PACS MTD
121432-01 SIH-CP-06	20.04.05	PFM	"	y	finally routed and connected to PACS MTD
121432-01 SIH-CP-07	21.04.05	PFM	"	y	finally routed and connected to PACS MTD
121432-01 SIH-CP-08	21.04.05	PFM	"	y	finally routed and connected to PACS MTD
121432-01 SIH-CP-09	21.04.05	PFM	"	y	finally routed and connected to PACS MTD
121432-01 SIH-CP-10	21.04.05	PFM	"	y	finally routed and connected to PACS MTD
121432-01 SIH-CP-11	21.04.05	PFM	"	y	finally routed and connected to PACS MTD; NC0917: Bent pin in FTH, reworked.
121432-01 SIH-CP-12	21.04.05	PFM	"	y	finally routed and connected to PACS MTD
121432-01 SIH-CP-13	20.04.05	PFM	"	y	finally routed and connected to PACS MTD
121432-01 SIH-CP-14	19.04.05	PFM	"	y	finally routed and connected to PACS MTD
121432-01 SIH-CP-15	19.04.05	PFM	"	y	finally routed and connected to PACS MTD
121432-02 SIH-IH-01	15.07.05 02.08.06	PFM	HP-2-ASSE-AB-0002, issue 1, 10.06.05	y	SIH-IH: HP-2-ASED-TP-0077 HIFI CQM
121432-02 SIH-IH-02	15.07.05 02.08.06	PFM	"	y	HIFI CQM
121432-02 SIH-IH-03	15.07.05 02.08.06	PFM	"	y	HIFI CQM
121432-02 SIH-IH-04	15.07.05 02.08.06	PFM	"	y	HIFI CQM
121432-02 SIH-IH-05	02.08.06	PFM	"	y	removed 07.07.06, NC-1171: Contact swap HIFI CQM
121432-02 SIH-IH-06	12.04.2008	PFM	HP-2-ASSE-AB-0003, issue 1, 16.08.05	y	LOU-Removed 21.03.2006 HP-2-ASED-SD-0054 On CB 311200 J05-J08 connected and torqued see SD0289 08.04.08 J.Lang Electrical Integration SD-0300 performed On 12.04.2008 W.Hund
121432-02 SIH-IH-07	12.04.2008	PFM	"	y	LOU-Removed 21.03.2006 HP-2-ASED-SD-0054 On CB 311200 J05-J08 connected and torqued see SD0289 08.04.08 J.Lang Electrical Integration SD-0300 performed On 12.04.2008 W.Hund
121432-02 SIH-IH-08	12.04.2008	PFM	"	y	LOU-Removed 21.03.2006 HP-2-ASED-SD-0054 On CB 311200 J05-J08 connected and torqued see SD0289 08.04.08 J.Lang Electrical Integration SD-0300 performed On 12.04.2008 W.Hund
121432-02 SIH-IH-09	12.04.2008	PFM	"	y	LOU-Removed 21.03.2006 HP-2-ASED-SD-0054 On CB 311200 J05-J08 connected and torqued see

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					SD0289 08.04.08 J.Lang Electrical Integration SD-0300 performed On 12.04.2008 W.Hund
121432-02 SIH-IH-10	12.04.2008	PFM	"	y	LOU-Removed 21.03.2006 HP-2-ASED-SD-0054 On CB 311200 J05-J08 connected and torqued see SD0289 08.04.08 J.Lang Electrical Integration SD-0300 performed On 12.04.2008 W.Hund
121432-02 SIH-IH-11	12.04.2008	PFM	"	y	LOU-Removed 21.03.2006 HP-2-ASED-SD-0054 On CB 311200 J05-J08 connected and torqued see SD0289 08.04.08 J.Lang Electrical Integration SD-0300 performed On 12.04.2008 W.Hund
121432-02 SIH-IH-12	12.04.2008	PFM	"	y	LOU-Removed 21.03.2006 HP-2-ASED-SD-0054 On CB 311200 J05-J08 connected and torqued see SD0289 08.04.08 J.Lang Electrical Integration SD-0300 performed On 12.04.2008 W.Hund
121432-02 SIH-IS-01	18.07.06	PFM	HP-2-ASSE-AB-0005, issue 1, 15.07.05	y	
121432-02 SIH-IS-02	18.07.06	PFM	"	y	
121432-02 SIH-IS-03	18.07.06	PFM	"	y	
121432-02 SIH-IS-04	18.07.06	PFM	"	y	
121432-02 SIH-IS-05	18.07.06	PFM	"	y	
121432-02 SIH-IS-06	18.07.06	PFM	"	y	
121432-02 SIH-IS-07	18.07.06	PFM	"	y	
121432-02 SIH-IS-08	18.07.06	PFM	"	y	
121432-02 SIH-IS-09	18.07.06	PFM	"	y	
121432-02 SIH-IS-10	18.07.06	PFM	"	y	
121432-02 SIH-IS-11	18.07.06	PFM	"	y	
121432-02 SIH-IS-12	18.07.06	PFM	"	y	
121432-02 SIH-IS-13	18.07.06	PFM	"	y	
121432-02 SIH-IP-01	18.07.06	PFM	HP-2-ASSE-AB-0004, issue 1, 10.06.05	y	
121432-02 SIH-IP-02	03.09.05	PFM	"	y	
121432-02 SIH-IP-03	01.09.05	PFM	"	y	

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121432-02 SIH-IP-04	01.09.05	PFM	"	y	
121432-02 SIH-IP-05	02.09.05	PFM	"	y	
121432-02 SIH-IP-06	02.09.05	PFM	"	y	
121432-02 SIH-IP-07	05.09.05	PFM	"	y	
121432-02 SIH-IP-08	06.09.05	PFM	"	y	
121432-02 SIH-IP-09	06.09.05	PFM	"	y	
121432-02 SIH-IP-10	06.09.05	PFM	"	y	
121432-02 SIH-IP-11	06.09.05	PFM	"	y	
121432-02 SIH-IP-12	06.09.05	PFM	"	y	
121432-02 SIH-IP-13	02.09.05	PFM	"	y	
121432-02 SIH-IP-14	01.09.05	PFM	"	y	
121432-02 SIH-IP-15	02.09.05	PFM	"	y	
121432-04 HIFI SIH-IH-21 to 24 (external coax cables)	05.07.2007	PFM	HP-2-ASED-PS-0048, issue 3;18.10.07 HP-2-ASED-DW-0252_01_A_Part 21 HP-2-ASED-DW-0253_01_A_Part 22 HP-2-ASED-DW-0254_01_A_Part 23 HP-2-ASED-DW-0255_01_A_Part 24	y	MA = 0,8 Nm, bonding measurement done Due to bad HF performance for STM use only; External Coax Cable Integration by ELSPEC
121432-04 HIFI SIH-CH-21 to 24 (internal coax cables)	25.05.07	PFM	HP-2-ASED-PS-0048, Iss 3 HP-2-ASED-DW-0183_01_B_Part 21 HP-2-ASED-DW-0186_01_B_Part 22 HP-2-ASED-DW-0189_01_B_Part 23 HP-2-ASED-DW-0192_01_B_Part 24	y	STM parts removed from PLM, new type of coax needed for FM, no COAX cables necessary for STM 2 tests. Final Integration on PFM acc. PR-0152 on 25.05.07 A.K. & Elspec
121432-04 HIFI SIH-SH-21 to 24 (SVM coax cables)	09.10.2007	PFM	HP-2-ASED-PS-0048, issue 3;18.10.07 HP-2-ASED-DW-0279_01_0A_Part 21 HP-2-ASED-DW-0280_01_0A_Part 22 HP-2-ASED-DW-0281_01_0A_Part 23 HP-2-ASED-DW-0282_01_0A_Part 24	y	Final Integration on Panel HIFI acc. PR-0076 W.H. Connection of HIFI Coax Cables to CB 311300 acc. SRON-U/HIFI/PR/2007-001 Iss.3 A.K.
121433 CB 212420	16.09.05	PFM	HP-2-ASED-DP-0028, issue 2	Y	Mating acc. HP-2-ASED-TP-0077 Brackets mounted to SVM according to HP-2-ASED-TP-0087 1.1 MLI standoffs integrated
121433 CB 311100	12.07.05	PFM	"	Y	Mating acc. HP-2-ASED-TP-0077 Brackets mounted to SVM according to HP-2-ASED-

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					TP-0087 1.1 MLI standoffs integrated
121433 CB 311200	12.07.05	PFM	"	Y	Mating acc. HP-2-ASED-TP-0077 Brackets mounted to SVM according to HP-2-ASED-TP-0087 1.1 MLI standoffs integrated
121433 CB 311300	12.07.05	PFM	"	Y	Mating acc. HP-2-ASED-TP-0077 Brackets mounted to SVM according to HP-2-ASED-TP-0087 1.1 MLI standoffs integrated
121433 CB 312100	27.08.05	PFM	"	Y	Mating acc. HP-2-ASED-TP-0077 Brackets mounted to SVM according to HP-2-ASED-TP-0087 1.1 MLI standoffs integrated
121433 CB 312200	27.08.05	PFM	"	Y	Mating acc. HP-2-ASED-TP-0077 Brackets mounted to SVM according to HP-2-ASED-TP-0087 1.1 MLI standoffs integrated
121433 CB 312300	27.08.05	PFM	"	Y	Mating acc. HP-2-ASED-TP-0077 Brackets mounted to SVM according to HP-2-ASED-TP-0087 1.1 MLI standoffs integrated
121433 CB 313100	27.08.05	PFM	"	Y	Mating acc. HP-2-ASED-TP-0077 Brackets mounted to SVM according to HP-2-ASED-TP-0087 1.1 MLI standoffs integrated
121433 CB 313200	27.08.05	PFM	"	Y	Mating acc. HP-2-ASED-TP-0077 Brackets mounted to SVM according to HP-2-ASED-TP-0087 1.1 MLI standoffs integrated
121433 CB 314200	27.08.05	PFM	"	Y	Mating acc. HP-2-ASED-TP-0077 (changed to CI 314200 due to writing error) Brackets mounted to SVM according to HP-2-ASED-TP-0087 1.1 MLI standoffs integrated
121433 CB 315100	27.08.05	PFM	"	Y	Mating acc. HP-2-ASED-TP-0077 Brackets mounted to SVM according to HP-2-ASED-TP-0087 1.1 MLI standoffs integrated
121433 CB 316100	27.08.05	PFM	"	Y	Mating acc. HP-2-ASED-TP-0077 Brackets mounted to SVM according to HP-2-ASED-TP-0087 1.1 MLI standoffs integrated
121433 CB 321100	27.08.05	PFM	"	Y	Mating acc. HP-2-ASED-TP-0077 Brackets mounted to SVM according to HP-2-ASED-TP-0087 1.1 MLI standoffs integrated
121433 CB 321200	27.08.05	PFM	"	Y	Mating acc. HP-2-ASED-TP-0077 Brackets mounted to SVM according to HP-2-ASED-TP-0087 1.1 MLI standoffs integrated
121433 CB 321300	27.08.05	PFM	"	Y	Mating acc. HP-2-ASED-TP-0077 Brackets mounted to SVM according to HP-2-ASED-TP-0087 1.1 MLI standoffs integrated
121433 Harness Rails	18.07.05	PFM	HP-2-ASED-DP-0028, Issue 2	y	Part No. 3132, 2900, 2728, 2526, 2400, 2300, 2122, 4344, 4200. Drwg. No. 2547-121430-200-07-0D; NC-1256: Fixed with bolts & nuts instead of helicoils
121433 Harness Rails	20.07.05	PFM	HP-2-ASED-DP-0028, Issue 2	y	Part No. 3334, 3800, 3900, 4041, 2 x 2100. Drwg. No. 2547-121430-200-07-0D; NC-1256: Fixed with bolts & nuts instead of helicoils

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121433 P-clamps	27.08.05			y	on struts No. 22, 33, 38, 39, 40.
121433 ?? LOU HRN Support Structure See CI:121570	28.03.2008	PFM	HP-2-ASED-DW-0162-01 issue A, 31.05.05	y	Brackets -Z & +Z to be removed after mechanical tests at ESTEC (see OW 122) On + Z modifie the hole M4 Removed 30.03.06 HP-2-ASED-SD-0053 Partly integrated acc. PR-0030 Hengstler 12.03.2008 Final Integration acc.PR-0030 Geiger
121433 Lower SFW Harness CBs					
121433 CB 214341	29.7.04		HP-2-ASED-DP-0028 (A)	n.a	Lower SFW CB +Y, connector labels exchanged on 21.01.05 SLI covered acc. to ASED-PR-0059
121433 CB 214342	29.7.04		HP-2-ASED-DP-0028 (A)	n.a	Lower SFW CB +Z SLI covered acc. to ASED-PR-0059
121433 CB 214343	29.7.04		HP-2-ASED-DP-0028 (A)	n.a	Lower SFW CB -Y; marking of connectors performed on 21.01.05 L-bracket for J01 exchanged on 3.12.04, SLI covered acc. to ASED-PR-0059
121433 CB 214344	29.7.04		HP-2-ASED-DP-0028 (A)	n.a	Lower SFW CB -Z SLI covered acc. to ASED-PR-0059
121433 CB 212510 + support	Y		HP-2-ASED-DP-0028 (A)	n.a	H701/702 CB
121433 L701 P-Clamp + CB/Backshell	Y		HP-2-ASED-DP-0028 (A)	n.a	preliminary test bracket replaced by flight item
121433 L702 P-Clamp + CB/Backshell	Y		HP-2-ASED-DP-0028 (A)	n.a	preliminary test bracket replaced by flight item
121433 Harness CBs					In total 9 CB, 7 x 9 pole; 2 x 15 pole
121433 H103 CB	3.8.04	PFM		n.a	9 pole
121433 H104 CB	3.8.04	PFM		n.a	9 pole
121433 PPS CB	28.9.04	PFM		n.a	9 pole, preliminary test bracket replaced by flight item
121433 DLCM1 CB	28.9.04	PFM		n.a	(Qty = 2) 1 x 9 pole; 1 x 15 pole, preliminary test bracket replaced by flight item
121433 DLCM2 CB	28.9.04	PFM		n.a	(Qty = 2) 1 x 9 pole; 1 x 15 pole, preliminary test bracket replaced by flight item
21433 L101 conn. bkt. support (P-Clamp)	21.9.04	PFM		n.a	9 pole, preliminary test bracket replaced by flight item
121433 L102 conn. bkt. support (P-Clamp)	21.9.04	PFM		n.a	9 pole, preliminary test bracket replaced by flight item
121433 Pos. 110 Harness-Support 1 Cutout 1	04.01.2005	PFM	2547-121432-16I-01-0A	n. a.	


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121433 Pos. 115 Harness-Support 1 Cutout 1	04.01.2005	PFM	2547-121432-16I-01-0A	n. a.	
121433 Pos. 120 Harness-Support 1 Cutout 2	04.01.2005	PFM	2547-121432-16J-01-0A	n. a.	
121433 Pos. 130 Harness-Support 2 Cutout 2	14.01.2005	PFM	2547-121432-16K-01-0A	n. a.	
121433 Pos. 140 Harness-Support 3 Cutout 2	04.01.2005	PFM	2547-121432-16L-01-0A	n. a.	
121433 Pos. 150 HIFI Harness Bracket	19.07.07	PFM	HP-2-ASED-DW-0211-01-0A (2547-121432-185-01-0A)	n. a.	New drwg. for PFM, positions of venting holes changed. Not installed for STM 2. STM 1 configuration was acc. ASED-DW-0133. Intergation of Harness Rail acc HP-2-ASED-PR-0090(NC-3417 raised)
121433 Pos. 160 Harness-Support 1 Cutout 3	18.01.2005	PFM	2547-121432-16M-01-0A	n. a.	NC-0681: Modification of fixation holes I/F ASED-SD-0101: Rail wrapped with gore-tex
121433 Pos. 170 Harness-Support 2 Cutout 4	18.01.2005	PFM	2547-121432-16O-01-0A	n. a.	NC-0681: Modification of fixation holes I/F ASED-SD-0101: Rail wrapped with gore-tex ASED-SD-0111: Supports thermally decoupled with CFRP washers
121433 Pos. 180 Harness-Support 1 Cutout 4	14.01.2005	PFM	2547-121432-16N-01-0A	n. a.	ASED-SD-0101: Rail wrapped with gore-tex
121433 OB Harness-bracket 1	15.04.05	PFM	2547-121432-16Q-01-0A	n. a.	2 parts
121433 OB Harness-bracket 2	15.04.05	PFM	2547-121432-16R-01-0A	n. a.	
121433 OB Harness-bracket 3	15.04.05	PFM	2547-121432-16S-01-0A	n. a.	3 pcs
121433 OB Harness-bracket 4	15.04.05	PFM	2547-121432-16T-01-0A	n. a.	
121433 OB Harness-bracket 5	18.03.2005	PFM	2547-121432-16U-01-0B	n. a.	NC-0838: reworked to comply with drwg. issue B
121433 OB Harness-bracket 6	15.04.05	PFM	2547-121432-16V-01-0A	n. a.	
121433 OB Harness-	15.04.05	PFM	2547-121432-16W-01-0A	n. a.	

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bracket 7					
121433 Upper SFW harn. CBs	14.12.04	PFM	HP-2-ASED-DP-0028 (A)	na	acc. to HP-2-ASED-DW-0086-01 NC-0842, backshells of connectors had to be turned 180°
121433 TSS Harness supports	21.07.06	PFM	HP-2-ASED-DW-0203- 01-0A	n.a.	new Vespel supports on TSS chains iaw. ASED-SD- 0101
121500 (CFE) LOU Radiator		FM	CFE	y	16.11.2005: removed after TB/TV test Mounted 21.12.05; HP-2-ASED-SD-0030 Iss.1;removed 24.02.06 HP-2-ASED-SD-0042
121510 LOU Baffle+Window Cover (Goggles)		PFM			Mounted 07.07.05, removed on 08.07.05 after negative fit check, ref. NC-1245 Fit check for MLI integration Geiger removed 14.03.2008
121520 LOU Support Structure incl. Support Plate and I/F struts	27.02.2008	PFM SN 158538	HP-2-ECAS-DP-0004, iss. 1, 13.12.04	y	Mating acc. to HP-2-ASED-PR-0024 Wire locking done 02.08.05 Removed 29.03.2006 HP-2-ASED-SD-0053 Fitcheck for Cool Down acc.SD-0251 Removed 15.02.08 H.G. Integration acc. PR-0098 issue 1 / 27.02.08 Geiger Sonn De-Integrated acc. -PR-0098; Geiger Final Integration acc.PR-0098 H.Geiger
121530 HIFI-LOU Windows assy	22.- 25.04.05	PFM, SN see under remarks	HP-2-QMC-AB-0001, Issue 2, 24.01.05	y	Incl. clamps, bolts and o-rings SN: B1/31, B2/28, B3/03, B4/12, B5/13, B6L/21, B6H/22
121530 Alignment windows assy	25.04.05	PFM SN: OA#3, OA#8	"	y	Incl. clamps, bolts and o-rings
121550 LOU Waveguide Assy	12.04.2008	FM, SN 01	HP-2-RYM-AB-0030, issue 1, 31.10.04	y	WG Tapes removed 05.10.05 Lower section removed after TB/TV and re-mounted on 30.11.05; Screws secured with EC 2216; removed 24.03.2006 HP-2-ASED-PR-0053 Fitcheck 12.03.2008 Geiger Final Integration H. Geiger acc. HP-2-ASED-PR-0030- 3 Torqued and secured 12.04.2008 H.G.
121570 LOU-HRN Support Structure	28.03.2006	FM, SN01	HP-2-ASED-DW-0162- 01 issue A, 31.05.05	Y	Brackets -Z & +Z to be removed after mechanical tests at ESTEC (see OW 122) On + Z modify the hole M4 Removed 30.03.06 HP-2-ASED-SD-0053 Partly integrated acc. PR-0030-3 Hengstler 12.03.2008 Final integration acc.PR-0030-3 Geiger
122000 122300 122500 TMS incl. CB`s	12.06.07	PFM-0300	HP-2-ECAS-DP-0009, issue 1, 31.08.05	Y	Integration acc. to HP-2-ASED-SD-0043 NCR generated during Incoming and Integration see NC-1437 NC-1481: Flatness out of tolerance, to be reworked for PFM final installation and alignment check on 12.09.05 Mirror bracket -Z, -Y side installed on 09.09.05 Removed 27.03.06 HP-2-ASED-SD-0042 Final integrated acc.PR-0092 B.K.
122100 TMS Strut	12.06.07	PFM 0166	"	y	TMS/CVV_1 Strut blade at CVV wrongly installed see NC-1437 2 mm shim; Removed 27.03.06 HP-2-ASED-SD-0042 Final integrated acc.PR-0092 B.K.
122100 TMS Strut	12.06.07	PFM 0152	"	y	TMS/CVV_6 1mm shim; Removed 27.03.06 HP-2-ASED-SD-0042 Final integrated acc.PR-0092 B.K.

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122100 TMS Strut	12.06.07	PFM 0151	"	y	TMS/CVV_5 2 mm shim; Removed 27.03.06 HP-2-ASED-SD-0042 Final integrated acc.PR-0092 B.K.
122100 TMS Strut	12.06.07	PFM 0163	"	y	TMS/CVV_4 Strut blade at CVV wrongly installed see NC-1437 2 mm shim; Removed 27.03.06 HP-2-ASED-SD-0042 Final integrated acc.PR-0092 B.K.
122100 TMS Strut	12.06.07	PFM 0154	"	y	TMS/CVV_3 2 mm shim; Removed 27.03.06 HP-2-ASED-SD-0042 Final integrated acc.PR-0092 B.K.
122100 TMS Strut	12.06.07	PFM 0165	"	y	TMS/CVV_2 Strut blade at CVV wrongly installed see NC-1437 2 mm shim Removed 27.03.06 HP-2-ASED-SD-0042 MLI installed for sine test; Final integrated acc.PR-0092 B.K.
122200 MLI on TMS struts	20.03.2008	PFM	HP-2-AAEM-LI-0037, issue draft 2, 01.07.05	y	For sine test only partly installed: on TMS/CVV_2, TMS/CB 3, TMS/CB 4; TMS Removed 27.03.06 HP-2-ASED-SD-0042 Integrated acc.AAEM-PR-0004 Iss.5
122400 TMS Strut	12.06.07	PFM 0246	HP-2-ECAS-DP-0009, issue 1, 31.08.05	y	TMS/CB 2 Removed 27.03.06 HP-2-ASED-SD-0042 Final integrated acc.PR-0092 B.K.
122400 TMS Strut	12.06.07	PFM 0245	"	y	TMS/CB 1 Removed 27.03.06 HP-2-ASED-SD-0042 Final integrated acc.PR-0092 B.K.
122400 TMS Strut	12.06.07	PFM 0250	"	y	TMS/CB 6 Removed 27.03.06 HP-2-ASED-SD-0042 Final integrated acc.PR-0092 B.K.
122400 TMS Strut	12.06.07	PFM 0249	"	y	TMS/CB 5 Removed 27.03.06 HP-2-ASED-SD-0042 Final integrated acc.PR-0092 B.K.
122400 TMS Strut	12.06.07	PFM 0248	"	y	TMS/CB 4 MLI installed for sine test TMS Removed 27.03.06 HP-2-ASED-SD-0042 Final integrated acc.PR-0092 B.K.
122400 TMS Strut	12.06.07	PFM 0247	"	y	TMS/CB 3 MLI installed for sine test TMS Removed 27.03.06 HP-2-ASED-SD-0042 Final integrated acc.PR-0092 B.K.
123110 Solar Array Structure	10.04.2008	FM	HP-2-DSSA-DP-0001, issue 1, Aug. 2005	pending	Finally installed on 19.12.2005 HP-2-ASED-TP-0085 Iss.2 Removed 01.03.2006 HP-2-ASED-SD-0042 Final Integration acc. TP-0161 T.B.
123112 Strut 1 HSS/SVM	10.04.2008	S/N 0101	HP-2-ECAS-DP-0008, issue 1, 03.08.05	Y	NC-1602: HSS STM sine test aborted, dampers introduced on struts 1-12. Dampers are mounted. Removed 01.03.2006 HP-2-ASED-SD-0042;final integration of Dampers 23.08.2007 R.Hengstler acc. DW 2547-123130-500-01-0B Final Integration acc. TP-0161 T.B.
123112 Strut 2 HSS/SVM	10.04.2008	S/N 0202	HP-2-ECAS-DP-0008, issue 1, 03.08.05	Y	NC-1602: HSS STM sine test aborted, dampers introduced on struts 1-12. Dampers are mounted. Removed 01.03.2006 HP-2-ASED-SD-0042 final integration of Dampers 23.08.2007 R.Hengstler acc. DW 2547-123130-500-01-0B Final Integration acc. TP-0161 T.B.
123112 Strut 3 HSS/SVM	10.04.2008	S/N 0203	HP-2-ECAS-DP-0008, issue 1, 03.08.05	Y	NC-1602: HSS STM sine test aborted, dampers introduced on struts 1-12. Dampers are mounted. Removed 01.03.2006 HP-2-ASED-SD-0042 final integration of Dampers 23.08.2007 R.Hengstler acc. DW 2547-123130-500-01-0B Final Integration acc. TP-0161 T.B.
123112 Strut 4 HSS/SVM	10.04.2008	S/N 0104	HP-2-ECAS-DP-0008, issue 1, 03.08.05	Y	NC-1602: HSS STM sine test aborted, dampers introduced on struts 1-12. Dampers are mounted. Removed 01.03.2006 HP-2-ASED-SD-0042 final

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					integration of Dampers 23.08.2007 R.Hengstler acc. DW 2547-123130-500-01-0B Final Integration acc. TP-0161 T.B.
123112 Strut 5 HSS/CVV	10.04.2008	S/N 0405	HP-2-ECAS-DP-0005, issue 1, 31.05.05	Y	NC-1602: HSS STM sine test aborted, dampers introduced on struts 1-12. Dampers are mounted. Removed 01.03.2006 HP-2-ASED-SD-0042 final integration of Dampers 23.08.2007 R.Hengstler acc. DW 2547-123130-500-01-0B Final Integration acc. TP-0161 T.B.
123112 Strut 6 HSS/CVV	10.04.2008	S/N 0306	HP-2-ECAS-DP-0005, issue 1, 31.05.05	Y	NC-1602: HSS STM sine test aborted, dampers introduced on struts 1-12. Dampers are mounted. Removed 01.03.2006 HP-2-ASED-SD-0042 final integration of Dampers 23.08.2007 R.Hengstler acc. DW 2547-123130-500-01-0B Final Integration acc. TP-0161 T.B.
123112 Strut 7 HSS/CVV	10.04.2008	S/N 0307	HP-2-ECAS-DP-0005, issue 1, 31.05.05	Y	NC-1602: HSS STM sine test aborted, dampers introduced on struts 1-12. Dampers are mounted. Removed 01.03.2006 HP-2-ASED-SD-0042 final integration of Dampers 23.08.2007 R.Hengstler acc. DW 2547-123130-500-01-0B Final Integration acc. TP-0161 T.B.
123112 Strut 8 HSS/CVV	10.04.2008	S/N 0408	HP-2-ECAS-DP-0005, issue 1, 31.05.05	Y	NC-1602: HSS STM sine test aborted, dampers introduced on struts 1-12. Dampers are mounted. Removed 01.03.2006 HP-2-ASED-SD-0042 final integration of Dampers 23.08.2007 R.Hengstler acc. DW 2547-123130-500-01-0B Final Integration acc. TP-0161 T.B.
123120 Sunshade Structure	12.04.2008	FM	HP-2-DSSA-DP-0001, issue 1, Aug. 2005	pending	Final Installation on 19.12.2005 HP-2-ASED-TP-0085 Iss.2 STM shall be refurbished to FM after S/C STM test Removed 01.03.2006 HP-2-ASED-SD-0042 Final Integration acc. TP-0161 T.B.
123122 Strut 9 HSS/CVV	12.04.2008	S/N 0109	HP-2-ECAS-DP-0005, issue 1, 31.05.05	Y	NC-1602: HSS STM sine test aborted, dampers introduced on struts 1-12. Dampers are mounted. Removed 01.03.2006 HP-2-ASED-SD-0042 final integration of Dampers 23.08.2007 R.Hengstler acc. DW 2547-123130-500-01-0B Final Integration acc. TP-0161 T.B.
123122 Strut 10 HSS/CVV	12.04.2008	S/N 0210	HP-2-ECAS-DP-0005, issue 1, 31.05.05	Y	NC-1602: HSS STM sine test aborted, dampers introduced on struts 1-12. Dampers are mounted. Removed 01.03.2006 HP-2-ASED-SD-0042 final integration of Dampers 23.08.2007 R.Hengstler acc. DW 2547-123130-500-01-0B Final Integration acc. TP-0161 T.B.
123122 Strut 11 HSS/CVV	12.04.2008	S/N 0211	HP-2-ECAS-DP-0005, issue 1, 31.05.05	Y	NC-1602: HSS STM sine test aborted, dampers introduced on struts 1-12. Dampers are mounted. Removed 01.03.2006 HP-2-ASED-SD-0042 final integration of Dampers 23.08.2007 R.Hengstler acc. DW 2547-123130-500-01-0B Final Integration acc. TP-0161 T.B.
123122 Strut 12 HSS/CVV	12.04.2008	S/N 0112	HP-2-ECAS-DP-0005, issue 1, 31.05.05	Y	NC-1602: HSS STM sine test aborted, dampers introduced on struts 1-12. Dampers are mounted. Removed 01.03.2006 HP-2-ASED-SD-0042 final integration of Dampers 23.08.2007 R.Hengstler acc. DW 2547-123130-500-01-0B Final Integration acc. TP-0161 T.B.
123311 Solar Array MLI	12.04.2008	STM	HP-2-AAEM-LI-0037, issue draft 2, 01.07.05 HP-2-AAEM-DP-0005	Y	Integration of the panel for FM only after refurbishment Removed 01.03.2006 HP-2-ASED-SD-0042 Final Integration acc. TP-0161 T.B.
123322 Sunshade MLI	12.04.2008	STM	HP-2-AAEM-LI-0037, issue draft 2, 01.07.05 HP-2-AAEM-DP-0005	Y	Integration of the panel for FM only after refurbishment Removed 01.03.2006 HP-2-ASED-SD-0042

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					Final Integration acc. TP-0161 T.B.
124100 PLM/SVM I/F Struts	08.07.05 - 20.07.05	PFM	HP-2-ECAS-DP-0002, iss. 1, 01.06.05	y	Mating acc. to HP-2-ASED-PR-0023
124200 PLM/SVM Strut MLI		PFM	HP-2-AAEM-LI-0037, issue draft 2, 01.07.05 HP-2-AAEM-DP-0005	y	Partly disintegrated For sine test MLI was integrated only on 2 Struts: (SN 22 & 23) Removed 21.03.06 5x Struts on +Z Side with MLI
124300 SVM Thermal Shield		PFM	HP-2-ECAS-DP-0007, issue 1.1, 04.08.05	y	Removed after TB/TV test 15.11.05 Re-mounting on 12.01.2006 acc.HP-2-ASED-SD-0031 Iss.1 Release 2 Removal 25.02.2006 HP-2-ASED-SD-0042; Re-mounting for TB/TV Test STM2 acc.SD-0031 15.01.2007; Removed 14.03.2007 acc.SD-0042
124320 SVM Thermal Shield MLI		PFM	HP-2-AAEM-LI-0037, issue draft 2, 01.07.05 HP-2-AAEM-DP-0005	y	Integrated 12.01.2006 for Vibration Removal 25.02.2006 HP-2-ASED-SD-0042 Re-mounting for TB/TV Test STM2 acc.SD-0031 15.01.2007 Removed 14.03.2007 acc.SD-0042
125400 Telescope	16.04.2008	PFM		y	Integrated acc. HP-2-ASED-PR-0108, iss. 1 by ASED with support of ASEF
Temporary Installed Items : MGSE, OGSE, CVSE		PFM	Alenia ABCL tbd	N/A	Mating to PLM according to HP-2-ASED-TP-0087 "1.1" De-Mating 02.03.2006 HP-2-ASED-SD-0042
130000 SVM Grounding lines installed: (SVM) 3000HP207-401 3000HP207-403 3000HP207-405 3000HP207-407		ID NR: 25, 33 ID NR: 27, 35 ID NR: 37 ID NR: 31			Removed on 02.03.2006 acc. To HP-2-ASED-SD-0042
142270 Load cells (Pretension Device)	25.01.2008	MGSE			Re-Integrated after TB/TV Test; Removed for Vibration Test 09.01.2006; installed -Z Side 07.03.2006; Installed on +Z Side 24.03.06 Re-integrated for adjustment of chains on 08.08.06 Removed for TB/TV Test STM2 10.01.2007 acc. SD-0145; covered with protective cap; Protective cap removed and installed the Pretension Device acc. TP-0133 R.Suess 28.02.2007 Removed the Load Cells for Calibration Re-installation acc. TP-0133 Iss.1.4 25.01.2008
142300 Airlock Filling Port / CVV	15.06.07	MGSE			Re-integrated 17.11.05 Removed 12.04.2006; re-integrated SD0113; Removed 21.01.2007 acc. SD-0146; Prep. For TB/TV Test; TB/TV Safety Adapter installed; removed after TB/TV test 27.02.2007 a.. SD-0151 and installed the filling port A.Runge Removed acc.SD-0151; 22.03.2007 Integrated for Leaktest M.L. 15.06.07
142410 HACS Camera +Z		OGSE	HP-2-TER-AB-0001, iss. 2-A, 03.06.05	Y	17.11.2005: removed after TB/TV test Integration for LOU Alignment Measurement before Cool Down acc. SD-0251 Removed after LOU Measurement acc.SD-0251
142410 HACS Camera -Z		OGSE	HP-2-TER-AB-0001, iss. 2-A, 03.06.05	Y	17.11.2005: removed after TB/TV test Integration for LOU Alignment Measurement before Cool Down acc. SD-0251 Removed after LOU Measurement acc.SD-0251

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142410 HACS Harness - 2x power cables - 2x glass fibre cables		OGSE		y	17.11.2005: removed after TB/TV test Integration for LOU Aligment Measurement before Cool Down acc. SD-0251 Removed after LOU Measurement acc.SD-0251
VLD Lifting Brackets (3x)	18.12.2007 10.03.2008	MGSE		Y	Integrated for Transfer to ESTEC 18.12.2007 2 x +Z and -Y Side removed
Deer Head	08.02.2008	MGSE		Y	Integrated with Nozzles Support Structure 08.02.08
Cryo-Cover flushing lines (2x)	10.02.2008 15.03.2008	MGSE		Y	Integrated for Cool Down 10.02.2008 Removed for MLI integration 15.03.2008 Huber / Runge
Vacuum Pump on SV921	10.02.2008	MGSE		Y	Integrated for Cool Down 10.02.2008
Anaconda	10.02.2008	MGSE		Y	Integrated for Cool Down 10.02.2008

End of list

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Annex 2 : SVM Integration Status List

Herschel SVM Integration Status List for final Panels Closure


HP-2-ASED-LI-0033,

issue: 12

Status: 12.04.08


Equipment / CI-No.	Integr. Date	Model, Serial No	ABCL Ref. (or EIDP)	Qualified	Remarks / Open Work / NCR's
SVM Connector Brackets				Y	
311 300 Upper Closure Panel	12.02.2007	FM		Y	
321 100 Upper Closure Panel	12.02.2007	FM		Y	
311 100 Upper Closure Panel	12.02.2007	FM		Y	
311 200 Upper Closure Panel	12.02.2007	FM		Y	
312 100 Upper Closure Panel	12.02.2007	FM		Y	
312 200 Upper Closure Panel	12.02.2007	FM		Y	
316 100 Upper Closure Panel	12.02.2007	FM		Y	
312 300 Upper Closure Panel	12.02.2007	FM		Y	
321 200 Upper Closure Panel	12.02.2007	FM		Y	
321 300 Upper Closure Panel	12.02.2007	FM		Y	
315 100 Upper Closure Panel	12.02.2007	FM		Y	
314 200 Upper Closure Panel	12.02.2007	FM		Y	
313 200 Upper Closure Panel	12.02.2007	FM		Y	
313 100 Upper Closure Panel	12.02.2007	FM		Y	
SVM HIFI					
CI : 111 200 HIFI FHWEH	18.07.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0074 Integrated with Sigraflexpieces under the feets
CI : 111 200 HIFI FHWOH	18.07.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0074
CI : 111 200 HIFI FHLCU	24.07.2007	FLCU-FM 01/06		Y	Integrated acc. HP-2-ASED-PR-0074
CI : 111 200 HIFI FHHRH	24.07.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0074
CI : 111 200 HIFI FHIFH	25.07.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0074

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Equipment / CI-No.	Integr. Date	Model, Serial No	ABCL Ref. (or EIDP)	Qualified	Remarks / Open Work / NCR's
CI : 111 200 HIFI FHIFV	25.07.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0074
CI : 111 200 HIFI FHHRV	25.07.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0074
CI : 111 200 HIFI FHWEV	28.03.2008	WBE: FM PWR supply: FM WBI: FS, Sn 960359		Y	Integrated acc. HP-2-ASED-PR-0074 ASED-NC-3826 WBS-V comb too weak: Removed acc.SD-0237 19.01.2008, integrated acc. ASED-SD-0245, WBI FM replaced by FS (former QM) Removed: 28.03.08 acc. SD-290 Re-integrated: 28.03.08 acc. SD-291
CI : 111 200 HIFI FHWOV	25.07.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0074
CI : 111 200 HIFI FHHRH	25.07.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0074
CI : 111 200 HIFI FHFCU	25.07.2007	FM Drwg. 324- G-7000		Y	Integrated acc. HP-2-ASED-PR-0074
CI: 111 200 HIFI FHLSU	24.07.2007	PF P/N 157704 S/N 4905079		Y	Integrated acc. HP-2-ASED-PR-0074
CI. : 125 100 HIFI-HPDPU	19.02.2007	AVM2 S/N 01		Y	
CI. : 125 100 HIFI-HSDPU	26.02.2007	AVM2 S/N 01		Y	
CI. : 125 100 HIFI-HHICU	05.03.2007	AVM2 S/N 01		Y	Integrated acc. H-P-ED-A-0033
MLI Cover inside HIFI I Panel	01.04.2008	FM		Y	Integrated acc. H-P-4-AAE-PR-2001; iss. 3.B
MLI Cover inside HIFI II Panel	01.04.2008	FM		Y	Integrated acc. H-P-4-AAE-PR-2001; iss. 3.B
HIFI Ripple Box LRF, FM01	01.04.2008	FM01		Y	Integrated acc. HP-ED-AI-0033 by TAS-F
HIFI Ripple Box LRF, FM02	01.04.2008	FM02		Y	Integrated acc. HP-ED-AI-0033 by TAS-F
HIFI I Harness 121432-03-31A	07.05.2007	FM		Y	Integrated acc. H-P-ED-A-0033
HIFI I Harness 121432-03-31B	07.05.2007	FM		Y	Integrated acc. H-P-ED-A-0033
HIFI I Harness 121432-03-31C	07.05.2007	FM		Y	Integrated acc. H-P-ED-A-0033
HIFI I Harness 121432-03-316	07.05.2007	FM		Y	Integrated acc. H-P-ED-A-0033
HIFI I Harness 121432-03-317	07.05.2007	FM		Y	Integrated acc. H-P-ED-A-0033
HIFI I Harness 121432-03-318	07.05.2007	FM		Y	Integrated acc. H-P-ED-A-0033
HIFI I Harness 121432-03-329	07.05.2007	FM		Y	Integrated acc. H-P-ED-A-0033
HIFI II Harness 121432-03-311 SIH-SH-01	04.09.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0078
HIFI II Harness 121432-03-312 SIH-SH-02	04.09.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0078

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HIFI II Harness 121432-03-313 SIH-SH-03	04.09.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0078
HIFI II Harness 121432-03-314 SIH-SH-04	04.09.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0078
HIFI II Harness 121432-03-315 SIH-SH-05	04.09.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0078
Bridging Waveguide HIFI-1; LSU	02.10.2007	FM		Y	Integrated acc. SRON-U/HIFI/PR/2005-009
HIFI Coax Cable (bridges) RF 9 B / RF 10B	07.04.2008	FM		Y	Integrated acc TP-0072 / SD 289 J. Lang
SVM PACS					
Panel *Y-Z (PACS)	06.02.2008	STM			Final closing acc.H-P-PR-AI-0058 Step 640-750 Final closing after PACS Harness Failure Investigations 06.02.2008
CI: PACS HP BOLC	06.07.2007	FM	PACS-ME- DP-003	Y	Integrated acc. HP-2-ASED-PR-0075 With HPPSU S/N 4194;electrical Int.acc.TP-0145
CI: 113 000 PACS FP SPU	11.07.2007	FM; S/N 01	CIDL/ABCL: FPL-CL- 1214-05-CRS	Y	Integrated acc. HP-2-ASED-PR-0075 NCR: HP-113000-ASED-NC-3398 electrical Int.acc.TP-0145
CI: PACS FP DPU	13.07.2007	FM; S/N 01	PACS-ME- DP-003	Y	Integrated acc. HP-2-ASED-PR-0075 electrical Int.acc.TP-0145
CI: PACS HP DECMEC	09.07.2007	FM; P/N 767- 052	PACS-ME- DP-003	Y	Integrated acc. HP-2-ASED-PR-0075 electrical Int.acc.TP-0145
PACS WIH Harness					
CI : 131 100 PACS WIH Harness FPD20_01R	19.02.2007	FM	PACS-NXH- DP-0005	Y	Integrated acc. HP-2-ASED-PR-0077
CI : 131 100 PACS WIH Harness FPD20_02R	19.02.2007	FM	PACS-NXH- DP-0005	Y	Integrated acc. HP-2-ASED-PR-0077
CI : 131 100 PACS WIH Harness FPD20_03R	19.02.2007	FM	PACS-NXH- DP-0005	Y	Integrated acc. HP-2-ASED-PR-0077
CI : 131 100 PACS WIH Harness FPD20_04R	19.02.2007	FM	PACS-NXH- DP-0005	Y	Integrated acc. HP-2-ASED-PR-0077
CI : 131 100 PACS WIH Harness FPD20_05R	19.02.2007	FM	PACS-NXH- DP-0005	Y	Integrated acc. HP-2-ASED-PR-0077
CI : 131 100 PACS WIH Harness FPD20_08R	19.02.2007	FM	PACS-NXH- DP-0005	Y	Integrated acc. HP-2-ASED-PR-0077
CI : 131 100 PACS WIH Harness FPD20_01N	19.02.2007	FM	PACS-NXH- DP-0005	Y	Integrated acc. HP-2-ASED-PR-0077
CI : 131 100 PACS WIH Harness FPD20_03N	19.02.2007	FM	PACS-NXH- DP-0005	Y	Integrated acc. HP-2-ASED-PR-0077
CI : 131 100 PACS WIH Harness FPD20_04N	19.02.2007	FM	PACS-NXH- DP-0005	Y	Integrated acc. HP-2-ASED-PR-0077
CI : 131 100 PACS WIH Harness	19.02.2007	FM	PACS-NXH- DP-0005	Y	Integrated acc. HP-2-ASED-PR-0077


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FPD20_05N					
CI : 131 100 PACS WIH Harness FPD20_06N	19.02.2007	FM	PACS-NXH-DP-0005	Y	Integrated acc. HP-2-ASED-PR-0077
CI : 131 100 PACS WIH Harness FPD20_07N	19.02.2007	FM	PACS-NXH-DP-0005	Y	Integrated acc. HP-2-ASED-PR-0077
CI : 131 100 PACS WIH Harness FPD20_08N	19.02.2007	FM	PACS-NXH-DP-0005	Y	Integrated acc. HP-2-ASED-PR-0077
PACS SIH Harness					
CI : 131 100 PACS SIH Harness 121432-03-331 SIH-SP-01	22.02.2007	FM	HP-2-CASA-DP-0015	Y	Integrated acc. HP-2-ASED-PR-0077
CI : 131 100 PACS SIH Harness 121432-03-332 SIH-SP-02	22.02.2007	FM	HP-2-CASA-DP-0015	Y	Integrated acc. HP-2-ASED-PR-0077
CI : 131 100 PACS SIH Harness 121432-03-333 SIH-SP-03	05.02.2008	FM	HP-2-CASA-DP-0015	Y	Integrated acc. HP-2-ASED-PR-0077 Removed the Harness acc. SD-0247 and re-integrated acc. SD-0235 on 05.02.08 at Estec
CI : 131 100 PACS SIH Harness 121432-03-334 SIH-SP-04	22.02.2007	FM	HP-2-CASA-DP-0015	Y	Integrated acc. HP-2-ASED-PR-0077
CI : 131 100 PACS SIH Harness 121432-03-335 SIH-SP-05	22.02.2007	FM	HP-2-CASA-DP-0015	Y	Integrated acc. HP-2-ASED-PR-0077
CI : 131 100 PACS SIH Harness 121432-03-336 SIH-SP-06	22.02.2007	FM	HP-2-CASA-DP-0015	Y	Integrated acc. HP-2-ASED-PR-0077
CI : 131 100 PACS SIH Harness 121432-03-337 SIH-SP-07	22.02.2007	FM	HP-2-CASA-DP-0015	Y	Integrated acc. HP-2-ASED-PR-0077
CI : 131 100 PACS SIH Harness 121432-03-338 SIH-SP-08	22.02.2007	FM	HP-2-CASA-DP-0015	Y	Integrated acc. HP-2-ASED-PR-0077
CI : 131 100 PACS SIH Harness 121432-03-339 SIH-SP-09	22.02.2007	FM	HP-2-CASA-DP-0015	Y	Integrated acc. HP-2-ASED-PR-0077
CI : 131 100 PACS SIH Harness 121432-03-33A SIH-SP-10	22.02.2007	FM	HP-2-CASA-DP-0015	Y	Integrated acc. HP-2-ASED-PR-0077
CI : 131 100 PACS SIH Harness 121432-03-33B SIH-SP-11	22.02.2007	FM	HP-2-CASA-DP-0015	Y	Integrated acc. HP-2-ASED-PR-0077
CI : 131 100 PACS SIH Harness	22.02.2007	FM	HP-2-CASA-DP-0015	Y	Integrated acc. HP-2-ASED-PR-0077

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121432-03-33C SIH-SP-12					
CI : 131 100 PACS SIH Harness 121432-03-33C SIH-SP-13	22.02.2007	FM	HP-2-CASA- DP-0015	Y	Integrated acc. HP-2-ASED-PR-0077
CI : 131 100 PACS SIH Harness 121432-03-33D SIH-SP-14	22.02.2007	FM	HP-2-CASA- DP-0015	Y	Integrated acc. HP-2-ASED-PR-0077
CI : 131 100 PACS SIH Harness 121432-03-33 ^E SIH-SP-15	22.02.2007	FM	HP-2-CASA- DP-0015	Y	Integrated acc. HP-2-ASED-PR-0077
SVM SPIRE 125200					
Panel -Z (SPIRE/CCU)	19.10.2007	STM			Final closed acc.H-P-PR-AI-0058 Iss.02 Step 260 to 370
CI : 125200 SPIRE DCU Box	04.04.2007	PFM	HP-2-RAL- DP-0004 Iss.2	Y	Integrated acc. HP-2-ASED-PR-0076
CI : 125200 SPIRE DPU Box	03.04.2007	PFM	HP-2-RAL- DP-0004 Iss.2	Y	Integrated acc. HP-2-ASED-PR-0076
CI : 122 200 SPIRE FCU Box	03.04.2007	PFM	HP-2-RAL- DP-0004 Iss.2	Y	Integrated acc. HP-2-ASED-PR-0076
CI : 125200 SPIRE LPU box	12.10.2007	FM	HP-2-RAL- DP-0004 Iss.2	Y	Prepared acc. SD-0186 and final integrated acc.LAM.SSP.SPI.PRC.070911_02 Iss1 Suess R. &A.Koppe& LAM
CI : 121 420 CCU Box	13.02.2007	FM S/N 02143	HP-2-PANT- DP-0571.5		Integrated acc. HP-2-ASED-PR-0076
SPIRE WIH Harness					
CI : 121 220 SPIRE Harness WIH	16.02.2007	FM	SPIRE-SAP- DOC-002787	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P01	04.09.2007	PFM	SPIRE-SAP- DOC-002787	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P02	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P03	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P04	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P05	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P06	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P07	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P08	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P09	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P10	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P11	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073


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CI : 122 300 SPIRE DCU P12	04.09.2007	PFM	SPIRE-SAP-DOC-002787	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P13	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P14	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P15	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P16	04.09.2007	PFM	SPIRE-SAP-DOC-002787	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P17	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P18	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P19	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P20	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P21	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P22	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P23	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P24	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P25	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P26	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P27	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P28	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P29	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P30	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P31	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 300 SPIRE DCU P32	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 100 SPIRE DPU P01	04.09.2007	PFM	SPIRE-SAP-DOC-002787	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 100 SPIRE DPU P02	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 100 SPIRE DPU P03	04.09.2007	PFM		Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 100 SPIRE DPU P04	04.09.2007	PFM	SPIRE-SAP-DOC-002787	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 100 SPIRE DPU P05	04.09.2007	PFM	«	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 100 SPIRE DPU P06	04.09.2007	PFM	«	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 100 SPIRE DPU P07	04.09.2007	PFM	«	Y	Integrated acc. HP-2-ASED-PR-0073

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CI : 122 100 SPIRE DPU P08	04.09.2007	PFM	«	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 100 SPIRE DPU P09	04.09.2007	PFM	«	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 100 SPIRE DPU P10	04.09.2007	PFM	«	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 100 SPIRE DPU P11	04.09.2007	PFM	«	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 100 SPIRE DPU P12	04.09.2007	PFM	«	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 200 SPIRE FCU P01	15.10.2007	PFM	SPIRE-SAP- DOC-002787	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 200 SPIRE FCU P02	15.10.2007	PFM	«	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 200 SPIRE FCU P03	15.10.2007	PFM	«	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 200 SPIRE FCU P04	15.10.2007	PFM	«	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 200 SPIRE FCU P05	15.10.2007	PFM	«	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 200 SPIRE FCU P06	15.10.2007	PFM	«	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 200 SPIRE FCU P07	15.10.2007	PFM	«	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 200 SPIRE FCU P08	15.10.2007	PFM	«	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 200 SPIRE FCU P09	15.10.2007	PFM	«	Y	Integrated on FCU by SPIRE
CI : 122 200 SPIRE FCU P10	15.10.2007	PFM	«	Y	Integrated on FCU by SPIRE
CI : 122 200 SPIRE FCU P11	04.09.2007	PFM	«	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 200 SPIRE FCU P12	04.09.2007	PFM	SPIRE-SAP- DOC-002787	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 200 SPIRE FCU P13	15.10.2007	PFM	«	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 200 SPIRE FCU P14	15.10.2007	PFM	«	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 200 SPIRE FCU P17	15.10.2007	PFM	«	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 200 SPIRE FCU P18	15.10.2007	PFM	«	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 200 SPIRE FCU P19	15.10.2007	PFM	«	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 200 SPIRE FCU P20	15.10.2007	PFM	«	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 200 SPIRE FCU P21	15.10.2007	PFM	«	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 200 SPIRE FCU P22	15.10.2007	PFM	«	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 200 SPIRE FCU P23	04.09.2007	PFM	«	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 200 SPIRE FCU P24	04.09.2007	PFM	«	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 200 SPIRE FCU P25	04.09.2007	PFM	«	Y	Integrated acc. HP-2-ASED-PR-0073

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CI : 122 200 SPIRE FCU P26	04.09.2007	PFM	«	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 200 SPIRE FCU P29	15.10.2007	PFM	«	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 200 SPIRE FCU P30	15.10.2007	PFM	«	Y	Integrated acc. HP-2-ASED-PR-0073
CI : 122 200 SPIRE FCU P31	15.10.2007	PFM	«	Y	Integrated on FCU by SPIRE
CI : 122 200 SPIRE FCU P32	15.10.2007	PFM	«	Y	Integrated on FCU by SPIRE
CI : 122 200 SPIRE FCU P33	15.10.2007	PFM	«	Y	Integrated on FCU by SPIRE
CI : 122 200 SPIRE FCU P34	15.10.2007	PFM	«	Y	Integrated on FCU by SPIRE
CI : 122 200 SPIRE FCU P35	15.10.2007	PFM	«	Y	Integrated on FCU by SPIRE
CI : 122 200 SPIRE FCU P29 to LPU P43	15.10.2007	PFM	«	Y	Harness modified acc. SPIRE –RAL-PRJ-000608 Iss1.4-
CI : 122 200 SPIRE FCU P30 to LPU P44	15.10.2007	PFM	«	Y	Harness modified acc. SPIRE –RAL-PRJ-000608 Iss1.4
CI : 122 200 SPIRE DB04 P01 to LPU P41	15.10.2007	PFM	«	Y	Harness modified acc. SPIRE –RAL-PRJ-000608 Iss1.4
CI : 122 200 SPIRE DB04 P02 to LPU P42	15.10.2007	PFM	«	Y	Harness modified acc. SPIRE –RAL-PRJ-000608 Iss1.4
CCU Harness					
CI : 214 100 CCU-A P01	13.09.2007	FM	SPIRE-SAP- DOC-002787		Final Integrated acc. PR-0073
CI : 214 100 CCU-A P02	13.09.2007	FM	«		Final Integrated acc. PR-0073
CI : 214 100 CCU-A P03	13.09.2007	FM	«		Final Integrated acc. PR-0073
CI : 214 100 CCU-A P04	13.09.2007	FM	«		Final Integrated acc. PR-0073
CI : 214 100 CCU-A P05	13.09.2007	FM	«		Final Integrated acc. PR-0073
CI : 214 100 CCU-A P06	13.09.2007	FM	«		Final Integrated acc. PR-0073
CI : 214 100 CCU-A P07	13.09.2007	FM	«		Final Integrated acc. PR-0073
CI : 214 100 CCU-A P08	13.09.2007	FM	«		Final Integrated acc. PR-0073
CI : 214 100 CCU-A P09	13.09.2007	FM	«		Final Integrated acc. PR-0073
CI : 214 100 CCU-A P10	13.09.2007	FM	«		Final Integrated acc. PR-0073
CI : 214 100 CCU-A P11	13.09.2007	FM	«		Final Integrated acc. PR-0073
CI : 214 100 CCU-A P12	13.09.2007	FM	«		Final Integrated acc. PR-0073
CI : 214 100 CCU-A P13	13.09.2007	FM	SPIRE-SAP- DOC-002787		Final Integrated acc. PR-0073
CI : 214 100 CCU-B P01	13.09.2007	FM	«		Final Integrated acc. PR-0073
CI : 214 100 CCU-B P02	13.09.2007	FM	«		Final Integrated acc. PR-0073

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CI : 214 100 CCU-B P03	13.09.2007	FM	«		Final Integrated acc. PR-0073
CI : 214 100 CCU-B P04	13.09.2007	FM	«		Final Integrated acc. PR-0073
CI : 214 100 CCU-B P05	13.09.2007	FM	«		Final Integrated acc. PR-0073
CI : 214 100 CCU-B P06	13.09.2007	FM	«		Final Integrated acc. PR-0073
CI : 214 100 CCU-B P07	13.09.2007	FM	«		Final Integrated acc. PR-0073
CI : 214 100 CCU-B P08	13.09.2007	FM	«		Final Integrated acc. PR-0073
CI : 214 100 CCU-B P09	13.09.2007	FM	«		Final Integrated acc. PR-0073
CI : 214 100 CCU-B P10	13.09.2007	FM	«		Final Integrated acc. PR-0073
CI : 214 100 CCU-B P11	13.09.2007	FM	«		Final Integrated acc. PR-0073
CI : 214 100 CCU-B P12	13.09.2007	FM	«		Final Integrated acc. PR-0073
CI : 214 100 CCU-B P13	13.09.2007	FM	«		Final Integrated acc. PR-0073
SPIRE SIH Harness 121432-03-32B	04.04.2007	FM		Y	Preintegrated acc. HP-2-ASED-PR-0073
SPIRE SIH Harness 121432-03-32A	04.04.2007	FM		Y	Preintegrated acc. HP-2-ASED-PR-0073
SPIRE SIH Harness 121432-03-32C	04.04.2007	FM		Y	Preintegrated acc. HP-2-ASED-PR-0073
SPIRE SIH Harness 121432-03-321	04.04.2007	FM		Y	Preintegrated acc. HP-2-ASED-PR-0073
SPIRE SIH Harness 121432-03-322	04.04.2007	FM		Y	Preintegrated acc. HP-2-ASED-PR-0073
SPIRE SIH Harness 121432-03-323	04.04.2007	FM		Y	Preintegrated acc. HP-2-ASED-PR-0073
SPIRE SIH Harness 121432-03-324	04.04.2007	FM		Y	Preintegrated acc. HP-2-ASED-PR-0073
SPIRE SIH Harness 121432-03-325	04.04.2007	FM		Y	Preintegrated acc. HP-2-ASED-PR-0073
SPIRE SIH Harness 121432-03-326	04.04.2007	FM		Y	Preintegrated acc. HP-2-ASED-PR-0073
SPIRE SIH Harness 121432-03-327	04.04.2007	FM		Y	Preintegrated acc. HP-2-ASED-PR-0073
SPIRE SIH Harness 121432-03-328	04.04.2007	FM		Y	Preintegrated acc. HP-2-ASED-PR-0073
SPIRE SIH Harness 121432-03-329	04.04.2007	FM		Y	Preintegrated acc. HP-2-ASED-PR-0073
Panel +Y+Z (TT&C)	09.11.2007	STM			Final closure acc.H-P-PR-AI-0058 Iss.02 Step 500 to 630
CI : 341 000 Transponder	12.06.2007	FM5 ; S/N 006	H-P-4-AEO- 2600, iss. 01	Y	
Waveguide LGA 1	12.04.08	FM SN 001			Provisional Integrated 12.04.2008 R.S.
Waveguide LGA 2	12.04.08	FM SN002			Provisional Integrated 12.04.2008 R.S.
Waveguide MGA	12.04.08	FM SN003			Provisional Integrated 12.04.2008 R.S.
Panel +Z (VMC)	04.04.2008	STM			Final closure acc.H-P-PR-AI 0058

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Panel -Y+Z(RW)	04.04.2008	STM			Final closure acc.H-P-PR-AI 0058
Panel -Y (HIFI1)	02.04.2008	STM			Final closure acc.H-P-PR-AI 0058
Panel -Y-Z(HIFI2)	02.04.2008	STM			Final closure acc.H-P-PR-AI 0058
Panel +Y (PWR)	03.04.2008	FM			Final closure acc.H-P-PR-AI 0058
CI : 361 000 PCDU	21.05.2007	FM3; S/N 004		Y	
CDMU	Y				
ACC	Y				
BAT	Y				
Harness					
CI : 121 431 CCH SVM Harness 121431-03-311 SCA-10	15.02.2007	FM	HP-2-CASA- DP-0012	Y	Preintegrated acc. HP-2-ASED-PR-0073
CI : 121 431 CCH SVM Harness 121431-03-311 SCA-11	15.02.2007	FM	HP-2-CASA- DP-0012	Y	Preintegrated acc. HP-2-ASED-PR-0073
CI : 121 431 CCH SVM Harness 121431-03-311 SCA-12	15.02.2007	FM	HP-2-CASA- DP-0012	Y	Preintegrated acc. HP-2-ASED-PR-0073
CI : 121 431 CCH SVM Harness 121431-03-311 SCA-31	15.02.2007	FM	HP-2-CASA- DP-0012	Y	Preintegrated acc. HP-2-ASED-PR-0073
CI : 121 431 CCH SVM Harness 121431-03-311 SCA-32	15.02.2007	FM	HP-2-CASA- DP-0012	Y	Preintegrated acc. HP-2-ASED-PR-0073
CI : 121 431 CCH SVM Harness 121431-03-311 SCA-33	15.02.2007	FM	HP-2-CASA- DP-0012	Y	Preintegrated acc. HP-2-ASED-PR-0073
CI : 121 431 CCH SVM Harness 121431-03-311 SCA-34	15.02.2007	FM	HP-2-CASA- DP-0012	Y	Preintegrated acc. HP-2-ASED-PR-0073
CI : 121 431 CCH SVM Harness 121431-03-312 SCA-10	15.02.2007	FM	HP-2-CASA- DP-0012	Y	Preintegrated acc. HP-2-ASED-PR-0073
CI : 121 431 CCH SVM Harness 121431-03-312 SCA-11	15.02.2007	FM	HP-2-CASA- DP-0012	Y	Preintegrated acc. HP-2-ASED-PR-0073
CI : 121 431 CCH SVM Harness 121431-03-312 SCA-12	15.02.2007	FM	HP-2-CASA- DP-0012	Y	Preintegrated acc. HP-2-ASED-PR-0073
CI : 121 431 CCH SVM Harness 121431-03-312 SCA-31	15.02.2007	FM	HP-2-CASA- DP-0012	Y	Preintegrated acc. HP-2-ASED-PR-0073

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CI : 121 431 CCH SVM Harness 121431-03-312 SCA-32	15.02.2007	FM	HP-2-CASA- DP-0012	Y	Preintegrated acc. HP-2-ASED-PR-0073
CI : 121 431 CCH SVM Harness 121431-03-312 SCA-33	15.02.2007	FM	HP-2-CASA- DP-0012	Y	Preintegrated acc. HP-2-ASED-PR-0073
CI : 121 431 CCH SVM Harness 121431-03-312 SCA-34	15.02.2007	FM	HP-2-CASA- DP-0012	Y	Preintegrated acc. HP-2-ASED-PR-0073
DECMEC Harness	20.02.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0077
DBH4 LCP I/F-CB P01	02.10.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0078
DBH4 LCP I/F-CB P02	02.10.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0078
DBH4 LCP I/F-CB P03	02.10.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0078
DBH4 LCP I/F-CB P04	02.10.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0078
DBH4 LCP I/F-CB P05	02.10.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0078
DBH4 LCP I/F-CB P06	02.10.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0078
DBH4 LCP I/F-CB P07	02.10.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0078
FH LSU Harness P01	02.10.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0078
FH LSU Harness P02	02.10.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0078
FH LSU Harness P03	02.10.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0078
FH LSU Harness P04	02.10.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0078
FH LSU Harness P05	02.10.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0078
FH LSU Harness P06	02.10.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0078
FH LSU Harness P07	02.10.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0078
FH LSU Harness P08	02.10.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0078
FH LSU Harness P09	02.10.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0078
FH LSU Harness P10	02.10.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0078
Coaxcables SIH SH 21 P03	01.10.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0143
Coaxcables SIH SH 22 P04	01.10.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0143
Coaxcables SIH SH 23 P01	01.10.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0143
Coaxcables SIH SH 24 P02	01.10.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0143
Coaxcable HIFI-1 LSU P10 RF-8a	01.10.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0078 Re-routed

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Coaxcable HIFI-1 LSU P09 RF-7	01.10.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0078 Re-routed
Coaxcable HIFI-1 LSU P07 RF-5	01.10.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0078 Re-routed
Coaxcable HIFI-1 LSU P06 RF-6a	01.10.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0078 Re-routed
Accelerometers				Y	
331 + Y panel (power)	13.08.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
334 + Y panel (power)	13.08.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
335 + Y panel (power)	13.08.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
336 + Y panel (power)	13.08.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
337 + Y panel (power)	13.08.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
338 + Y panel (power)	13.08.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
341 + Y - Z panel (PACS)	13.08.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
342 + Y - Z panel (PACS)	13.08.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
361 - Y - Z panel (HIFI-2)	13.08.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099 (w ill be removed after Vibration Test)
362 - Y - Z panel (HIFI-2)	13.08.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
365 - Y - Z panel (HIFI-2)	13.08.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
371 - Y panel (HIFI-1)	13.08.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
372 - Y panel (HIFI-1)	13.08.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
373 - Y panel (HIFI-1)	13.08.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
374 - Y panel (HIFI-1)	13.08.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
375 - Y panel (HIFI-1)	13.08.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
376 - Y panel (HIFI-1)	13.08.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
453 - Z + Y shearwall	13.08.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
514 Cone	13.08.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
523 Cone	13.08.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
531 Cone	13.08.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099 (w ill be removed after Vibration Test)
532 Cone	13.08.2007	FM		Y	Integrated acc. To HP-2-ASED-PR-0099
535 Cone	13.08.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
702 Upper closure panel	13.08.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099 (w ill be removed after Vibration Test)

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706 Upper closure panel	13.08.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099 (w ill be removed after Vibration Test)
811 P/L Subplatform	13.08.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
351 - Z panel (SPIRE)	22.08.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
453 - Z + Y Shearwall	22.08.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
211 Thermal Closing and Baffle	04.09.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
312 + Z panel	04.09.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
321 + Y + Z panel	04.09.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
322 +Y + Z panel	04.09.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
323 +Y + Z panel	04.09.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
324 +Y + Z panel	04.09.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
381 -Y + Z panel	04.09.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
312 + Z panel	04.09.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
382 -Y + Z panel	04.09.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
383 -Y + Z panel	04.09.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
384 -Y + Z panel	04.09.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
383 -Y + Z panel	04.09.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
386 -Y + Z panel	04.09.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
412 +Z -Y panel	04.09.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
424 +Z +Y panel shearwall	04.09.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
423 +Z +Y panel shearwall	04.09.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
432 +Z +Y panel shearwall	04.09.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
921 STR Assembly	05.09.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
923 STR Assembly	19.02.08	FM		Y	Integrated acc. HP-2-ASED-PR-0099 New glued at STRA by Hengstler
425 +Z +Y panel shearwall (external)	05.09.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
426 +Z +Y panel shearwall (external)	05.09.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
623 Tanks	05.09.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099
627 Tanks	05.09.2007	FM		Y	Integrated acc. HP-2-ASED-PR-0099

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Equipment / CI-No.	Integr. Date	Model, Serial No	ABCL Ref. (or EIDP)	Qualified	Remarks / Open Work / NCR's
Thermistors					
THM 52	06.08.2007	FM; 0504A0221		Y	Integrated acc. H-P-ED-AI-0033
THM 100	06.08.2007	FM; 0504A0223		Y	Integrated acc. H-P-ED-AI-0033
THM 53	06.08.2007	FM; 0504A0029		Y	Integrated acc. H-P-ED-AI-0033
THM 101	06.08.2007	FM; 0504A0235		Y	Integrated acc. H-P-ED-AI-0033
THM 149	06.08.2007	FM; 0504A0240		Y	Integrated acc. H-P-ED-AI-0033
THM 54	06.08.2007	FM; 0504A0093		Y	Integrated acc. H-P-ED-AI-0033
THM 102	06.08.2007	FM; 0504A0137		Y	Integrated acc. H-P-ED-AI-0033
THM 150	06.08.2007	FM; 0504A0201		Y	Integrated acc. H-P-ED-AI-0033
THM 56	06.08.2007	FM; 0504A0202		Y	Integrated acc. H-P-ED-AI-0033 Swaped with THM 104 (see: NC-3598)
THM 104	06.08.2007	FM; 0504A0209		Y	Integrated acc. H-P-ED-AI-0033 Swaped with THM 56 (see: NC-3598)
THM 152	06.08.2007	FM; 0504A0217		Y	Integrated acc. H-P-ED-AI-0033
THM 58	18.04.2007	FM; 0504A0155		Y	Integrated acc. H-P-ED-AI-0033
THM 106	18.04.2007	FM; 0504A0241		Y	Integrated acc. H-P-ED-AI-0033
THM 154	18.04.2007	FM; 0504A0058		Y	Integrated acc. H-P-ED-AI-0033
THM 61	08.08.2007	FM; 0504A0065		Y	Integrated acc. H-P-ED-AI-0033
THM 109	08.08.2007	FM; 0504A0066		Y	Integrated acc. H-P-ED-AI-0033
THM 157	08.08.2007	FM; 0504A0092		Y	Integrated acc. H-P-ED-AI-0033
THM 63	24.01.2008	FM; 2403		Y	Integrated acc. H-P-ED-AI-0033; Removed acc. FHWEV repair and re-integrated new one acc. AI-0033 at ESTEC 24.01.2008
THM 111	24.01.2008	FM; 2698		Y	Integrated acc. H-P-ED-AI-0033; Removed acc. FHWEV repair and re-integrated new one acc. AI-0033 at ESTEC 24.01.2008
THM 159	24.01.2008	FM; 2438		Y	Integrated acc. H-P-ED-AI-0033; Removed acc. FHWEV repair and re-integrated new one acc. AI-0033 at ESTEC 24.01.2008
THM 65	09.08.2007	FM; 0504A0174		Y	Integrated acc. H-P-ED-AI-0033
THM 113	09.08.2007	FM; 0504A0182		Y	Integrated acc. H-P-ED-AI-0033
THM 161	09.08.2007	FM; 0504A0183		Y	Integrated acc. H-P-ED-AI-0033
THM 66	09.08.2007	FM; 0504A0164		Y	Integrated acc. H-P-ED-AI-0033
THM 114	09.08.2007	FM; 0504A0168		Y	Integrated acc. H-P-ED-AI-0033
THM 162	09.08.2007	FM; 0504A0171		Y	Integrated acc. H-P-ED-AI-0033

Equipment / CI-No.	Integr. Date	Model, Serial No	ABCL Ref. (or EIDP)	Qualified	Remarks / Open Work / NCR's
THM 67	09.08.2007	FM; 0504A0147		Y	Integrated acc. H-P-ED-AI-0033
THM 115	09.08.2007	FM; 0504A0148		Y	Integrated acc. H-P-ED-AI-0033
THM 163	09.08.2007	FM; 0504A0154		Y	Integrated acc. H-P-ED-AI-0033
THM 68	09.08.2007	FM; 0504A0193		Y	Integrated acc. H-P-ED-AI-0033
THM 116	09.08.2007	FM; 0504A0198		Y	Integrated acc. H-P-ED-AI-0033
THM 164	09.08.2007	FM; 0504A0199		Y	Integrated acc. H-P-ED-AI-0033
THM 76	09.08.2007	FM; 0504A0040		Y	Integrated acc. H-P-ED-AI-0033
THM 124	09.08.2007	FM; 0504A0057		Y	Integrated acc. H-P-ED-AI-0033
THM 172	09.08.2007	FM; 0504A0047		Y	Integrated acc. H-P-ED-AI-0033
Star Tracker					
Star Tracker STR 1	06.11.2007	FM1;S/N 05		Y	Integrated acc. H-P-PR-AI-0083 06.11.2007 integrated by Hengstler/Schmidt
Star Tracker STR 2	22.11.2007	FM 2; S/N 02		Y	Integrated acc. H-P-PR-AI-0083 22.11.2007 integrated by Thales Alenia Space
Star Tracker Baffle		PFM			
SVM MLI 321000		PFM	H-P-4- AAE- DP-2005		MLI Integrated acc. H-P-4-AAE-PR- 2001 Iss. 3B UCP on +Z before HSS Integrated 09.04.08 RW & VMC Panel finally closed 09.04.08 TT&C Panel finally closed 10.04.08 SPIRE Panel finally closed 11.04.08 PWR Panel finally closed 14.04.08 HIFI 1 Panel finally closed 14.04.08 HIFI 2 Panel finally closed 14.04.08 PACS Panel finally closed 14.04.08
Test instrumentation					
Herschel PFM SVM TCP Instrumentation Harness Panel internal	18.01.08	see H-P- TN-AI- 0135_2 as run	HP-2- ASED- RP-0242		HP-2-ASED-TN-0163, TC location acc. to H-P-TN-AI-0135_2
Herschel PFM					

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Equipment / CI-No.	Integr. Date	Model, Serial No	ABCL Ref. (or EIDP)	Qualified	Remarks / Open Work / NCR's
SVM TCP Instrumentation Harness Panel external					
Temporary Installed Items					
EMC test adaptor on PWR Panel SK 01 A Jo4 (without Label)		EGSE	Fig. 6-5 of HP-2-ASED-TP-0155_1.1	n.a.	Temporarily installed for EMC test, remains installed for transport to ETS Removed: 28.03.2008 by A. Grasl

End of list

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Annex 3 : Calibration Status List

EGSE	UNIT NAME	Manufacturer	P/N or Model	S/N	TAS-I C.I	TAS-I ID & Calibration		
						Instrument n. (SSS)	Calibration performed	Calibration expires
BCE SCOE	DC electronic load simulator	Agilent	6050A	3620A04731	3A2140-23.1.06	6344	30.01.2008	30.01.2009
BCE SCOE	DC power supply	Agilent	6654A	MY40001318	3A2140-23.1.05	6819	30.01.2008	30.01.2009
BS SCOE	DC electronic load simulator	Agilent	6060B	US37350708	3A2140-22.1.11	4002	30.01.2008	30.01.2009
BS SCOE	DC power supply	Agilent	6674A	3637A01524	3A2140-22.1.10	301	30.01.2008	30.01.2009
TT&C SCOE	Signal generator 9KHz - 3.3GHz SML03	Rhode & Schwarz	1090.3000.13	101398	3A2150.1.13	6297	31.01.2008	31.01.2009
TT&C SCOE	Signal generator 9KHz - 3.3GHz SML03	Rhode & Schwarz	1090.3000.13	101399	3A2150.1.8	6295	31.01.2008	31.01.2009
TT&C SCOE	Signal generator 9KHz - 3.3GHz SML03	Rhode & Schwarz	1090.3000.13	101400	3A2150.1.14	6296	31.01.2008	31.01.2009
TT&C SCOE	ESG series signal generator 250MHz - 4GHZ	Agilent	E4422B	MY43350106	3A2150.1.12	6290	31.01.2008	31.01.2009
TT&C SCOE	Network analyser 10KHz-180MHz	Agilent	E5100A	MY40500710	3A2150.1.11	6288	01.02.2008	01.02.2009
TT&C SCOE	EPM Series Power Meter	Agilent	E4416B	GB43313104	3A2150.1.5	6287	01.02.2008	01.02.2009
TT&C SCOE	20MHz Function/Arbitrary Waveform Generator	Agilent	33220A	MY40500710	3A2150.1.6	6948	01.02.2008	01.02.2009
TT&C SCOE	FSP Spectrum analyser 9KHz - 13.6GHz	Rhode & Schwarz	1164.4391.13	100018	3A2150.1.4	6294	01.02.2008	01.02.2009

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Annex 4 : Software Configurations

Item	SW Module / Unit	SW Release
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SVM	CDMU	3.4
	ACMS/ACC	3.7
HIFI	ICU Main - partition 1	5.4.0
	ICU Main - partition 2	5.2.0
	ICU Redundant - partition 1	5.4.0
	ICU Redundant - partition 2	5.2.0
SPIRE	DPU Main - partition 1	2.2.H
	DPU Main - partition 2	2.2.H
	DPU Redundant - partition 1	2.2.H
	DPU Redundant - partition 2	2.2.H
PACS	SPU	13.8
	DPU Main - partition 1	8.48
	DPU Main - partition 2	8.49
	DPU Redundant - partition 1	8.48
	DPU Redundant - partition 2	8.49
	DECMEC	6.020


HPSDB	HPSDB Central Site	3.3.1.30
	HPSDB delivery to ASED	R_TM_HERSCH_FM9_C_804111950

CCS - Set 2	hpccs	2.0-1219
MOIS		5.03.15
ACMS SCOE	asim - acmssim-Systemtest	1.5-1
	asim - acmssim-acms	2.11-1
	atsup - acmstsup-v0plus-newdb	1.0-1
	atsup - acmstsup-scoesystem	3.4-10
	atsup - acmstsup-tutorial	1.0-1
	atsup - acmstools	0.4-1
	atsup - hpccs	2.0-637
	atsup - hpccs-demo	0.0-748
	atsup - hpccs-plotter	0.0-471
TM/TC DFE - Set 3	Herschel-Planck TM/TC FE	2.11.07
	System Controller	2.11.5.453

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	CMS GUI	2.11.05
	TM/TC Config tool	1.1.4.0
	TM/TC Remote Interface (PIPE)	1.4.2.0
	Generic SLNGT NDIU Lite I/F	v1.2.2.36
	FIRMWARE	0616 issue3 rev4
	BHC Baseband hardware controller	1.5.0.76
	Archive Manager	2.1.7.314
CDMU SCOE - Set 3	SSBV SW version - CMS	2.2.1.0
	PIPE INTERFACE	2.1.0.0
	Archive Browser	2.2.2.72
	IPC handler object implementation	2.4.0.18
BUS MONITOR	SSBV SW version	1.11.1.87
	REMOTE INTERFACE - PIPE I/F	1.2.1.0
TT&C SCOE	Siemens SW Version	1.21 r 0
	Tcl/Tk	8.4/8.4
SAS SCOE - Set 3	Siemens SW Version	1v9 r5
	CDMIF	1.3
	Tcl/Tk	8.4/8.4
	HPIB	2.5
	TclUtil	1.05
	DAQ	1.35
	ELGAR	3.02.010
BS SCOE - Set 3	Siemens SW Version	1v9 r 3
	CDMIF	1.4
	Tcl/Tk	8.4/8.4
	HPIB	2.5
	TclUtil	1.05
	DAQ	1.26
BCE - Set 3	Siemens SW Version	1v6 r2
	CDMIF	1.1
	Tcl/Tk	8.4/8.4
	HPIB	2.5
	TclUtil	1.05
	DAQ	1.32
CRYO PFM SCOE	TAS-A H/W version	ABSp-HW-1801-AAAA-0001
	TAS-A SW Version of CRYO PFM	1.1.2


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	TAS-A SW Version of CRYO RPFM	1.0.4
	NI Version LabVIEW	7.0

Attachment 3 to Section 6.1.x:

MOMs

Minutes of Meeting Mode Transitions PTS
3/06/08, H-P-TASF-MN-10418

	IST1 Part2 PTS : Mode Transition	REF.: H-P-TASF-MN-10418	
		HERSCHEL FM	
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PURPOSE :
IST1 Part 2 PTS : Mode Transition

CLASSIFICATION :

ATTENDEES	FIRM	SIGNATURE	ATTENDEES	FIRM	SIGNATURE
S Mooney	TASF		A. Gatti	ESA	
J. Hall	TASF		G. Beaufiles	TASF	
C. Much	ASED		F. Chatte	TASF	
O. Martin	ASED				
WRITTEN BY : J. Hall			Chair: J. Hall		


CONCLUSION :
All mode transitions (apart from EAM-SAM) were considered successful with a small number of anomalies which require further evaluation but do not impact the success of the test.

The EAM to SAM transition was deemed successful but this section should be re-executed with the new SW (CDMS v 3.6 + DB) to verify correct OBCP operation. This is expected to be delivered 31/7/2008) and must be verified before thermal vacuum tests.


This test shall be run as part of the software upgrade confidence tests (2-5/8/2008) or when a new version of the DB is available resolving the OBCP issues.

DISTRIBUTION : ATTENDEES	FOR FURTHER ACTION :	See MoM and action item table at end of minutes
	FOR INFORMATION :	ASED : TAS-F : ESA:

APPROVED BY				
NAME	J. Hall	S. Mooney	A. Gatti	
SIGNATURE				

	IST1 Part2 PTS : Mode Transition	REF.: H-P-TASF-MN-10418	
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	ACTION
<p><u>Introduction</u></p> <p>This Meeting Covers the IST1 part 2 Mode Transitions testing performed on 30th April - 3rd May 2008.</p> <p>These meetings shall be held after the completion of the execution of the each test case.</p> <p>Agenda:</p> <ol style="list-style-type: none"> 1. Identification of Test Item 2. Status of the Procedure 3. Raised Anomalies 4. Deviations from the test 5. Test evaluation 6. AOB 7. Conclusion 	
<p style="text-align: center;">Identification of the test item</p> <p>Session ID : 2008_04_30_16_50_herdmu_hpws22_REALTIME_MOD_TRA_1 Session was where there was a ACMS SCOE problem. No meaningful testing was performed during this session and this session will not form part of the post test analysis.</p> <p>2008_04_30_16_50_herdmu_hpws22_REALTIME_MOD_TRA_2</p> <p><u>After restart</u> 2008_05_03_08_07_herdmu_hpws22_REALTIME_MOD_TRA_3</p> <p>Session Tag: IST_1_PART2_TP_0189_iss3_MODE_Transition</p> <p>Baseline As Built configuration including deviations to the nominal configuration are listed in: H-P-TASF-MN-10392 (TRR MOM)</p>	
<p style="text-align: center;">Status of the Procedure</p> <ul style="list-style-type: none"> • HP-2-ASED-TP-0134 Leading Procedure iss 4 (signed) • Mode Transition HP-2-ASED-TP-189 iss 2 (signed) • Instruments Procedure HP-2-ASED-TP-206 iss 1.2 (not fully signed) 	

	IST1 Part2 PTS : Mode Transition	REF.: H-P-TASF-MN-10418	
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The test was executed against the red marked issue 6 of the IST specification (see TRR minutes)

Leading Procedure :

PVS #1: Start the thermistor val

Mode Transition:

Red marks were made to the procedure

36 PVS were raised during the test

PVS#1: Reset to 150Kbps
Reset after Launch/launch due to SPR 464/66.

TASF (FS) to clarify that the 150Kbps for TM is correct (with TASF (GB) providing information as to whether both the Transponder and encoder are set correctly)

#1 Run Script to log Thermistor valves (started 30-04-08)

2 Improve BSW Alarm Event explanation

#3 Avoid loss of data after night shift memory dump

#4 Insert additional comment in test step 38


#5 Insert additional comment in test step 3 (TP-206) HIFI start up

6 Insert additional comment in test step 3 (TP-206) HIFI start up


7 Missing step in procedure "IST STATUS spacecraft + EGSE"

#8 Reconfigure STR


#9 STBY OBCP not triggered, PACS is switched to stand by. Know

	IST1 Part2 PTS : Mode Transition	REF.: H-P-TASF-MN-10418	
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<p>problem</p> <p>#10 Test data to be dumped before start of night shift</p> <p>#11 Work around for RX-2 rate</p> <p>#12 Try to get TM to 5Kps</p> <p>#13 Timing problem</p> <p>#14 Dump packet store memory</p> <p>#15 Re-enable thermal control loop</p> <p>#16 Set STR1 back to healthy state</p> <p>#17 Procedure update</p> <p>#18 Sent overdue TCs from MTL to empty</p> <p>#19 Procedure update</p> <p>#20 Get RWL2 out of stiction region</p> <p>#21 Thermal control is active that needs FCCT update to prevent FDIR of thermal control at ambient</p> <p>#22 Check that all OBCPs are Loaded</p> <p># 23 SET DFE uplink to 4K</p> <p>#24 HIFI to stand by</p>	
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<p>#25 To prepare S/C for alignment activities (night shift)</p> <p>#26 NCR 4181</p> <p>#27 NCR 4181 continued</p> <p>#28 NCR 4181 continued</p> <p>#29 TMCT problem</p> <p>#30 unclear MTL status</p> <p>#31 transition to SCM fails</p> <p>#32 Switch HIFI to standby</p> <p>#33 Switch from XPND</p> <p>#34 Upload EAT before step 146</p> <p>#35 Reset CIR + rerun ACMS-IST-FN</p> <p>#36 Recovery from PACS OBCP triggering</p>	
<p style="text-align: center;">Raised Anomalies</p> <ul style="list-style-type: none"> • SPRs from TRR: <p>SPR 71: TC in incorrect order To be verified</p> <p>SPR 79: Before Launch to launch transition to sufficient time for config</p>	

	IST1 Part2 PTS : Mode Transition	REF.: H-P-TASF-MN-10418	
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validation To be verified during this run SPR 80: RF output incorrect for launch to launch transition To be verified during this run SPR 81: Transponder RF to be displayed in SAD mimic SPR Open. Considered minor and non blocking SPR 82: Incorrect disabling of acknowledge flag To be verified during this run SPR 294: Allow downlink of all TM after transition SAM to NOM To be verified during this run 463 Command not found in MIB Implemented To be verified during this run 465 Set TM filter for ACMS_GET_EVENT_STATUS Implemented To be verified during this run 467 Change of instrument subschedule ID Implemented To be verified during this run 468 Check of PACS spectro + MTL bug Implemented To be verified during this run 471 tcl bug in SPIRE OBCP recovery Implemented To be verified during this run 475 TM check failure Implemented To be verified during this run 476 Loss of RF link during NOM to SM Related to PVS#7 To be verified during this run	
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	IST1 Part2 PTS : Mode Transition	REF.: H-P-TASF-MN-10418	
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478 TM Check failure after NOM to SM
Implemented

To be verified during this run

479 No Packets received due to script not waiting enough time
Implemented

To be verified during this run

Torino SPRs

SPR 18 Warning in code IST_STATUS; code to be completed
Still to be investigated and clarified with system engineering.

SPR Open

SPR 54 SM00M500 – Mode; has incorrect value
Still to be investigated.

SPR Open

SPR 67 Failure in Transition SCM -> OCM

To be verified during this run

- **SPRs Reseen:**

20: Batt SCOE current higher than expected.

Updated. Not deemed important

To be closed

SPR 464/66

TM rate not according to spec (PVS #1)

Open

- **NCRs from TRR:**


3315: Gyro LCL switch off during CDMS

- **SPRs raised**


509 2 TC not uploaded in MTL + TM fail check

508 Event 5-2 overdue TC expected


509 Unable to perform Multi-dump

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<p>510 Unable to dump from text string location</p> <p>511 DC82T170 does not delete all TCs in MTL NCR to be raised</p> <p>512 Missing TCL procedure "H-OBDB_setup_for_SIT</p> <p>513 Not possible to switch HIFI to stand by</p> <p>514 ?</p> <p>515 Unexpected behaviour of XPND</p> <p>• NCRs</p> <p>3958: Re-occurred on OBCP actions to switch off SPIRE (Reported as HIFI off). Not a spacecraft related issue. Potentially a SCOS issue. Minor NCR with no impact</p> <p>4086: SPIRE PRIME needs to be booted with the secondary partition. No operational impact for this test</p> <p>3787: FCV-Duty cycle too long Minor NCR awaiting TASF inputs No operational impact for this test</p> <p>4160: Inverse Calibration curve of SREM TM. No operational impact for this test</p> <p>NCR 4181:</p> <p>NCR 4138: OBCPs on mode transitions are not triggered correctly. Timing issue when reading the data pool. At the start of the OBCP 001 the check of the destination mode is checked and another OBCP if destination mode is EAM or SAM.</p>	
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<p>During Test, this failed in 3 out of 4 attempts. Should not be seen in SAM-SAM and EAM-EAM. A delay shall be added into OBCP001 to delay the read of the data pool for 1 second. Redelivery of database required.</p> <ul style="list-style-type: none"> • Additional SPRs to be raised • Additional NCR to be raised 	
<p align="center">Deviations from the test</p> <p>None</p>	
<p align="center">Actions from Previous meetings</p> <p>None</p>	
<p align="center">Test Evaluation</p> <p>5.8.5.3. Test start configuration</p> <p>This section was completed successfully</p> <p>5.8.5.4. Launch to Launch</p> <p>Events during test</p> <ul style="list-style-type: none"> • Step 5 SPR 20 reoccurred but corrected. to be verified • Step 6 SPR 464/66 PVS # 1 reoccurred TM rate is 5Kbps should be 150Kbps. Bit rate corrected to 150Kbps <p>This section was completed successfully</p> <p>5.8.5.5. Launch to SAM</p> <p>Events during test</p> <ul style="list-style-type: none"> • Step 20 SPR 504: RCS A Health status unhealthy ACMS SCOE issue. Rebooted the SCOE and then it was OK. <p>ASED (CM) Operator note to be created to work around these ACMS issues (switch of ACC) without the need to fully switch off the spacecraft.</p> <p>This section was completed successfully</p>	<p align="center">AI#1</p>

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5.8.5.6. SAM to SAM

Events during test

- **Step 27 PVS #2** Due to reoccurrence of SPR 465
- **Step 24 SPR 440 /NC4160:** SREM dump error (SPR 440 to be closed). No impact for the test.
- **Step 27 SPR 505:** IST PACS OBCP recovery script cannot handle 500bps. Minor script error. No impact for the test.

SPR 465: Verified. Can be closed

This section was completed successfully

5.8.5.7. SAM to NOM

Events during test

- **Step 31 to 32 PVS # 3** for SSMM Dump (save mass memory before night shift). No impact.
- **Step 38 PVS#4:** After step 38, step added ref PVS#4 (additional command in procedure). No impact.
- **Step 39 NCR 3787:** (2X) (FCV duty cycle). No impact.
- **Step 45 NCR 2130:** target wheel speed not reached after 600s. No impact.

ASED (CM) To investigate if the bias settings were correctly set in the procedure.


This section was completed successfully

5.8.5.8. NOM to NOM


Events during test

- **Step 52 PVS# 5 (calling HP-2-ASED-TP-0206 Instruments Procedure Step 3):** Kill script due to blocking TM check in script. Killed and restarted. No impact on test.
- **Step 52 PVS# 6 (calling HP-2-ASED-TP-0206 Instruments Procedure Step 6):** Minor update to procedure to add comment. Will be included in next version of procedure. No impact on test.
- **Step 55 SPR 507:** 2 TC not uploaded in MTL + TM fail check. Being investigated. Does not impact this test.
- **Step 57/58 PVS #7:** Procedure and script update. Does not impact the test.


AI#2

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<ul style="list-style-type: none"> • Step 61 PVS #8 NCR 4178: to recover STR_1 as STR_1 is marked failed periodically (approx every 20 hours) Restarting the STR and everything was OK. The failure was not synchronised to any particular user action. <p>TASF (GB) to talk to M. Oort (in parallel) to discuss this.</p> <p>ASED (CM): Procedure to be updated: After step 61 add note to operator to check that PACS is still in Science Mode</p> <p>This section was completed successfully</p> <p>5.8.5.9. NOM to EAM</p> <p>Events during test</p> <ul style="list-style-type: none"> • Step 63 NCR 4160: Reoccurrence. Database/documentation problem. No impact on test. • Step 63-64 PVS #37: Additional steps to click OK. Procedure update. No impact on test • Step 64: NCR 4129 did not occur. • Step 64: Check of PACS PM049380 Expected: STBY Actual: Non Prime No impact on Test. <p>TASF (GB) to verify with PACS instruments in which standby mode the unit shall be.</p> <p>TASF (GB) To update the red-marked test specification to remove the cut-paste error for the double STBY mistake.</p> <ul style="list-style-type: none"> • Step 67 PVS #9 NCR 4138: OBCP was not triggered. This was triggered manually. As NCR 4138 did not trigger then the mode transition should not have occurred. A bus profile change occurred and PACS and HIFI had a mode transition. <p>TASF (FS) to verify with PACS and HIFI to determine that if the bus profile is changed to 1, an autonomous mode transition occurs.</p> <p>Could be resolved in new version of database and will be verified at the time of that delivery.</p> <ul style="list-style-type: none"> • Step 69 SPR 472 Inconsistencies in PACS/IST Spec (AFS/AFO). IST specification to be updated. No impact. 	<p>AI#3</p> <p>AI#4</p> <p>AI#5</p> <p>AI#6</p> <p>AI#7</p>
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TASF (FS) to contact PACS and update TN 1072 and subsequent database definition after PACS FDIR requirements (PACS-ME-GP-002) update as required.	AI#8
<ul style="list-style-type: none"> • Step 70 SPR 548 NCR 4259: RX2 value was 4K instead of 125bps. <p>This section was completed successfully</p>	
5.8.5.10. EAM to EAM	
Events during test <ul style="list-style-type: none"> • Step 72 STR-2 wait for standby increase timeout time. Repeat TM check OK. Use as is. • Step 74 Increase TM Timeout. TM verification failed. Repeat TM check OK. Use as is. • Step 78 SPR 548 NCR 4259: RX2 value was 4K instead of 125bps. <p>This section was completed successfully</p>	
5.8.5.11. EAM to NOM	
Events during test <ul style="list-style-type: none"> • None <p>This section was completed successfully</p>	
5.8.5.12. NOM to SM	
Events during test <ul style="list-style-type: none"> • Step 90 PVS #10: Dump of test data to ensure it is saved prior to SM. Not to be incorporated. • Step 90 SPR 508/PVS #17 NCR 4255: Event 5-2 overdue TC executed. Check that all unexecuted TCs in MTL are deleted. To be updated in procedure. Does not impact result of test. 	
ASED (CM) to create operator note for deleting the MTL correctly	AI#9
<ul style="list-style-type: none"> • Step 91 PVS #11 SPR 548 NCR 4259: RX2 value was 4K instead of 125bps. Set RX2 to 125bps. Does not impact result of test. • Step 94 SPR 477 NCR 4257 PVS #38: STR1 unavailable after NOM to SM Trans. Investigation required. Recovered via script. Different to the 20 hour issue as this often occurs during Nom to SM (failed for each of the last 3 times tested). 	
TASF (JRH) to hold NRB to discuss NCR 4257	AI#10

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<ul style="list-style-type: none"> • Step 98 SPR 480: Contradiction between default TCT and retrieved data. The battery loop index is enabled where as it should be disabled (as per TN 151). Assumed to be corrected in next CDMS software update. 	AI#11
<p>TASF (B De Molder) to clarify the TCS behaviour for SM wrt the battery Thermal control loop behaviour to determine if behaviour is correct.</p> <p>After end of transition, the TC rate stayed at 125bps rather than the required 4Kbps (as was expected to be automatically changed when going to umbilical). Script has been updated to ensure the rate is changed correctly.</p> <p>This section was completed successfully</p> <p>5.8.5.13. SM to SM</p> <p>(note: performed in 125bps TC rate rather than required 4kbps)</p> <p>Events during test</p> <ul style="list-style-type: none"> • Step109 PVS#12 Try to get TM to 5Kbps. Script error. TC sent manually. Script has been updated. <p>This section was completed successfully</p> <p>Note due to the issue noted in step 145 (EAT not loaded) then no EAT were active.</p>	
<p>ASED (CM) to raise an operator note to re-load the EAT after the SM.</p> <p>5.8.5.14. SM to SAM</p> <p>(note: performed in 125bps TC rate rather than required 4kbps)</p> <p>Note due to the issue noted in step 145 (EAT not loaded) then no EAT were active.</p> <p>Events during test</p> <ul style="list-style-type: none"> • Step 113 PVS#13: one TC was not acknowledged. Script blocked. Problem possibly due to the fact that the uplink was in 125bps rather than 4kbps. Script re-executed successfully. Use as is. • Step 115 PVS #14: Dump memory before part of test executed and disable TCS for night shift. Not to be incorporated. • Step 115 PVS #15: Re-enable TCS after night shift. Not to be incorporated • Step 115 PVS #16 NCR 4178: Recover STR1 (issue raised 	

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already (time related STR1 declared unhealthy).

- **Step 115 PVS #17 NCR 4255** Event 5-2 overdue TC executed. Check that all unexecuted TCs in MTL are deleted. To be updated in procedure. Does not impact result of test.

This section was completed successfully

5.8.5.17. **EAM to SAM (needs new SAM to NOM and NOM to EAM)**

(note: started in 125bps TC rate rather than required 4kbps)

Note due to the issue noted in step 145 (EAT not loaded) then no EAT were active.

Events during test


- **Step 117 SPR 511 NCR 4255 PVS #17:** Event 5-2 overdue TC executed. Check that all unexecuted TCs in MTL are deleted. SPR Raised as the delete MTL command only deletes 100 commands each time executed. To be updated in procedure. Does not impact result of test.
- **Step 118 PVS#18 NCR 4255:** Event 5-2 overdue TC executed. Check that all unexecuted TCs in MTL are deleted. To be updated in procedure. Does not impact result of test.
- **Step 118 PVS#19:** Reconfigure ACMS for test. To be incorporated. Does not impact result of test.
- **Step 123 NCR 3787:** FCV duty cycle. Does not impact result of test
- **Step 131 PVS #20:** Re-bias wheel to get out of stiction region. Does not impact result of test.
- **Step 132 PVS #21:** Change Thermal control settings to allow HIFI switch on without FDIR reconfiguration. This will be needed for future testing if default TCT are not updated. Does not impact result of test.

ASED (SH) to incorporate the change in TP-206 to change TCS to allow HIFI switch on in ambient with default TCT.


- **Step 132 PVS #22:** Check all OBCPs loaded before starting instruments. Does not impact result of test
- **Step 132 SPR 513 PVS #23:** Set DFE to 4k (from the 125 bps rate that the TC rate was set to by mistake) to allow HIFI to be switched to STBY mode.
- **Step 132 NCR 4181 PVS #24:** Switch HIFI to STBY. Problem with IEGSE raw value acquisition safe mode for the night. Does not impact result of test
- **Step 133 PVS #25:** Perform setting activity for the night shift spacecraft optical alignment and HIFI NCR investigation. Not to be

AI#13

THALES

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<p>incorporated. Does not impact result of test</p> <ul style="list-style-type: none"> Restart test configuration setup however could not recover correct status for the instruments. Reboot CCS with new session ID. PVS #26..PVS #30 used to restart the system in known state. 	
<p>TASF (SM) to determine an overall reboot philosophy for the CCS/CCS Lite to avoid the issues in NCR 4181.</p> <ul style="list-style-type: none"> Restarted test from step 124 Step 131 PVS #31: ACMS to be brought in science mode (due to restart). Step 137 PVS #32: Bring HIFI into standby as OBCP not present due to previous tests (SM) and EAT not loaded (see PVS #34). Step 137 PVS #39: Switch on SREM due to SM. Does not impact result of test Step 139 PVS #33: Bus profile was 2 instead of expected 1. 	AI#14
<p>ASED (OM) to raise SPR on bus profile 2 and to investigate.</p> <p>This section was completed successfully however the EAT were not reloaded after transition from SM. It is the opinion of the board that the test was successful but that this section should be re-executed with the new SW (CDMS v 3.6 + DB) to verify correct OBCP operation. This is expected to be delivered 31/7/2008) and needs to be verified before thermal vacuum tests.</p>	AI#15
<p>5.8.5.18. NOM to SAM (needs new SAM to NOM)</p> <p>Events during test</p> <ul style="list-style-type: none"> Step 145 PVS #34: Upload of EAT. EAT are cleared during the SM in previous tests. This is a spec update + script update. 	
<p>TASF(FC) to update IST spec to ensure that the loading of the EAT and other modifications to the SW tables are performed after SM.</p> <ul style="list-style-type: none"> Steps 148..151. ACMS setup already performed. Therefore these can be removed Steps 152..154. Instruments already powered. Therefore these can be removed. Step 155 PVS #35: Reset CIR. Script error. Command executed manually. Step 155 PVS #36: PACS OBCP triggered as required. Recovery was not included in script. Performed manually. 	AI#16

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<ul style="list-style-type: none"> • Step 160: Operator note 29 performed. To be updated in procedure and script. <p>This section was completed successfully</p> <p>5.8.5.19. Test end</p> <p>This section was completed successfully</p>	
<p style="text-align: center;">AOB</p> <p>None</p>	
<p style="text-align: center;">Conclusion</p> <p>All mode transitions (apart from EAM-SAM) were considered successful with a small number of anomalies which require further evaluation but do not impact the success of the test.</p> <p>The EAM to SAM transition was deemed successful but this section should be re-executed with the new SW (CDMS v 3.6 + DB) to verify correct OBCP operation. This is expected to be delivered 31/7/2008) and must be verified before thermal vacuum tests.</p> <p>This test shall be run as part of the software upgrade confidence tests (2-5/8/2008) or when a new version of the DB is available resolving the OBCP issues.</p>	

	Name	Dep./Comp.		Name	Dep./Comp.
X	Alberti von Mathias Dr.	ASG22		Schweickert Gunn	ASG22
	Baldock Richard	FAE12	X	Sonn Nico	ASG51
	Barlage Bernhard	AED13		Steininger Eric	AED32
	Bayer Thomas	ASA42	X	Stritter Rene	AED11
	Brune Holger	ASA45		Suess Rudi	OTN/ASA44
	Edelhoff Dirk	AED2		Wagner Klaus	ASG22
	Fehringer Alexander	ASG13	X	Wietbrock Walter	AET12
X	Fricke Wolfgang Dr.	AED 65		Wöhler Hans	ASG22
	Geiger Hermann	ASA42		Wössner Ulrich	ASE252
	Grasl Andreas	OTN/ASA44	X	Martin Olivier	ASA43
	Grasshoff Brigitte	AET12	X	Theunissen Martijn	DutchSpace
X	Hamer Simon	Terma			
X	Hendry David	Terma			
	Hengstler Reinhold	ASA42			
	Hinger Jürgen	ASG22			
X	Hohn Rüdiger	AED65			
	Hölzle Edgar Dr.	AED32			
	Huber Johann	ASA42			
	Hund Walter	ASE252			
	Idler Siegmund	AED312			
	Ivány von András	FAE12			
	Jahn Gerd Dr.	ASG22			
	Kalde Clemens	ASM2			
	Kameter Rudolf	OTN/ASA42			
	Kettner Bernhard	AET42			
	Knoblauch August	AET32	X	Thales Alenia Space Cannes	TAS-F
X	Koelle Markus	ASA43		Thales Alenia Space Torino	TAS-I
	Koppe Axel	AED312	X	ESA/ESTEC	ESA
X	Kroeker Jürgen	AED65			
X	La Gioia Valentina	Terma		Instruments:	
	Lang Jürgen	ASE252	X	MPE (PACS)	MPE
	Langenstein Rolf	AED15	X	RAL (SPIRE)	RAL
	Langfermann Michael	ASA41	X	SRON (HIFI)	SRON
X	Maukisch Jan	ASA43			
X	Much Christoph	ASA43			
	Müller Jörg	ASA42		Subcontractors:	
X	Müller Martin	ASA43		Thales Alenia Space Antwerp	ABSP
	Peltz Heinz-Willi	ASG13		Austrian Aerospace	AAE
	Pietroboni Karin	AED65		Austrian Aerospace	AAEM
	Platzer Wilhelm	AED2		BOC Edwards	BOCE
	Reichle Konrad	ASA42		Dutch Space Solar Arrays	DSSA
	Runge Axel	OTN/ASA44		EADS Astrium Sub-Subsyst. & Equipment	ASSE
	Schink Dietmar	AED32		EADS CASA Espacio	CASA
	Schlosser Christian	OTN/ASA44		EADS CASA Espacio	ECAS
	Schmidt Rudolf	FAE12		European Test Services	ETS
	Schmidt Thomas	ASA42		Patria New Technologies Oy	PANT
	Schuler Günter	ASA42		SENER Ingenieria SA	SEN