

Title: IST1 S/C Reconfiguration (He 1)

CI-No:

*100000*

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## 1 Scope

This document reports on the S/C Reconfiguration Test clean-run performed as part of the Integrated System Test (IST) 1 Part 1 in Helium-1 conditions at ESTEC, Noordwijk, NL.

### 1.1 Objective

The objective of this sequence is to test the satellite for critical mode transition cases after a system level FDIR trigger.

The test shall validate the S/C autonomous reconfiguration (level 3 and 4 alarms). The test consider the generation of false alarms by forcing software alarms from the special FDIR services CDMU TC and ACMS TC or, stimulating the DOD alarm.

## 1.2 Summary Conclusion

All FDIR were successfully executed as planned. A number of NCRs & SPRs were raised, but none appear to have directly affected the objectives of the test.

The all test has been performed in two slot due to the NCR 3212 . There were some deviations from the IST Specification (AD-1), however these were agreed prior to the start of test at the TRR, see section 4.5 for details.

## 2 Documents / Drawings

### 2.1 Applicable Documents

AD-1	Herschel IST Specification, Issue 6 redlined	HP-2-ASP-SP-0939
AD-2	Leading Procedure for Herschel IST, Issue 4	HP-2-ASED-TP-0134
AD-3	Herschel IST Test Case S\C Reconfiguration	HP-2-ASED-TP-0190
AD-4	Herschel Instrument Power ON-OFF and Mode Switching for Functional Testing, Issue 1.2, 25/04/08	HP-2-ASED-TP-0206
AD-5	Minutes of Meeting TRR S\C Reconfiguration	H-P-TASF-MN-10347
AD-6	Minutes of Meeting PTS S\C Reconfiguration	H-P-TASF-MN-10366
AD-7	Minutes of Meeting Delta TRR S\C Reconfiguration	H-P-TASF-MN-10434
AD-8	Minutes of Meeting PTS S\C Reconfiguration	H-P-TASF-MN-10498

### 2.2 Reference Documents

### 2.3 Other Documents

### 2.4 Acronyms & Abbreviations

See AD-2.

### **3 Test characteristics**

#### **3.1 Title**

Herschel IST Test Case "S\C Reconfiguration"

#### **3.2 Unit tested**

Spacecraft CDMS FDIR and ACMS FDIR

See AD-1 Chapter 5.8.6.2

#### **3.3 Description**

The tests performed functionally check the correct execution of the FDIR action of CDMU and ACMS.

In the first part of the test has been tested the correct execution of the FDIR action for the CDMU using three TC that simulate a software alarm that produce a level 3a after another level 3a and in the end a level3b.

In the second part of the test has been tested the correct execution of the FDIR action for the ACMS using a TC that simulate a software alarm that produce a level 4.

In the last part of the test has been tested the correct execution of the FDIR action for the CDMU level 4 produce simulating a DOD alarm at level of Battery

#### **3.4 Applied procedures**

See AD-2, AD-3, AD-4

#### **3.5 Requirements to be verified**

Not applicable

#### **3.6 Corresponding minutes of meetings**

See AD-5, AD-6, AD-7, AD-8

#### **3.7 General test flow**

The test was executed in the following order:



Specification	Test Procedure
5.8.6.2. Test Start Configuration	<i>H-P-2-ASED-PR-0134, all steps</i>
5.8.6.2. Test Start Configuration	<i>H-P-2-ASED-TP-0190, section 7, step 10 - 600</i>
5.8.6.3. CDMS Level 3a	<i>Step 630 - 820</i>
5.8.6.4. CDMS Level 3b	<i>Step 830 - 1040</i>
5.8.6.5. ACMS Level 4	<i>Step 1050 - 1270</i>
5.8.6.6. ACMS Recovery from Survival	<i>Step 1280 - 1330</i>
5.8.6.7. CDMS Level 4	<i>Step 1340 - 1760</i>

**Session 1 (22/04/2008)**

- CDMS Level 3a and 3b
- ACMS Level 4

Test terminated due to a safety loop during the CDMS DOD level 4

**Session 2 (23/05/2008)**

- CDMS Level 4

## 4 Test execution

### 4.1 Date and time

#### Session 1 (Level 3 CDMU, Level 4 ACMS)

Power ON and initial S/C configuration:

22/04/2008 – 04:30 UTC

Power OFF:

22/04/2008 - 17:00 UTC

Procedure of IST END has been used to switch off the SC after the recovery from the Safety Loop

#### Session 2 (Level 4 CDMU)

Power ON and initial S/C configuration:

23/05/2008 – 04:30 UTC

Power OFF

23/05/2008 – 04:30 UTC

### 4.2 Tag / session reference

#### Session 1 (Level 3 CDMU, Level 4 ACMS)

2008\_04\_22\_04\_23\_hercdmu\_hpws22\_REALTIME\_SC\_RECONF

Start tag : IST1\_PART1\_TP-0134\_iss3\_SC\_RECON\_BEGIN\_001

End tag : IST1\_PART1\_TP-0134\_iss3\_SC\_RECON\_END\_001

#### Session 2 (Level 4 CDMU)

2008\_05\_23\_04\_37\_hercdmu\_hpws22\_REALTIME\_SC\_RECONF CDMS I

Start tag : SESS2008\_05\_23\_04\_30\_hercdmu\_hpws22\_REALTIME

End tag : SESS2008\_05\_23\_04\_30\_hercdmu\_hpws22\_REALTIME

### 4.3 Personnel

Test Director: S. Mooney  
Test Conductor : P. Modesto  
PA: J. Hall  
HPCCS Operator : See As-Run  
AIT QA: See As-Run

### 4.4 Detailed test timeline

This section references the relevant documentation detailing the test execution timeline. For a summary of the main events of the test timeline refer to section 4.6.

#### 4.4.1 *Start of test / end of test*

See section 4.1.

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

#### 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.

#### 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.

#### 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.

#### ***4.4.5 Time of milestone 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	23/05/2008	
Operator	D. Liberatore	
QA	B. Hogg	
EGSE	I. Luck	
Test Case	SC Reconfiguration Formal 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	Sess2008_05_23_04_30_hercdmu_hpws22_REALTIME	
Session ID	2008_05_23_04_37_hercdmu_hpws22_REALTIME_SC_RECONF	
Purpose of test	Debugging	
	NCR investigation	
	Calibration / Maintenance	
	Unit integration testing	
	FORMAL	X

Time	Test Procedure / Step / Script / Command / Event / Anomaly(UTC)	Remarks / Cause of anomaly / Corrective action	C/A type (T/P)	NCR ref. (P)
	SAT AIT Constraints Sheet & Skin Connector Configuration List verified.			
04:37	Start Session (CCSLite included)			
05:09	Start IST START	Perform PVS#1 i.a.w. Previous formal run 16/05/08 and Pietro Modesto's Email 21/05/08 17:39		PVS#1
		Config change PM=BI & PMB Nominal		

Time	Test Procedure / Step / Script / Command / Event / Anomaly(UTC)	Remarks / Cause of anomaly / Corrective action	C/A type (T/P)	NCR ref. (P)
		Load ACMS scoe file fd_b_pmb		
07:09	IST Start Completed			
07:30	Start SC reconfig Procedure TP 0190	Follow PVS#1 to perform the required steps for this testing		
	Note for Operator	Time of interest 10:00 to 10:30 local time therefore 8:00 to 8:30 CCS time.		
	Please obtain a plot of the RWL's for Martin Muller			
0942	During PWR ON of HiFi	Repaet TM check OK		
	Reocc of NRC 4181 where HIFI PWR ON script reports No TLM Pkts rx (TLM param is not validated) for param HM049190.	Test continue		
	PACS switched on using TP 0206	OK		
	SPIRE switched on using TP 0206	OK		
12:29	Continue with Reconfig Testing .	Raised PVS#3 additional step inserted at step 630 in TP 0190		
	Transferring from SAS to BS	OK		
	Trigger DOD, SC CDMS Nom to Survival Instruments OFF – OBCP	Raised PVS#4 Missing step within procedure to disconnect Inst EGSEs if connected		
	Disconnect HiFi EGSE			

Time	Test Procedure / Step / Script / Command / Event / Anomaly(UTC)	Remarks / Cause of anomaly / Corrective action	C/A type (T/P)	NCR ref. (P)
	<p>Change the TLM from unbilical to RF</p> <p>TLM Error Failed to obtain lock</p>	<p>Forgot to load the properly config file in the TMTC Scoe. Upload config file and rerun script Y102989ECVT006_TTC_DL_PORT_SET</p>		<p>PVS#5</p>
	<p>At 500 bps the connection was ok</p> <p>Trans from 500 to 5k had problems with Script</p>	<p>Raised PVS for recovery</p> <p>This has never been verified before do to the safety loops occurrences</p> <p>The script has been bedugged for chan1 and works have ever the spec has been changed and requested for chan 2 instead this part of the script of has never been tested sincethe change.</p> <p>Z010999MCVT080_IST_FDIR_ASTRUM</p> <p>Change back to unblicale for remainder of testing. To aquire tlm to get status of SC</p>		<p>SPR &amp; PVS#6</p>
		<p>Possible NCR to be raised due to the transition of PCDU B to PCDU A this was performed OK however it was noticed that HPS Redundant remained no swap to nominalside with in the Registeror.</p> <p>Enginnering (GB) answer that this performance is in</p>		

Time	Test Procedure / Step / Script / Command / Event / Anomaly(UTC)	Remarks / Cause of anomaly / Corrective action	C/A type (T/P)	NCR ref. (P)
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line with the requirements of the software.

In survival always the HPS is always redundant selected regardless of previous modes of operation.

14:24 Perform IST END to switch off

15:40 PWR OFF Completed

OK

Instructed Floor Manager that SC is OFF

End TAG is:

**IST\_1\_PART\_1\_TP\_0190\_iss1\_1\_SC\_RECONFIG\_END\_001**



Operator	D. Liberatore
QA	J. VdH, D.Lamonby
EGSE	I. Luck
Test Case	S/C Reconfiguration
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_0134_iss3_SC_RECON_END_001
Session ID	2008_04_22_04_23_herdb_hpws22_REALTIME_SC_RECONF
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)
04:30	IST_START			
05:00	Bus-Monitor application erroneously OFF-LINE, reconnected again			
05:10	Cyclic task overrun,.CEV failure during time sync			
05:20	CEV failure during redundant conf			
06:30	Run PROVA_ALESSIO			
07:00	IST_START finished, SC_RECONF started			
07:30	RCS LCLs check fails, see SPR456			
07:56	SPR456 raised – Incorrect check of telemetry in the script for startracker			

2

Time (UTC)	Test Procedure / Step / Script / Command / Event / Anomaly	Remarks / Cause of anomaly / Corrective action	C/A type (T/P)	NCR ref. (PA)
08:31	TM checks on CRS2 and CBTH incorrect, specification needs to be clarified.			
08:45	Sent: Enable time sync AC094001			
08:59	Transition to RF, the transponder does not lock			
09:13	Attempt manually to lock the transponder.			
09:30	Herschel Config file reloaded in the TTC SCOE, then transition to RF performed successfully			
09:45	IST_STATUS reports the errors vs specifications as reported above			
10:00	SREM Accumulation NO instead of YES. SPR?			
10:05	Earth to Earth transition, PACS off, SREM accumulation YES			
10:20	PACS is now off (this is a re-occurrence of NCR 4129) and will remain OFF until ground recovery.			
11:38	ACMS put from SCM to SASM mode.			
12:06	RMB18442 found in 125kbps where 4kbps is expected			
12:10	DEH49170 found in PosB where On is expected. Followed by some other errors on the expected RFDN switch status.			
12:12	Error on the RFDN switches status ABAB is expected, however BABA is found			
13:01	Shift Handover to Late Shift	TEST ID State wrongly above Test ID is  2008_04_22_04_23_hercdmu_hpws22_REALTIME _SC_RECONF		
	Step1280 in TP 0190			

Time (UTC)	Test Procedure / Step / Script / Command / Event / Anomaly	Remarks / Cause of anomaly / Corrective action	C/A type (T/P)	NCR ref. (PA)
	<p>It has been observed that the TLM is over filling the buffer before the TLM para DEMMF160 = 57, should be zero. buffer can be downloaded. This was at 500BPS</p>			
13:30	<p>Step1320</p> <p>Error in Script Z010999MCVT080_ACMS_IST_FN</p>	<p>However the script only verifies TLM. The TLM was visually checked manually and all was ok. Script could not identify param "rfcmd".</p>		
	<p>Additional Step add to Procedure between step1370&amp;1380 PVS#4</p>	<p>SPR0457 - Raised</p> <p>Changing TLM Acquisition to 150BPS</p>		
14:58	<p>After PM reset the obdb values should be re-uploaded for the RWLs</p>			
15:08	<p>Step1590 &amp; 1600 Ignored, Cmd Pacs into safe mode and then Pacs into Science mode</p>	<p>CmdPACS Has already been put in to Science.</p>		
16:17	<p>S/C OFF, Safety loop triggered. Step1660 in TP 0190</p>	<p>During transition from Nom to Survival the Battery Scoe tripped.</p> <p>Same Reoccurrence as of the debug run on the 21/04/08. SPR0452 was raised as it was identified that the script had not been modified to be inline with the NCR NC-3212.</p> <p>The script has been modified and the SPR 0452 awaiting verification. Current Trip now at 20A.</p>		

Time (UTC)	Test Procedure / Step / Script / Command / Event / Anomaly	Remarks / Cause of anomaly / Corrective action	C/A type (T/P)	NCR ref. (PA)
		NCR NC-3212 needs to update to include the problems from today		
		SPR 452 raised		
		During transition from Nom to Survival the Battery Scoe tripped due to current setting on BS		
17:10	Start of recovery process - Simulating traffic on RT13, (ACMS Tm) - Run script Z010999MCVT001_power_on - Send RM A&B Disabled CMD's - - A102109SPVT011_ACMS_ON - A102109SPVT011_ACMS_OFF - Run script Z010999MCVT002_power_off -	PMA setting BSCOE + SAS 4 of each sent.Cmd RM_A_Disable & RM_B_Disable To recover ACMS switch ON & then OFF. Switch off		
17:55	Recovery Completed	End Session		

**Problems found during the test**

**4.4.6 Procedure Variations**

4.4.6.1 Lead Procedure for Session 1 (CDMS Level 3 ACMS Level 4) (TP-0134)

<b>PVS No</b>	<b>Description and Impact on Test (If any)</b>	<b>Impacts Test Objectives (Y/N)</b>
1.	Time Syncro script did not operate correctly	N
2.	Recovery and Switch off after Safety loop Trip	Y

4.4.6.2 IST Procedure for Session 1 (CDMS Level 3 ACMS Level 4) (TP-0190)

<b>PVS No</b>	<b>Description and Impact on Test (If any)</b>	<b>Impacts Test Objectives (Y/N)</b>
2.	Pacs switch off and recovery	N
3.	Dump of mass memory	N
4.	Additional Step to be inserted	N
5.	Additional comments to add to test step	N
6.	Step not Required	N
7.	Delete Test Steps	N

4.4.6.3 Lead Procedure for Session 2 (CDMS Level 4) (TP-0134)

PVS No	Description and Impact on Test (If any)	Impacts Test Objectives (Y/N)
1.	None	

4.4.6.4 IST Procedure for Session 2 (CDMS Level 4) (TP-0190)

PVS No	Description and Impact on Test (If any)	Impacts Test Objectives (Y/N)
1.	To continue with previous Formal Run( many test steps skipped)	N
2.	To Ref to switch on IST procedure for instruments (TP 206)	N
3.	Additional Step (step 630 changed)	N
4.	Additional Step (step 1680 changed)	N
5.	TTC Scoe File not loaded	N
6.	Recovery Required	N

**4.4.7 NCR/SPR Summary**

4.4.7.1 NCRs Opened/Recurred/Closed

NCR No	Title	During	O/R/C
4078	BS Safety loop Occurred	CDMS Level4	C
3472	Unexpected S/C switch-off during IST debugging	CDMS Level4	C
3613	Unknown TM(5,2) event after CDMS 3A alarm	CDMS Level 3a	O
3212	Safety loop	CDMS Level4	C

## 4.4.7.2 SPRs Opened/Recurred/Closed

<b>SPR No</b>	<b>Title</b>	<b>O/R/C</b>
456	Incorrect check of telemetry in the script for star tracker 2	O
457	Error in the script unable to identify parameter	O
542	Unable to switch from 500 bps to 5kbps using rf link	O



**4.4.8 List of NCRs and SPRs raised and what action was taken if any**

4.4.8.1 NCRs

<b>NCR No</b>	<b>Action taken</b>	<b>Impacts Test Objectives (Y/N)</b>
4078	After the safety loop the only action that can be taken it is the recovery of the S/C	Y
3472	After the safety loop the only action that can be taken it is the recovery of the S/C	Y
3613	This appears to be a HPSDB calibration error identified	N
3212	After the safety loop the only action that can be taken it is the recovery of the S/C	Y

## 4.4.8.2 SPRs

SPR No	Action taken	Impacts Test Objectives (Y/N)
456	Corrected, awaiting closure verification, IST2	N
457	Corrected, awaiting closure verification, IST2	N
542	Corrected, awaiting closure verification, IST2	N

**4.4.9 Procedure changes**

See PVS sheets in section 8 of the “as-run” procedures and summarised in 4.4.6.

**4.5 Deviations from Test Requirements**

Specification	Test Procedure	Agreed at TRR
Satellite State Table	Some value in the table are wrong due to not final version of the CDMS OBSW	Yes – see OD-1

#### 4.6 Test Execution Summary

The test was successfully performed, but had to be performed in two parts due to the safety loop occurred at the moment of the CDMS level 4.

#### 4.7 Summary conclusion

All FDIR were successfully executed as planned. A number of NCRs & SPRs were raised (some during debug of the test), but none appear to have directly affected the objectives of the test.

#### 4.8 Open issues

Those NCRs still open that were raised during the test.

## 5 Post-Test Data Retrieval

Post test data is stored in a common location on the Astrium-EADS FTP server at Friedrichshafen. The directory structure is common to all IST tests with only the top level directory name changing to reflect the test concerned. In this instance the top level directory **<Session Name>** s are:

### 5.1 Cleanliness Report

See in the corresponding subdirectory 'Cleanliness\_data' on the CDs labelled with:  
2008\_04\_22\_04\_23\_hercdmu\_hpws22\_REALTIME\_SC\_RECONF  
2008\_05\_23\_04\_37\_hercdmu\_hpws22\_REALTIME\_SC\_RECONF

### 5.2 Dump the CCS data

#### 5.2.1 Session Archive

See in the corresponding subdirectory 'Session\_Archive' on the CDs labelled with:  
2008\_04\_22\_04\_23\_hercdmu\_hpws22\_REALTIME\_SC\_RECONF  
2008\_05\_23\_04\_37\_hercdmu\_hpws22\_REALTIME\_SC\_RECONF

#### 5.2.2 SSMM Dump data

See in the corresponding subdirectory 'SSMM\_dump\_data' on the CDs labelled with:  
2008\_04\_22\_04\_23\_hercdmu\_hpws22\_REALTIME\_SC\_RECONF  
2008\_05\_23\_04\_37\_hercdmu\_hpws22\_REALTIME\_SC\_RECONF

#### 5.2.3 TM packet history (tbc)

#### 5.2.4 TM history

See in the corresponding subdirectory 'TM\_history' on the CDs labelled with:  
2008\_04\_22\_04\_23\_hercdmu\_hpws22\_REALTIME\_SC\_RECONF  
2008\_05\_23\_04\_37\_hercdmu\_hpws22\_REALTIME\_SC\_RECONF

### **5.2.5 TC packet history**

See in the corresponding subdirectory 'TC\_history' on the CDs labelled with:

2008\_04\_22\_04\_23\_hercdmu\_hpws22\_REALTIME\_SC\_RECONF

2008\_05\_23\_04\_37\_hercdmu\_hpws22\_REALTIME\_SC\_RECONF

### **5.3 Dump the TM/TC DFE data**

See in the corresponding subdirectory 'TMTC\_DFE\_data' on the CDs labelled with:

2008\_04\_22\_04\_23\_hercdmu\_hpws22\_REALTIME\_SC\_RECONF

2008\_05\_23\_04\_37\_hercdmu\_hpws22\_REALTIME\_SC\_RECONF

#### **5.3.1 CLTU**

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

2008\_04\_22\_04\_23\_hercdmu\_hpws22\_REALTIME\_SC\_RECONF

2008\_05\_23\_04\_37\_hercdmu\_hpws22\_REALTIME\_SC\_RECONF

#### **5.3.2 TC packets**

See in the corresponding subdirectory 'Tc\_packets' on the CDs labelled with:

2008\_04\_22\_04\_23\_hercdmu\_hpws22\_REALTIME\_SC\_RECONF

2008\_05\_23\_04\_37\_hercdmu\_hpws22\_REALTIME\_SC\_RECONF

#### **5.3.3 TM frame**

See in the corresponding subdirectory 'Tm\_frame' on the CDs labelled with:

2008\_04\_22\_04\_23\_hercdmu\_hpws22\_REALTIME\_SC\_RECONF

2008\_05\_23\_04\_37\_hercdmu\_hpws22\_REALTIME\_SC\_RECONF

#### **5.3.4 TM packets**

See in the corresponding subdirectory 'Tm\_packets' on the CDs labelled with:

2008\_04\_22\_04\_23\_hercdmu\_hpws22\_REALTIME\_SC\_RECONF

2008\_05\_23\_04\_37\_hercdmu\_hpws22\_REALTIME\_SC\_RECONF

**5.4 Dump the 1553 DFE data (MILBUS)**

Not required

**5.5 Dump the SCOE data**

Not required

**5.5.1 TT&C SCOE data**

Not required

**5.5.2 Cryo SCOE data**

Not required

**5.5.3 ACMS SCOE data**

Not required

**5.6 Replay of data**

Not required

**5.6.1 Replay archive**

Not required

**5.6.2 Replay TM history**

Not required

**5.6.3 Replay TM packet history (tbc)**





## **6 Attachments – Supporting Documentation**

### **6.1 Contamination control report**

See CD containing test data.

As long as no (PA/QA) NCR has been raised during the test period, are all environmental values in specification.

Note: On Tuesday 10 and Wednesday 11 June-2008, all measurement stations are calibrated. This might reflect in some dips or other, at the first glance, strange behaviour in the plots.

### **6.2 Pictures taken on the specimen in test configuration**

Not applicable.

### **6.3 Record (CD/DVD-ROM) of all acquired data during test**

See CD/DVD containing test data.

6.4 Test measurements devices calibration reports

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

## 6.5 Logbook extracts

See chapter 4.4.5

Note the logbook extracts are for information only and do not necessarily represent a complete and accurate sequence of events. All essential information is provided in the signed off "as-run" procedures appended to this report.

## 6.6 Copy of raised SPRs / NCRs

For NCRs, reference should be made to PRISMA for an accurate and detailed status of each, see section 4.4.7.1 & 4.4.8.1 for a summary of the NCRs related to this test.

A copy of SPRs raised during the test are attached.

# Attachment 1 to Section 6.6: SPRs Raised During S/C Reconfiguration

# SPR Formsheet

Nr.: 542	Date: 23/05/08	Author: J. HOGER	Classification:
----------	----------------	------------------	-----------------

Test: SC RECONF	Session ID: 2008_05-23_04-30_heroduu-hpws22_REALTIME-SC-RECONF	Subsystem:
-----------------	--	------------

Title: UNABLE TO SWITCH FROM 5~~00~~00bps to 5K USING RF LINK WHILST

Type: (Script/Picture /Test structure):	Name: 2010999MCTU080-1ST_FD1R-ASTRUM	Version: 1.42
---	--------------------------------------	---------------

Problem description (to be filled by Test conductor (TC) / Test operator (TO)):  
Time (UTC): Step no: PARAM DHO170  
R(CH)-D18170 WRONG VALUE WAS SET. VALUE SET TO 2 EXPECTED 1.

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:
-------	---------------

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.: 456	Date: 22-04-08	Author: D. LAMONBY	Classification:
Test: S/C RECONFIGURATIONS	Session ID: 2008-04-22-04-23_hercdmu-hpws22- REALTIME_SC_RECONF	Subsystem:	
Title: INCORRECT CHECK OF TELEMETRY IN THE SCRIPT FOR STARTRACKER 2			
Type: (Script/Picture /Test structure):	Name: Z010999MCVT0801ST_FDIR_ASTRUM	Version: 1.41	
Problem description (to be filled by Test conductor (TC) / Test operator (TO)): Time (UTC): 07:56 Step no: 320 WHEN RCS IS SWITCHED ON, THE SCRIPT CALLS FOR LCL45 TO BE CHECKED INSTEAD OF LCL 46 (LCL 46 IS JUST FOR SURVIVOR)			
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 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 patch on-line/checkin: <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.: <b>0457</b>	Date: <b>22/04/08</b>	Author: <b>R. HOGG</b>	Classification:
---------------------	--------------------------	---------------------------	-----------------

Test: <sup>FORMAL</sup> <b>S/C RECONFIG</b>	Session ID: <b>2008-04-22-04-23_hercdmu -hpws22-realtime_sc_reconf</b>	Subsystem:
--	--	------------

Title: **ERROR IN SCRIPT UNABLE TO IDENTIFY PARAM "rfcmd"**

Type: (Script/Picture /Test structure):	Name: <b>12010999 MCVT080-ACMS-IST-FN</b>	Version:
---	--	----------

**Problem description (to be filled by Test conductor (TC) / Test operator (TO)):**

Time (UTC):                      Step no:

**FAILS TO VERIFY TLM CORRECTLY. TLM CONFIRMED CORRECT MANUALLY. SCRIPT CAN NOT IDENTIFY "rfcmd"  
PLEASE SEE ATTACHED**

**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:
-------	---------------

Implemented: <input type="checkbox"/>	Code inspected: <input type="checkbox"/>
Confirmed by Test Conductor(s) / Experts to patch on-line/checkin: <input type="checkbox"/>	

Date:	Name:
-------	-------

**Close out (Functional team member & QA):**

Verified during test case / ID: \_\_\_\_\_

Date:	Version:	Func. Team Name:
-------	----------	------------------

Date:	QA:
-------	-----



## 6.7 As-Run Procedure

A copy of the "as-run" procedures follow.

## Attachment 1 to Section 6.7:

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

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

AS RUN FOR FORMAL

CI-No:

S/C RECONFIGURATION  
RUN 22/04/08

Prepared by:	Functional Team	Date:
Checked by:	C. Much <i>C. Much</i>	18/4/2008
Product Assurance:	J. Hall <i>J. Hall</i>	18-4-2008
Configuration Control:	W. Wietbrock	
TASF Engineering	G. Beauflis <i>G. Beauflis</i>	18 APR 08
TASF Test Director	S. Mooney <i>S. Mooney</i>	18-4-2008
Project Management:	Dr. W. Fricke <i>Dr. W. Fricke</i>	18.04.08
Project Management	Denis Montet <i>Denis Montet</i>	18-4-2008

Distribution: See Distribution List (last page)

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Tag: IST1-PART1-TP-0134-1553-SC-RECON-BEGIN-001  
END-001

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 &amp; 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>	

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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>		
<b>EGSE</b>	CCS	1		
	CCS lite	1		
	TM/TC DFE	1		
	CDMU SCOE	1		
	ACMS SCOE	1		
	TT&C SCOE	1		
	POWER SCOE	1		
	CCU SCOE			
<b>IGSE</b>	<b>HIFI IGSE</b>	1		
	<b>PACS IGSE</b>	1		
	<b>SPIRE IGSE</b>	1		
<b>PCS</b>	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
<b>CDMS</b>	CDMU	1+1		
<b>ACMS</b>	ACC	1+1		
	RWA	3+1		
	GYRO	3+1		
	STR	2		
	CRS	2		
	AAD	1+1 internal red		
	SAS	2+2 internal red		
<b>TT&amp;C</b>	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: 3.4.0.9.
- ACMS OBSW: 3.7.
- STR PROM SW: \_\_\_\_\_
- STR EEPROM SW: \_\_\_\_\_
- PACS DPU SW: \_\_\_\_\_
- PACS SPU SW: \_\_\_\_\_
- PACS DMC SW: \_\_\_\_\_
- HIFI ICU SW: \_\_\_\_\_
- SPIRE DPU SW: \_\_\_\_\_

*SEE TRR  
MOM. ANNEX 4  
H-D-TASF-MN-10347  
18/4/08.  
FOR FULL LIST.*

### 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

	Op	Comments	Non Op
<b>CDMS</b>			
CDMU	X		
1553 MIL-BUS A	X		
1553 MIL-BUS B	X		
<b>PCS</b>			
PCDU	X		
BAT		BS SCOE connected	X
Solar Array		Not installed	X
<b>TCS</b>	X		
<b>TT&amp;C</b>	X		
MGA	X	RF-SCOE connected to Test-Caps on Antenna	
LGA1	X	RF-SCOE connected to Test-Caps on Antenna	
LGA2	X	RF-SCOE connected to Test-Caps on Antenna	
<b>ACMS</b>			
1553 MIL-BUS A	X		
1553 MIL-BUS B	X		
ACC	X		
RWL1,2,3,4	X		
SAS1	X		
SAS2	X		
AAD	X		
GYR	X		
STR1	X		
STR2	X		
CRS1	X		
CRS2	X		
<b>RCS</b>		Simulated	X
<b>CCU</b>	X		
<b>SPIRE</b>	X		
WUs			
FPU			
<b>PACS</b>	X		
WUs			
FPU			
<b>HIFI</b>	X	Switch ON only to Stby	
WUs			
FPU			
<b>VMC</b>	X		
<b>SREM</b>	X		
<b>CryoCover</b>		Not connected	X

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
<b>SKIN-03</b>	TTC Panel				
	<b>Connector Function</b>	<b>Skin Connector</b>	<b>S/C unit</b>	<b>SCOE CABLE</b>	<b>Flight Connector</b>
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				
	<b>Connector Function</b>	<b>Skin Connector</b>	<b>S/C unit</b>	<b>SCOE CABLE</b>	<b>Flight Connector</b>
	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
<b>SKIN-04</b>	ACMS Panel (RWE)				
	<b>Connector Function</b>	<b>Skin Connector</b>	<b>S/C unit</b>	<b>SCOE CABLE</b>	<b>Flight Connector</b>
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				
	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
			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:	

AS-RUN 22.05.08

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	✓	

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				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 <i>Copy 2</i> (See note1) <i>type</i> ✓
SKIN-03	Test point TC + protection jumper EPC2	SK03J02	XPND2/EPC2		Plastic cap <i>Copy 2</i> (See note1) <i>type</i> ✓
	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 ✓

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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	✓
	<b>UMBILICAL</b>				
	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	✓

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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	N/A	✓ no flight
		321100-J02	LL702, H702	Cryo SCOE J03	N/A	✓ no flight
	321100-J03	H502, H503	Cryo SCOE J06	N/A	✓ no flight	


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	321100-J04	P501	Cryo SCOE J01	M/A ✓	no flight	
	321100-J05	H103, H701, L102, VT102, VT103, VT105, VT701, VH102, VH103, VH105, VH701, VS102, VS105, VS701	Cryo SCOE J11	M/A ✓	no flight	
	321100-J06	H104, H702, L101, VT104, VT106, VT702, VH104, VH106, VH702, VS104, VS702	Cryo SCOE J03	M/A ✓	no flight	
	321100-J07	H501	Cryo SCOE J06	M/A ✓	no flight	
	321100-J08	T502	Cryo SCOE J01	M/A ✓	no flight	
321 200	on top of					
	Connector Function	Connector	S/C Unit	SCOE	Cryo SCOE 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 ✓ X
		321200-J02	T102, T105, T106, T111, PR_P701, T421, T442, T461, H101	Cryo SCOE J04		X ✓ X
		321200-J03	T321, T323, T501, T505, T651, T901, T903, T907, T911	Cryo SCOE J09		X ✓ X
		321200-J04	T312, T314, T316, T905, T909, T931, T933, T935	Cryo SCOE J09		X ✓ X
		321200-J05	VS103, H102	Cryo SCOE J04		X ✓ X

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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 W/F	on top of					
	Connector Function	Skin Connector	S/C unit	SCOE	SCOE Cable connected	Flight Cap connected
				Cryo SCOE J18		X
				<del>N/A</del>		
to be approved & released before start of ACS/PR/TP by Floor-Manager		Date: 22.5.08 18:05		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
	SAFE / ARM plug	314 200-J03	NED (601)	X <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	SAFE / ARM plug	314 200-J04	NED (602)	X <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	SAFE / ARM plug	314 200-J05	SI 601	X <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SAFE / ARM plug	314 200-J06	SI 602	X <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
to be approved & released before start of ACS/PR/TP by Floor-Manager		Date: 22.5.08 18.05		Sign: M. Penley F. B. 	

	Op	Comments	Non Op
<b>CDMS</b>			
CDMU	X		
1553 MIL-BUS A	X		
1553 MIL-BUS B	X		
<b>PCS</b>			
PCDU	X		
BAT		<b>BS SCOE connected</b>	X
Solar Array		<b>Not connected</b>	X
<b>TCS</b>	X		
<b>TT&amp;C</b>	X		
MGA	X	RF-SCOE connected to Test-Caps on Antenna	
LGA1	X	RF-SCOE connected to Test-Caps on Antenna	
LGA2	X	RF-SCOE connected to Test-Caps on Antenna	
<b>ACMS</b>			
1553 MIL-BUS A	X		
1553 MIL-BUS B	X		
ACC	X		
RWL1,2,3,4	X		
SAS1	X		
SAS2	X		
AAD	X		
GYR	X		
STR1	X		
STR2	X		
CRS1	X		
CRS2	X		
<b>RCS</b>		<b>Simulated</b>	X
CCU	X	<b>Cryo SCOE partially connected</b>	
<b>SPIRE</b>	X		
WUs			
FPU			
<b>PACS</b>	X	<b>PACS Safe Mode with simulated science data, NO higher level mode commanding allowed</b>	
WUs			
FPU			
<b>HIFI</b>	X	<b>!WARNING! If HIFI is switched ON higher than StBy, the cooler in the CleanRoom has to be switch ON too.</b>	
WUs			
FPU			
<b>VMC</b>	X		
<b>SREM</b>	X		
<b>CryoCover</b>		<b>Not connected</b>	X

**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	M. Müller	[Signature]
Test Director	Y	S. MOONEY / TASF	[Signature]
Test Conductor	Y	P. TROST / TASF	[Signature]
EGSE Operator			
SVM Support Engineer			
Cryo Support Engineer			
HIFI Instrument Support Engineer			
PACS Instrument Support Engineer			
Spire Instrument Support Engineer			
PA Responsible	Y	J. HALL / TASF	[Signature]
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 =  $22\text{C} \pm 3\text{C}$
- Relative Humidity = 55 % +/- 10%
- Delta Pressure = above 0.6 mm H<sub>2</sub>O
- 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 11)	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	<b>Launch phase, separation and post separation</b>						
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
5.8.2.4.6	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	<b>Satellite Commissioning</b>						
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	<b>ACMS commissioning</b>						
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	RVLs 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	<b>Mode transitions</b>						
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	<b>Launch clean run</b>						
		OFF	Y	n.a	Preferred	alternative	alternative
5.8.11	<b>Launch sequence robustness</b>						
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 (degrading from IST Spec #)	He I HTT venting >20mg/sec	He II HTT venting >20mg/sec
<b>5.8.5</b>	<b>Mode transitions</b>						
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	H	0-23		alternative	Preferred
5.8.5.12	NOM to SM	PAC S STBY->OFF SPIRE Photo->OFF HIFI STBY->OFF	H	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	H	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	H	0-23		alternative	Preferred
5.8.5.19	Test end	OFF	N	0-23		alternative	Preferred
<b>5.8.6</b>	<b>S/C reconfiguration</b>						
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-	H	0-23		alternative	Preferred
5.8.6.4	CDMS level 3b	PAC S STBY SPIRE STBY HIFI STBY	H	0-23		alternative	Preferred
5.8.6.5	ACMS level 4	PAC S Prime->OFF SPIRE STBY->OFF HIFI STBY->OFF	H	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	H	0-23		alternative	Preferred
5.8.6.8	Test end	OFF	N	0-23		alternative	Preferred
<b>5.8.12</b>	<b>NOM mode robustness</b>						
5.8.12.3.1	Initial State	PAC S STBY SPIRE Photo HIFI STBY	H	0-23		alternative	Preferred
5.8.12.3.2	CDMS PM 1553 BC failure simulation	PAC S STBY SPIRE Photo-> STBY	H	0-23		alternative	Preferred
5.8.12.3.3	CDMS PM 1553 BC failure recovery	PAC S Photo SPIRE STBY HIFI STBY	H	0-23		alternative	Preferred
5.8.12.3.4	Initial state second test	PAC S Photo SPIRE STBY HIFI STBY	H	0-23		alternative	Preferred
5.8.12.3.5	ACMS 1553 RT failure simulation	PAC S Photo -> STBY SPIRE STBY	H	0-23		alternative	Preferred
5.8.12.3.6	ACMS 1553 RT failure recovery	PAC S STBY->OFF SPIRE STBY->OFF HIFI STBY->OFF	H	0-23		alternative	Preferred
<b>5.8.13</b>	<b>Test of Instrument FDIR OBCP</b>						
5.8.13.4	SPIRE FDIR OBCP	SPIRE	H	0-23		alternative	Preferred
5.8.13.5	PACS FDIR OBCP	PACS	H	0-23		alternative	Preferred
5.8.13.6	HIFI FDIR OBCP	HIFI	N	0-23		alternative	Preferred
<b>5.9</b>	<b>DEGRADED CASES</b>						
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 #1)	He I HTI venting >20mg/sec	He II HTI venting >20mg/sec
<b>5.8.3</b>	<b>Satellite Commissioning</b>						
5.8.3.8	CCU (cryostat) commissioning	OFF	N	23			Required
<b>5.8.4</b>	<b>Instruments commissioning and performance verification</b>						
5.8.4.3	Test start (restart) configuration	OFF	N	23			Required
5.8.4.4							Required
5.8.4.5	SPIRE commissioning test	SPIRE	N	23 -> 90			Required
5.8.4.6	PACS commissioning test	PACS	N	23			Required
5.8.4.7	HIFI commissioning test	HIFI	N	0.23			Required
5.8.4.8	SPIRE and PACS parallel mode	SPIRE/PACS	N	23			Required
5.8.4.9	Test end or interruption	OFF	N				Required
<b>5.8.7</b>	<b>CDMS management</b>						
5.8.7.2.1	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
5.8.7.2.2	MTL management	PACS Prime STBY -> Burst -> X SPIRE STBY HIFI STBY	N	0.23		alternatively if MTL is compatible with instrument operations	Preferred
5.8.7.2.3	OBCP management	PACS Prime STBY -> Burst -> X SPIRE STBY HIFI STBY	N	0.23		alternatively if MTL is compatible with instrument operations	Preferred
5.8.7.2.4	SSMM management	PACS Prime STBY -> Burst -> X SPIRE STBY HIFI STBY	N	0.23		alternatively if MTL is compatible with instrument operations	Preferred
5.8.7.2.5	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
5.8.7.2.6	OBT management	PACS Prime STBY -> Burst -> X SPIRE STBY HIFI STBY	N	0.23		alternatively if MTL is compatible with instrument operations	Preferred
<b>5.8.8</b>	<b>DTCP worst case scenario</b>						
		PACS (Burst) SPIRE STBY HIFI Prime	N	0.23		TBC	Preferred
<b>5.8.9</b>	<b>REFERENCE Mission Scenario</b>						
5.8.9.2	Test start configuration		Y				Required
5.8.9.3	Test steps		Y				Required
5.8.9.4	HIFI OD	HIFI OD	Y	0.23			Required
5.8.9.5	PACS OD	PACS OD	Y	0.23			Required
5.8.9.6	SPIRE OD	SPIRE OD	Y	0.23			Required
5.8.9.7	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.



### 5.3.4 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
	N/A		

### 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.
		N/A			

#### **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	

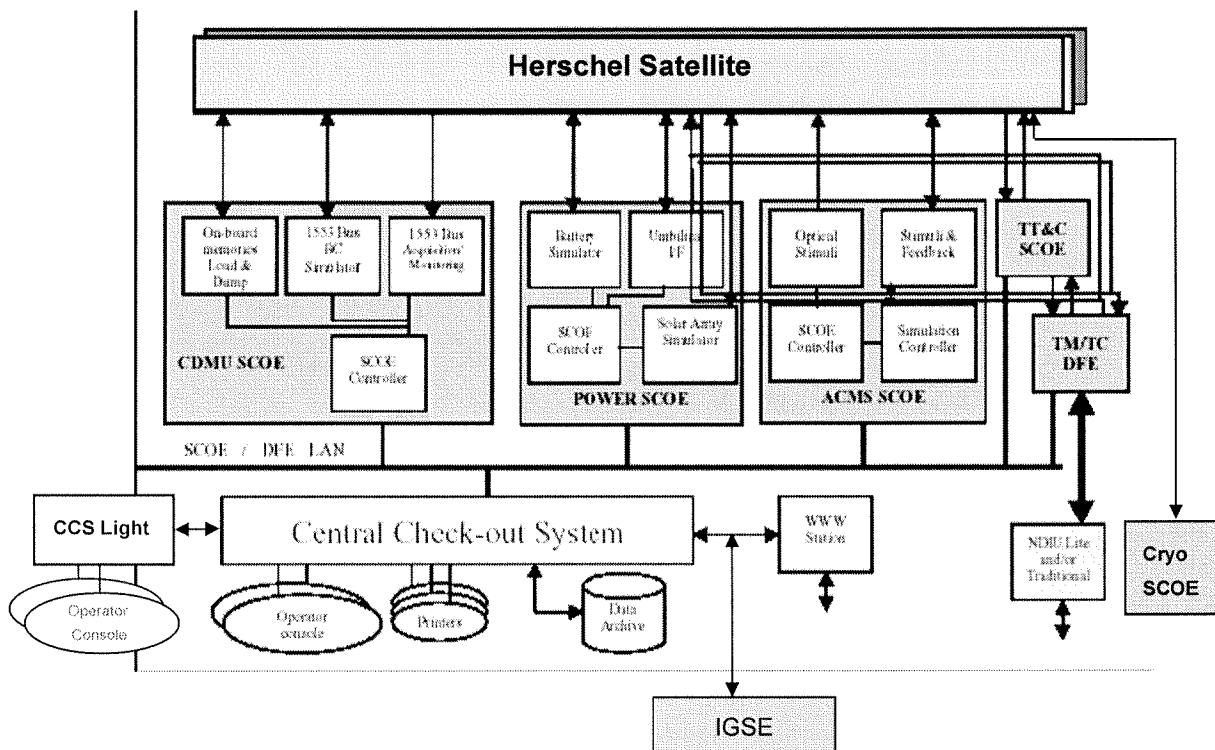
Qty.	Designation/Manufacturer	Provided by	Drawing/Ident. NR:	Calibr. Date
Set	Helium I lines (Y0612)	ASED	CI No. 142 310-09	
Set	Helium II Pumping lines (Y0602)	ASED	CI No. 142 310-09	
2	Scaffolding for He lines	ASED	CI No. 142 310-10	
10	450 l LHe Dewars type HDS 450 -EIPS	Linde		
1	Spiro pump DryTel 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 consists 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

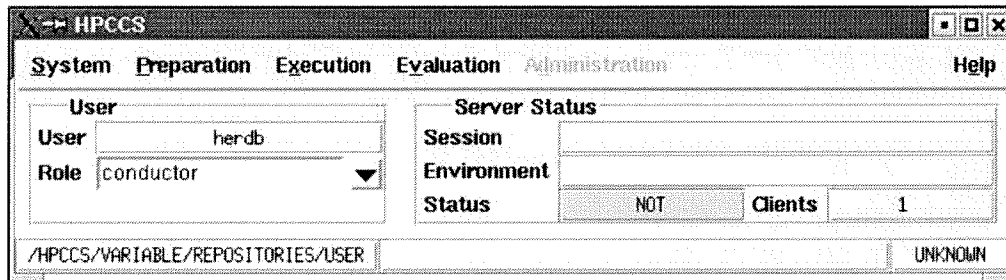
## 7.1 HPCCS Configuration for IST Test



### 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



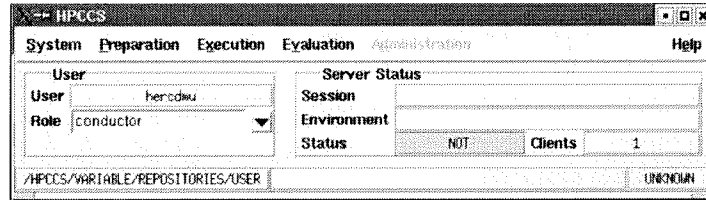
3. Logged as herdb, in HPCCS window, select menu "Preparation → Prepare"
4. Logged as herdb, in PREP window, select menu "Preparation → Discard all"
5. Logged as herdb, in Confirm Discard window, click the button Discard
6. Logged as herdb, in PREP window, select menu "Preparation → Update"
7. Logged 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**

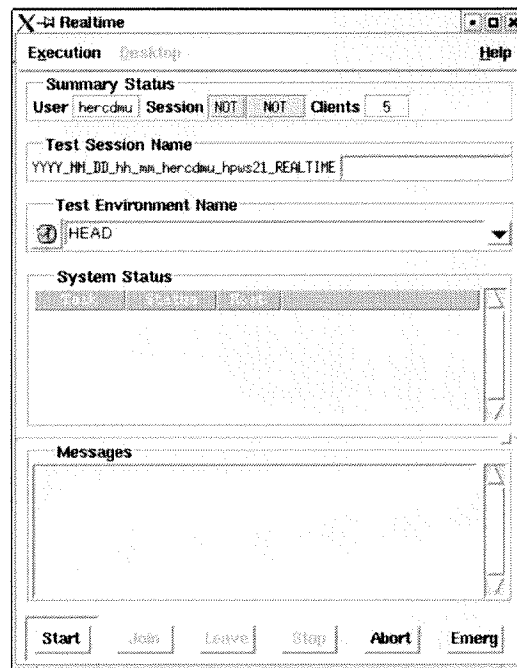
10. Logged as herdb, push Apply → Apply
11. Logged as herdb, confirm Tag Application Push Apply button
12. Logged as herdb, open a new shell window (xterm)
13. Logged as herdb, execute the command **update\_tag**
14. Logged as herdb, insert the name of TAG  
**IST\_x\_PART\_x\_TP\_xxxx\_x\_x\_BEGIN\_xxx**
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.



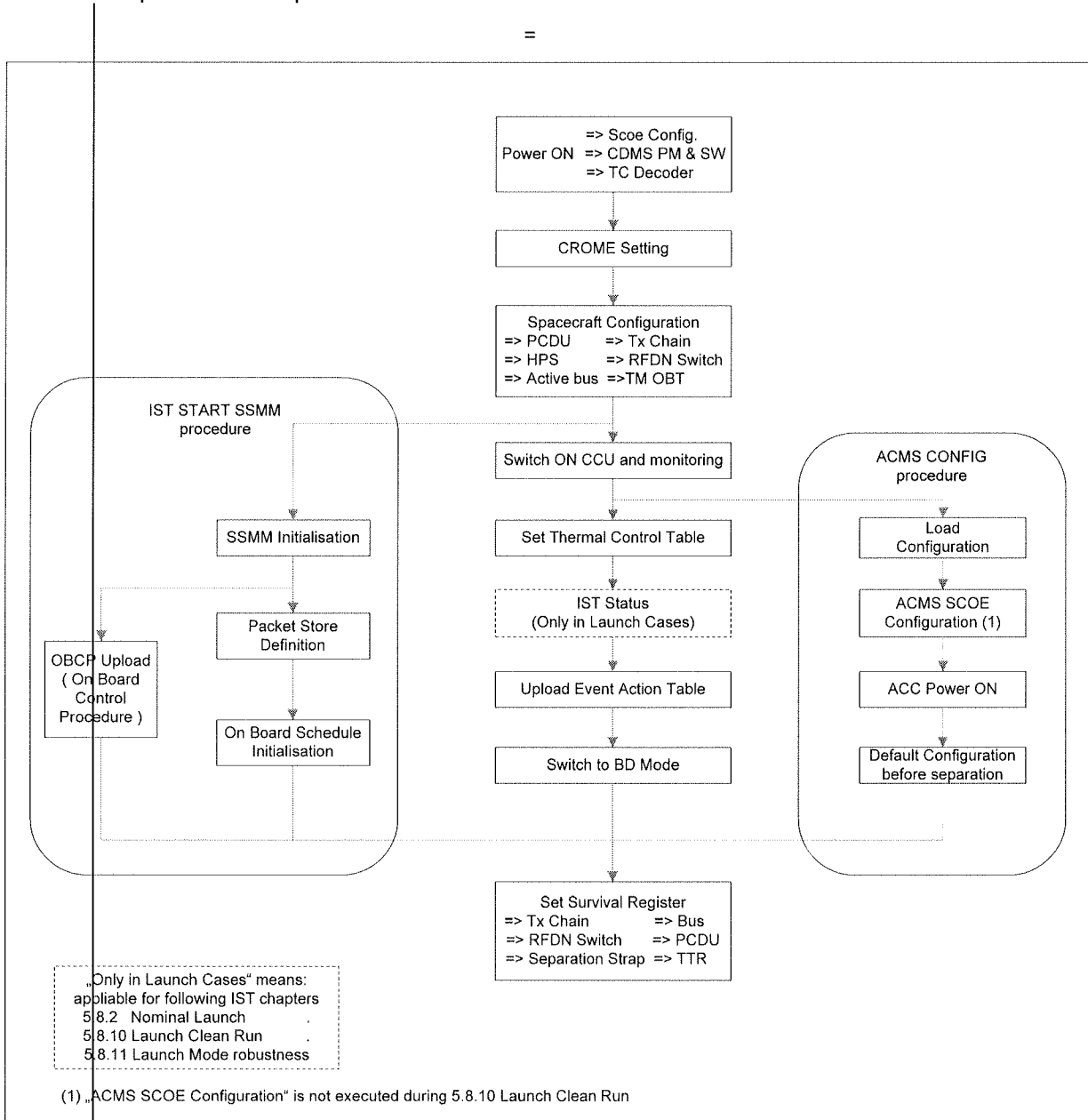
Once the real time session initialized, the button "**Join**" is enabled and shall be clicked. Then configure desktop of different CCS stations through the menu "Desktop" and the following menus:

- 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.



**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			
<b>5.8.2 NOMINAL LAUNCH</b>																				
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
<b>5.8.3a ACMS Commissioning</b>																				
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
<b>5.8.3b S/C Commissioning</b>																				
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
<b>5.8.4.5.1 SPIRE Commissioning</b>																				
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	
<b>5.8.4.5.2 SPIRE Spectrometer Complementary Test</b>																				
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				
<b>5.8.4.6 PACS Commissioning</b>																				
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	
<b>5.8.4.7 HIFI Commissioning</b>																				
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	
<b>5.8.4.8 Parallel Mode Commissioning</b>																				
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	
<b>5.8.5 Mode Transition</b>																				
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
<b>5.8.6 FDIR Reconfiguration</b>																				
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
<b>5.8.7 CDMS Management</b>																				
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
<b>5.8.8 DTCP Worst Case Scenario</b>																				
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


*SK*  
*92s*  
*9/1.2/07*

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

<b>5.8.9 RMS Reference Mission Scenario</b>																				
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
<b>5.8.9 Launch Clean Run</b>																				
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
<b>5.8.11 Launch Mode Robustness</b>																				
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
<b>5.8.12 NOM Mode Robustness</b>																				
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
<b>5.8.13 Instrument FDIR</b>																				
SAS	Sim. Charged	PM A Nominal	Separated	B	B	A	A2	A 1 B 1	A	B	A	B	A	A	B	1&3	ABBB	A&B	1	IST_CDMS

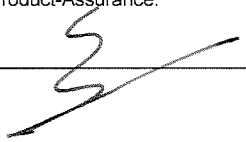
7.2.3 Initialisation

Step-No.	Initialisation-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
<b><u>TT&amp;C SCOE initialisation</u></b>							
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.						
<b><u>SPACECRAFT SKIN CONNECTORS CONFIGURATION</u></b>							
3	<b>Verify that all the SCOE skin connectors cables are installed</b> <ul style="list-style-type: none"> <li>• Goto chapter 4.3</li> <li>• Choose according to the IST Test case the related skin configuration table</li> <li>• Check the list and sign off (together with PA and Floor Manager).</li> </ul>					✓	

Test location: ESTEC	Operator: I. Luch	Product-Assurance: 	Date: 24/04/08	Time: 4 : 30
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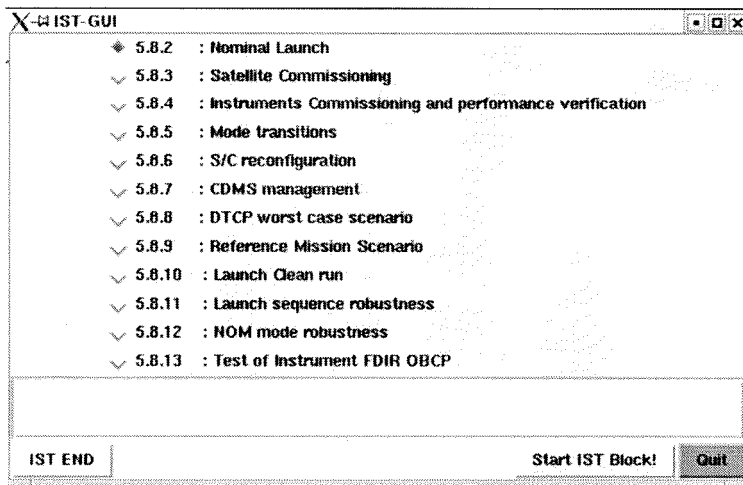


Step-No.	Initialisation-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
<b>ACMS SCOE CHECK</b>							
4 N/A for "Launch Clean Run"	Verify that the ACMS SCOE is ON and operational					✓	
5 N/A for "Launch Clean Run"	In the Clean Room, check on the ACMS SCOE that STR UCE Electrical Stimuli program 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					✓	

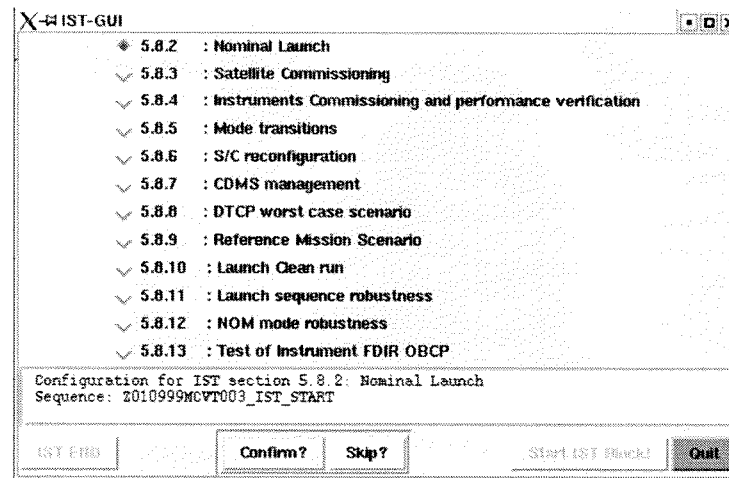
Test location: <i>EXTOC</i>	Operator <i>J. Guen</i>	Product-Assurance: 	Date: <i>22/09/08</i>	Time <i>04:30</i>
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**7.2.4 IST Start Step by Step Procedure**

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: ESTOL	Operator A.	Product-Assurance: 	Date: 22/09/08	Time 04:30
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Step-No.	IST_START-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
1	<b>Z010999MCVT003_IST_START</b> 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 3)				✓	

**Configuration of "IST START"**

<b>Power</b> SAS/LPS SCOE: <input type="text" value="SAS"/> Bat. SCOE: <input type="text" value="Simulated"/> PCDU: <input type="text" value="A"/> HPS: <input type="text" value="A"/> <b>CCU</b> CCU: <input type="text" value="A&amp;B"/> Mode: <input type="text" value="512s (Mode 1)"/>	<b>CDMS</b> TM OBT: <input type="text" value="A"/> Bus: <input type="text" value="A"/> PM: <input type="text" value="A1"/> PapCcs: <input type="text" value="PMAnominal"/> <b>Survival Register</b> Bus: <input type="text" value="B"/> Launch Straps: <input type="text" value="Not Separated"/> PCDU: <input type="text" value="B"/> TTR: <input type="text" value="B"/> Tx Chain: <input type="text" value="B"/> RFDN Switches Position: <input type="text" value="ABBB"/>	<b>Rx and Tx Chain</b> Tx Chain (Xpnd, Tx, EPC, TWT): <input type="text" value="A"/> TC decoder: <input type="text" value="A"/> TM Rate: <input type="text" value="Medium (150Kbps)"/> RFDN Switches in use: <input type="text" value="1&amp;3"/> <b>SSMM</b> Mass Memory: <input type="text" value="A0 and B0"/>
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**IST\_START Configuration Panel**

Test location: <i>ESTEC</i>	Operator: <i>P. G.</i>	Product-Assurance: <i>[Signature]</i>	Date: <i>22/04/08</i> Time: <i>04:30</i>
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Step-No.	IST_START-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
2	<p><b>Z010999MCVT003_IST_START</b></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><b>"START Satellite HERSCHEL "IST_START"</b></p> <p>⇒ Choose "Yes" or "No"</p>	YES				✓	
3	<p><b>Z010999MCVT097_ASDGEN_CRIT_PARS_CHECK</b></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: ESTEC	Operator Dh	Product-Assurance: 	Date: n/oa/08	Time 04:30
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Step-No.	IST_START-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
4	<b>Z010999MCVT003_IST_START</b> Reply to the prompt: "SPACECRAFT POWER_ON"  ⇒ Click the button "Confirm" to proceed					✓	
5	<b>Z010999MCVT001_POWER_ON_HER_IST</b>  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 3), 73  ⇒ click the button "OK" to proceed	To Check in Config. Table (Page 74) 73 Bat.SCOE Col. + TCDec. Col. 6 PM/SW Col. 7		Simul/CHG B A1	Simul/CHG B A1	✓	

Test location: RTEC	Operator DL	Product-Assurance: 	Date: 22/09/08	Time 04 : 30
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Step-No.	IST_START-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
6	<p><b>Z010999MCVT001_POWER_ON_HER_IST</b>            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"> <li>➔ TM chain / TM Acquisition synchronised and locked Status expected</li> <li>➔ View / TM Transfer Frame Monitor              TM frame data should be received before few minutes</li> </ul> <p>⇒ click the button "OK" to proceed</p>					✓	
7	<p><b>Z010999MCVT001_POWER_ON_HER_IST</b>            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>				<p>N/A for "Launch Clean Run" as the cables for CDMU BUS monitor are disconnected</p> <p><i>Application was OFF-line. To be put ON-LINE</i></p>	✓	

Test location: <i>ESTOC</i>	Operator: <i>DL</i>	Product-Assurance:	Date: <i>22/04/08</i>	Time: <i>06:30</i>
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Step-No.	IST_START-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
8	<p><b>D102159SCVT001_GET_ALARM_STATUS</b>            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>					✓	
9	<p><b>D102159SCVT001_GET_ALARM_STATUS</b>            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>					✓	
9b when BCR OCP are detected ACTIVE	<p><b>Z010999MCVT001_POWER_ON_HER_IST</b></p> <p>Temporary workaround until <b>SPR-107 / NCR-3312</b> are solved</p> <p>⇒ click the button "YES" to proceed the workaround</p> <p><b>See SPR 107 / NCR 3312</b></p>	YES			<p><b>NCR 3492:</b> TTRMMemCorEr_A1 := 0  <b>SPR 244:</b> OutOfLimit for SA_Pan?_Temp_N/R (WMB0?569)  <b>SPR 284:</b> WARNING about missing TC  <b>SPR 285:</b> many TCs not acknowledged            For launch clean run with real Battery fully charged, parameters BCR1, BCR2 are expected active.</p>	✓	

Test location: ESTEC	Operator: DL	Product-Assurance:	Date: 21/09/00	Time: 04:30
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*obv*  
→  
PVS # 1 →

Step-No.	IST_START-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P
10	<b>D102159SCVT032TIMESYNCR0</b> 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	<b>Z010999MCVT001_POWER_ON_HER_IST</b> ⇒ Click the button "End TS!" to proceed					✓
12	<b>D102159SCVT001_GET_ALARM_STATUS</b> 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	<b>Z010999MCVT003_IST_START</b> Reply to the prompt: <b>"CDMS Configuration:"</b> <b>"CROME settings PM?????"</b>  If the CROME settings is in accordance with the CROME PAP/CCS of IST Configuration Table (Page3), ⇒ Click the button "Confirm" to proceed	To Check in Config. Table (Page 3) <del>73</del>  CROME PAP/CCS <del>in Col.2</del>			PPA <i>horizontal</i>	✓

*RF#1*  
*dozen of Torx screws events*  
*CC*  
*diagram*

Test location: <i>ESTEL</i>	Operator: <i>DL</i>	Product-Assurance: <i>[Signature]</i>	Date: <i>22/09/08</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	⇒ Click the button "End TS!" to proceed					✓	
15	<p><b>Z010999MCVT003_IST_START</b></p> <p>Reply to the prompt:</p> <p style="text-align: center;"><b>"CDMS Configuration:"</b> <b>"Set configuration"</b></p> <p style="text-align: center;"><b>"Bus ? PCDU ? HPS ? TxChain ? RFDN ???"</b> <b>"TM-OBT ? TMrate Medium (150Kbps)"</b></p> <p>If all these parameter value are in accordance with the IST Configuration Table (Page 3), <b>73</b></p> <p>⇒ Click the button "Confirm" to proceed</p>	<p>To Check in Config. Table (Page 3)</p> <p>BUS <del>-Col.9</del></p> <p>PCDU <del>-Col.11</del></p> <p>HPS <del>-Col.13</del></p> <p>TxCh. <del>-Col.14</del></p> <p>RFDN <del>-Col.16</del></p> <p>TM-Obt <del>-Col.5</del></p>		<p><b>B</b></p> <p><b>B</b></p> <p><b>B</b></p> <p><b>284</b></p> <p><b>B</b></p> <p><b>B</b></p> <p><b>289</b></p> <p><b>B</b></p>	<p>Please note that the TMrate Medium (150 Kbps) is not specified in IST Config. Table on page 3.</p>	✓	
16 Only if Encoder B is req.	⇒ Click the button "End TS!" to proceed				<p>SPR 286: TM check needs repeat</p> <p><del>re-select</del></p> <p><del>N/A</del></p>	✓	

Test location: <b>ESTK</b>	Operator: <b>DL</b>	Product-Assurance: 	Date: <b>27/09/03</b>	Time: <b>06:30</b>
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SEMS  
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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				COV failure TC DC376170		
18	Z010999MCVT003_IST_START Reply to the prompt: "SSMM Configuration" ????????" ⇒ Click the button "Confirm" to proceed	To Check in Config. Table (Page 3) 73 SSMM - Col. 8		2 2202	TC DC376170 DC 005161	V	
19	Z010999MCVT005_IST_START_SSMM Start initialising with Steps 1-2 of IST START SSMM Procedure (see Page 3). Then continue with the next test step of IST_START. 95 <b>NOTE:</b> After completion of Mass Memory initialisation (roughly 12 minutes per bank), i.e. when <b>ALL</b> affected mass memory banks are <b>ON</b> , continue with step 3 of IST START SSMM Procedure (see Page 3). P95				In Launch cases, IST_START_SSMM shall be completely performed before next step		

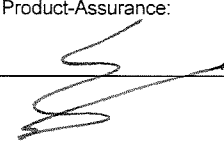
TDV  
priority  
OK  
RIS# 1

Test location: ESTEC	Operator: DL	Product-Assurance: 	Date: 22/09/08	Time: 04:30
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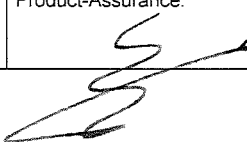
Step-No.	IST_START-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
20	<p><b>Z010999MCVT003_IST_START</b></p> <p>Reply to the prompt: <b>"SWITCH ON CCU ??? and" "START MONITORING in MODE ?"</b></p> <p>⇒ Click the button "Confirm" to proceed</p> <p>In case that TM checks for CCU valves are failed, see Annex D Operator note 11 and perform actions if required.</p>	<p>To Check in Config. Table (Page 3) <b>73</b></p> <p>CCU On Col: 18</p> <p>Mode - Col: 19</p>		<p><b>AD</b></p> <p><b>1</b></p>	<p><b>NCR-3119: Alarms for TMs</b></p> <ul style="list-style-type: none"> <li>o KM130300</li> <li>o KM120300</li> <li>o KM110300</li> </ul> <p>fails status consistency check during CCU A on</p> <p>And for TMs</p> <ul style="list-style-type: none"> <li>o KM130301</li> <li>o KM120301</li> <li>o KM110301</li> </ul> <p>fails status consistency check</p> <p>The following is expected until TC DCT53170 is sent:</p> <ul style="list-style-type: none"> <li>o Events 28417 CCU A monitoring discarded</li> <li>o Events 28418 CCU B monitoring discarded</li> </ul>		
20a	<p>PROMPT "RECORD CCU TEMP IN BACKGROUND?"</p> <p>CLICK "CONFIRM"</p>						
Test location: <b>eneec</b>		Operator: <b>A.</b>	Product-Assurance:	Date: <b>27/04/08</b>	Time: <b>04:30</b>		

*REDLINED FOR ISS H. BM.*

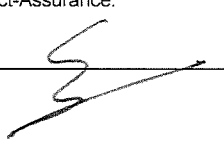
Step-No.	IST_START-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
21 applicable only in launch (IST spec. 5.8.2 5.8.10 5.8.11)	<b>Z010999MCVT003_IST_START</b> Reply to the prompt : <b>"STATUS SPACECRAFT and EGSE (Power ON)"</b> ⇒ Click the button "Confirm" to proceed Reply to the next prompt: <b>"Do you want to stop and notice each failure?"</b> ⇒ Choose "YES" to proceed				N/A		
22 applicable only in launch (IST spec. 5.8.2 5.8.10)	<b>Z010999MCVT1533_IST_STATUS</b> Check the Satellite status displayed and ⇒ Click the button "OK" to proceed				N/A		

Test location: <i>EJTEC</i>	Operator: <i>Dh.</i>	Product-Assurance: 	Date: <i>22/04/08</i>	Time: <i>09: 75</i>
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Step-No.	IST_START-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
23	<b>Z010999MCVT003_IST_START</b> Reply to the prompt: <b>ACMS SCOE Configuration – ACMS Power ON</b> ⇒ Click the button "Confirm" to proceed  Execute ACMS CONFIG procedure (Page <del>2</del> <sup>99</sup> ) in parallel to the IST_START master					✓	
24	<b>Z010999MCVT003_IST_START</b> Reply to the prompt: <b>"SET TCT Table for Ambient Temperature"</b> ⇒ Click the button "Confirm" to proceed					✓	
25	<b>D102159SCVT032EnNomTCSLoops</b> ⇒ Click the button "End TS!" to proceed					✓	
26	<b>D102159SCVT115_CHECK_HCS_OFF</b> ⇒ Click the button "End TS!" to proceed					✓	

Test location: EITEC	Operator DL	Product-Assurance: 	Date: 22/04/08	Time 09 : 00
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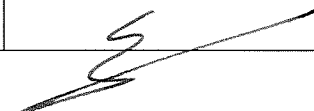
Step-No.	IST_START-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
27	<b>Z010999MCVT003_IST_START</b> Reply to the prompt: "EAT UPLOADING" ⇒ Click the button "Confirm" to proceed					✓	
28	<b>D102159SCVT192_GET_EAT_REPORT</b> Check that every initial entries of the Event Action Table are successfully checked ⇒ Click the button "End TS!" to proceed					✓	
29	<b>D102159SCVT192_GET_EAT_REPORT</b> Check that every initial entries of the Event Action Table are correctly set ⇒ Click the button "End TS!" to proceed					✓	
30	<b>D102159SCVT192_IST_UPLOAD_EAT</b> ⇒ Click the button "End TS!" to proceed					✓	

Test location: PITOL	Operator Du.	Product-Assurance: 	Date: 22/04/08	Time 08:49
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Step-No.	IST_START-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
31	<p><b>Z010999MCVT003_IST_START</b></p> <p>Ckcek 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 3) and checking packets reception.</p>					✓	
32	<p><b>Z010999MCVT003_IST_START</b></p> <p>Do not perform before the completion of the procedures:</p> <ul style="list-style-type: none"> <li>- IST START SSMM and</li> <li>- ACMS Configuration</li> </ul> <p>Cannot be run in parallel with other "active" sequences or TCs send in parallel</p> <p>Reply to the prompt:</p> <p style="text-align: center;"><b>"CDMS CONFIGURATION:"</b> <b>"SURVIVAL REGISTER SETTING"</b> <b>"(Bus ?, PCDU ?, RFDN ?????, TxChain ?, TTR ?, Sep Strap ?????)"</b></p> <p>⇒ Click the button "Confirm" to proceed</p>	<p>To Check in Config. Table (Page 73)</p> <p><del>Bus - Col 10</del></p> <p><del>PCDU - Col 12</del></p> <p><del>RFDN - Col 17</del></p> <p><del>TxCh. - Col 15</del></p> <p><del>TTR - Col 4</del></p> <p><del>Sep Strap Col 3</del></p>	<p>73</p> <p>A</p> <p>73</p> <p>A</p> <p>A</p> <p>A</p> <p>A</p>			✓	

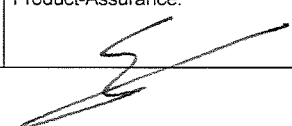
Test location: <b>BSTEC</b>	Operator: <b>DL</b>	Product-Assurance:	Date: <b>22/04/08</b>	Time: <b>04: 50</b>
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Step-No.	IST_START-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
33	<b>D102159SCVT175_SET_SURV_REG</b> ⇒ Click the button "End TS!" to proceed				SPR 289 No TM return for TM check	✓	
34 (only in launch test cases)	<b>Z010999MCVT003_IST_START</b> Prompt: "Check CDMS Tables" ⇒ Click the button "Confirm" to proceed				N/A		
35 (only in launch test cases)	<b>D102159SCVT219_GET_BSW_HEALTH_UIU</b> ⇒ Click the button "End TS!" to proceed				N/A		
36 (only in launch test cases)	<b>D102159SCVT204_GET_MOT</b> ⇒ Click the button "End TS!" to proceed				N/A		

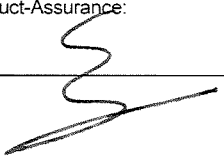
Test location: ESTEC	Operator Dw	Product-Assurance: 	Date: 27/04/08	Time 09:51
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Step-No.	IST_START-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
37 (only in launch test cases)	<b>D102159SCVT192_GET_EAT_REPORT</b> Check that every uploaded entries of the Event Action Table are correctly set ⇒ Click the button "End TS!" to proceed				N/A		
38 (only in launch test cases)	<b>D102159SCVT205_SAT_COM_TCT</b> ⇒ 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		
39 (only in launch test cases)	<b>D102159SCVT207_SAT_COM_FCCT</b> ⇒ Click the button "End TS!" to proceed				N/A		

Test location: PSTOC	Operator Dh.	Product-Assurance: 	Date: 27/04/08	Time 00:51
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Step-No.	IST_START-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
40	<p>Z010999MCVT003_IST_START</p> <p>Reply to the prompt:  <b>"DOWNLINK SSMM PACKET STORE and CEL A&amp;B"</b></p> <p>⇒ Click the button "Confirm" to proceed</p>					✓	
41	<p>D102159SCVT188_IST_DUMP_PKT_STORE</p> <p>⇒ Click the button " End TS!" to proceed</p>				With parameters: 0 80 1 81 2 82 3 83	✓	
42	<p>D102159SCVT188_IST_DUMP_PKT_STORE</p> <p>⇒ Click the button " End TS!" to proceed</p>				With parameters: CEL_A CEL_B <b>All events, warnings and alarms recorded before the dump, are re-occurring during this step</b>	✓	
43	<p>Z010999MCVT003_IST_START</p> <p>⇒ Click the button "End TS!" to proceed</p>					✓	

Test location: ESTOC	Operator R.	Product-Assurance: 	Date: 22/09/08	Time 08:58
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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:  <b>"SSMM CONFIGURATION ??????"</b></p> <p>⇒ Click the button "Continue" to proceed</p>	<p>To Check in Config. Table (Page 273)</p> <p>SSMM Got. 8</p>		2202		✓	
2	<p>D102159SCVT186_IST_SSMM_ON</p> <p>Reply to the prompt <b>"Do you want to continue" "with the current configuration?"</b></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>					✓	

See film  
 DC 190160  
 DC 900180  
 P/S #1

Test location: ESTEC	Operator Ph	Product-Assurance: 	Date: 12/09/08	Time 09:01
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Step-No.	IST_START_SSMM-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
4	<p><b>Z010999MCVT005_IST_START_SSMM</b></p> <p>Reply to the prompt: <b>"OBCP UPLOADING"</b></p> <p>⇒ Click the button "Confirm" to proceed</p> <p>Let run in parallel the sequence  <b>D102159SCVT193_IST_UPLOAD_OBCP</b>            and continue with next step "Packet Store Definition"</p>				occurrence of 2 BSW problems EvtID 30738	✓	
5	<p><b>Z010999MCVT005_IST_START_SSMM</b></p> <p>Reply to the prompt: <b>"Definition of the Packet Store"</b></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  <b>D102159SCVT185_IST_PACKET_STORE_DEF</b></p> <p>If 3 banks (banks 0, 1 and 2) are initialised on each SSMM  <b>D102159SCVT189_IST_PACKET_STORE_DEF2</b></p> <p>If SSMM A banks 0, 1 and 2 and only SSMM B bank 0 are initialised  <b>D102159SCVT178_RMS_PKT_STORE_DEF</b></p> <p>When the requested SSMM bank are initialised</p> <p>⇒ Click the button "Yes" to proceed</p>					✓	


Test location: <i>EST02</i>	Operator: <i>DL</i>	Product-Assurance:	Date: <i>22/04/08</i>	Time: <i>09:29</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 &amp; B  <b>D102159SCVT185_IST_PACKET_STORE_DEF</b></p> <p>If 3 banks are initialised on SSMM A &amp; B  <b>D102159SCVT189_IST_PACKET_STORE_DEF2</b></p> <p>If 3 banks on SSMM A and only 1 on SSMM B are initialised  <b>D102159SCVT178_RMS_PKT_STORE_DEF</b></p> <p>⇒ Click the button "End TS!" to proceed</p>				NCR-3492 occurs: (TTRRMMemCorEr_A 2 := 1)!	✓	
8	<p><b>Z010999MCVT005_IST_START_SSMM</b>  Reply to the prompt: <b>"Initialise MTL Service Buffers"</b></p> <p>⇒ Click the button "Confirm" to proceed</p>				TM(5,4) alarms expected: o Evt_MTLBufADel (ID:26914) o Evt_MTLBufBDel (ID 26915)	✓	
9	<p><b>D102159SCVT209_START_ON_BOARD_SCHEDULE</b></p> <p>⇒ Click the button "End TS!" to proceed</p>				SPR 282 TM failure: too quick check	✓	
10	<p><b>D102159SCVT193_IST_UPLOAD_OBCP</b></p> <p>⇒ Click the button "End TS!" to proceed</p>					✓	

*C&U file*  
*DC 807460*  
*R/S #1*

Test location: <i>eitel</i>	Operator: <i>R</i>	Product-Assurance:	Date: <i>22/04/08</i>	Time: <i>09:09</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: EADS	Operator A.	Product-Assurance: 	Date: 17/04/08	Time 09:10
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Doc. No: HP-2-ASED-TP-0134

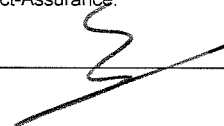
Issue: 3.0

Date: 17.04.2008

File: HP-2-ASED-TP-0134\_Herschel\_IST\_Leading\_Procedure\_\_iss\_3\_0\_17-04-08

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	<b>A102109SPVT003_ACMS_CONFIG25</b> At the prompt "Enter your choice", insert "1" to select "Select/Load ACMS_CONFIG Input File"  ⇒ Click the button "OK" to proceed	1				✓	
3	<b>A102109SPVT003_ACMS_CONFIG25</b>  ⇒ Click the button "Continue" to proceed					✓	
4	<b>A102109SPVT004_ACMS_LOADCONFIG1</b> At the prompt, "Enter your choice:"  ⇒ Click the button "OK" to proceed	To Check in Config. Table (Page#3)  ACMS Config. File <del>Get-20-</del>		151-720		✓	

Test location: B7C	Operator: A	Product-Assurance: 	Date: 22/04/08	Time: 09 : 14
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Step-No.	ACMS_CONFIG-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
5 N/A for "Launch Clean Run"	<b>A102109SPVT003_ACMS_CONFIG25</b> At the prompt "Enter your choice", insert "6" ⇒ Click the button "OK" to proceed	6				✓	
6 N/A for "Launch Clean Run"	<b>A102109SPVT003_ACMS_CONFIG25</b> ⇒ Click the button "Continue" to proceed					✓	
7 N/A for "Launch Clean Run"	<b>A102109SPVT003_ACMS_CONFIG25</b> 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: BT02	Operator [Signature]	Product-Assurance: [Signature]	Date: 22/09/08	Time 09:12
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Step-No.	ACMS_CONFIG-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
8	<p><b>A102109SPVT003_ACMS_CONFIG25</b></p> <p>At the prompt "Enter your choice", insert <b>"4"</b> to select <b>"ACMS Power ON (in Pre-Sep configuration)"</b></p> <p>⇒ click the button "OK" to proceed</p>	4				✓	
9	<p><b>A102109SPVT003_ACMS_CONFIG25</b></p> <p>⇒ Click the button "CONTINUE" to proceed</p>					✓	
10	<p><b>A102109SPVT011_ACMS_ON</b></p> <p>During this sequence, following events are expected:</p> <ul style="list-style-type: none"> <li>- TM(5,4) Event Report and Reconfiguration Log</li> <li>- 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.</li> <li>- Multiple other events TM(5,1), such as "Fdir Task Overrun" or "Fdir Rm Parity Error"</li> </ul>				<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>8522</i>	Operator: <i>Dh.</i>	Product-Assurance: <i>[Signature]</i>	Date: <i>27/04/08</i>	Time: <i>09:10</i>
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Step-No.	ACMS_CONFIG-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
11	<b>A102109SPVT003_ACMS_CONFIG25</b> At the prompt "Enter your choice", Insert <b>"5"</b> to select <b>"Modify ACC SGM/RM content"</b> ⇒ Click the button "OK" to proceed	5				✓	
12	<b>A102109SPVT003_ACMS_CONFIG25</b> ⇒ Click the button "Continue" to proceed					✓	
13	<b>A102109SPVT003_ACMS_CONFIG25</b> At the prompt "Enter your choice", Insert <b>"20"</b> for <b>"Default configuration for separation"</b> ⇒ Click the button "OK" to proceed	20			Expected Out of Limit of AEYYY109 (synchronisation) ACC may become INVALID for a short time  TC PM_Reset (ACY42109) not acknowledge expected	✓	
14	<b>A102109SPVT003_ACMS_CONFIG25</b> ⇒ Click the button "Continue" to proceed					✓	

Test location: <b>BSTEC</b>	Operator: <b>KL</b>	Product-Assurance:	Date: <b>22/04/08</b>	Time: <b>09:26</b>
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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: EITEC	Operator R.	Product-Assurance: 	Date: 22/04/08	Time 05:22
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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.

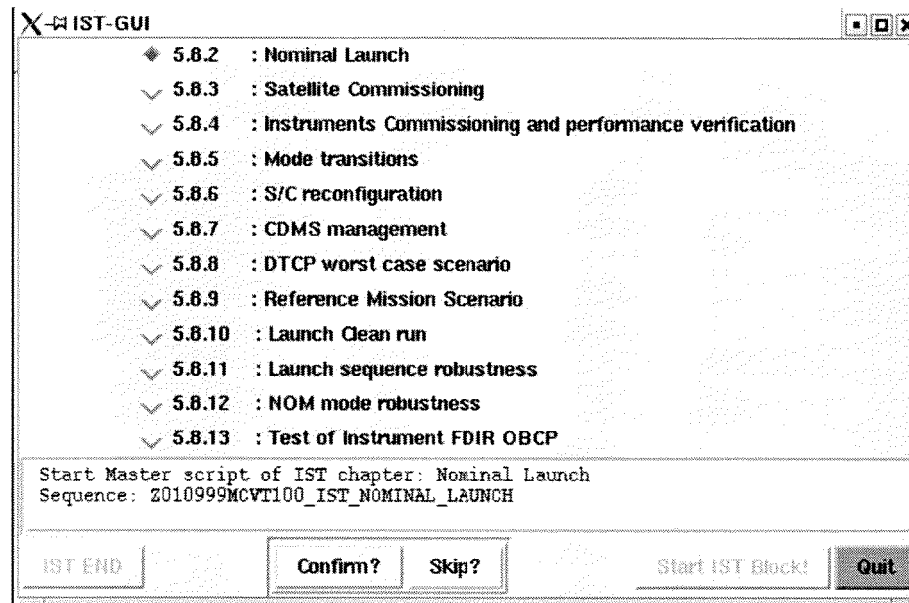


Figure 1: IST\_GUI calling Master sequence, for instance “Nominal Launch”

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

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

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

7.4 IST END Procedure

Step-No.	IST_END-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
1.	<p><b>IST_GUI</b></p> <p>⇒ Click the button "OK" and then</p> <p>⇒ Click the button "IST_END" to proceed</p>						
2.	<p><b>D102159SCVT188_IST_DUMP_PKT_STORE</b></p> <p>⇒ Click the button "Confirm" to proceed</p>						
3.	<p><b>D102159SCVT188_IST_DUMP_PKT_STORE</b></p> <p>⇒ Click the button " End TS!" to proceed</p>						

SAFETY LOOP  
 TRIGGERED  
 S/C OFF

RS#2  
 BDY.  
 22/04/08

Test location: <i>ESTC</i>	Operator <i>S. EISEN</i>	Product-Assurance: <i>B. HOGG</i>	Date: <i>22/4/08</i>	Time <i>17:00</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>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>						
5. Only if CCU A is ON	<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>						

*NOT REQUIRED*

*PLS #2*

*F.M.*

*22/04/08*

Test location:	Operator	Product-Assurance:	Date:	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	<b>Z010999MCVT004_IST_END</b> "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	<b>Z010999MCVT004_IST_END</b> 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	<b>Z010999MCVT004_IST_END</b> Start the sequence A102109SPVT012_ACMS_OFF ? ⇒ Click the button "YES" to proceed						

*PKS #2*  
*BDL*  
*22/04/08*

Test location:	Operator	Product-Assurance:	Date:	Time
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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><b>A102109SPVT012_ACMS_OFF</b></p> <p>During this sequence, following event are expected to occur:</p> <ul style="list-style-type: none"> <li>• TM(5,2) EvtID: 33 Event Report - ACB Rx Failed</li> <li>• TM(5,2) EvtID: 33 Event Report - ACB Rx Failed</li> <li>• TM(5,4) EvtId:16426 Mode SBSM Entry</li> <li>• Event Report - Boot Report and Reconfiguration Log</li> <li>• Event Report - SDB Unhealthy</li> <li>• Multiple "New Tm 251004939"</li> <li>• Multiple "New Tm 251001939"</li> <li>• Multiple "New Tm 251002939"</li> </ul> <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><b>Z102999SCVT002_SREM_OFF</b></p> <p>⇒ Click the button "End TS!" to proceed</p>				SPR 35-290 NCR 3986 Wrong TM set in HPSDB		
11.	<p><b>D102159SCVT174_IST_REDUNDANT_CONF</b></p> <p>⇒ Click the button "Ens TS" to proceed</p>						

*Pls # 2*  
*Side.*  
*22/04/08*

*NOT*  
*LED*

Test location:	Operator	Product-Assurance:	Date:	Time
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Step-No.	IST_END-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
12. Only if Survival Register set with separated flag	<b>Z010999MCVT004_IST_END</b> 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	<b>D102159SCVT175_SET_SURV_REG</b> ⇒ Click the button "End TS!" to proceed						
14. Only if CROME wrongly set	<b>Z010999MCVT004_IST_END</b> 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						

*PLS # 2*  
*22/04/08*

*↓ NOT REQUIRED*

Test location:	Operator	Product-Assurance:	Date:	Time
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Step-No.	IST_END-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
15. Only if CROME wrongly set	<b>D102159SCVT176_WRITE_CROME</b>  ⇒ Click the button "End TS!" to proceed						
16. Only if SSMM is ON	<b>D102159SCVT188_IST_DUMP_PKT_STORE</b>  ⇒ Click the button "End TS!" to proceed						
17. Only if SSMM is ON	<b>D102159SCVT181_Disable_PKT_STORE</b>  ⇒ Click the button "End TS!" to proceed						

*Not Rec*

*Pls #2  
22/04/08*

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

*PK #2*  
*[Signature]*  
*22/04/08*

*Not*

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

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

*PKS # 2*  
*[Signature]*  
*22/07/08*

*Not Rec*

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><b>A102109SPVT003_ACMS_CONFIG25</b></p> <p>At the prompt "Enter your choice", insert "2" to select <b>"Transition SCM to OCM"</b></p> <p>⇒ Click the button "OK" to proceed, then "Continue"</p>	2					
25.	<p><b>A102109SPVT003_ACMS_CONFIG25</b></p> <p>At the prompt Menu 7 "Enter your choice", insert "5" to select <b>"Reaction wheels spin down"</b></p> <p>Click the button "OK" to proceed, then "Continue"</p>	5					
26.	<p><b>A102109SPVT003_ACMS_CONFIG25</b></p> <p>At the prompt Menu 9 "Enter your choice", insert "1" to select <b>"Switch off ACMS"</b></p> <p>Click the button "OK" to proceed, then "Continue"</p>	1					

*Pls # 2*  
*34000*  
*22/04/08*

*NOT LOG*

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

Step-No.	IST_END-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
27.	<p><b>A102109SPVT012_ACMS_OFF</b></p> <p>During this sequence, following event are expected to occur:</p> <ul style="list-style-type: none"> <li>• TM(5,4) EvtId:16426 Mode SBSM Entry</li> <li>• Event Report - Boot Report and Reconfiguration Log</li> <li>• Event Report - SDB Unhealthy</li> <li>• TM(5,2) EvtID: 33 Event Report - ACB Rx Failed</li> <li>• TM(5,2) EvtID: 33 Event Report - ACB Rx Failed</li> <li>• Multiple "New Tm 251004939"</li> <li>• Multiple "New Tm 251001939"</li> <li>• Multiple "New Tm 251002939"</li> <li>• Multiple TM(5,1) such as "FDir Task Overrun", etc...</li> </ul>						
28.	<p><b>A102109SPVT003_ACMS_CONFIG25</b></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					
29.	<p><b>A102109SPVT017_ACMS_CRS_BACKGROUND</b></p> <p>⇒ Terminate the sequence.</p>						

*PK # 2  
B. HOGG  
22/04/08*

*Not  
LED*

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


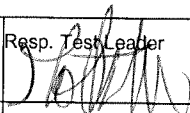

		Test Change	Curr. No.: #1	
			Date 22-04-08	
			Page 1 of 1	
Test designation S/C RECONF		Test Procedure IST-START	Issue 3	Rev. 0
Test step changed AFTER 10		Reason for Change SCRIPT FAILURE		
<p>TIME SYNCRO SCRIPT DID NOT OPERATE CORRECTLY.</p> <p>RUN PROVA_ALESSIO INSTEAD</p>				
Prepared by: 	Resp. Test Leader 		Project Engineer	
PA/QA 	Prime		Customer	

Table 8.1-1: Procedure Variation Sheet

8.1 Procedure Variation Summary

		Test Change	Curr. No.: #2	
			Date 22-04-08	
			Page 1 of 1	
Test designation S/C RECONF		Test Procedure IST_START	Issue 3	Rev. 0
Test step changed / IN STEAD OF / ISTEND		Reason for Change S/C OFF SAFETY LOOP TRIP		
<p>RECOVERY + SWITCH OFF AFTER BSCE TRIP DURING S/C RECONF PROCEDURE TPO134.</p> <ul style="list-style-type: none"> <li>- SIMULATE TRAFFIC ON RT13 (ACMS TM)</li> <li>- RUN SCRIPT Z010999MCVTOO1-POWER_ON (PMA SETTING BSCE + SAS)</li> <li>- SEND RM A &amp; B DISABLE CMD'S (4 OF EACH CMD RM_A_DISABLE &amp; RM_B_DISABLE)</li> <li>- RUN (A102109SPUTO11-ACMS_ON) (A102109SPVTO11-ACMS_OFF) CALLED FROM ACMS_CONFIG-25.</li> <li>- RUN Z010999MCVTOO2-POWER_OFF</li> </ul>				
Prepared by: S. EISEY		Resp. Test Leader		Project Engineer
PA/QA J.M. Z. HOOPER		Prime		Customer

Table 8.1-1: Procedure Variation Sheet

**8.2 Non Conformance Report (NCR) and SPR Summary**

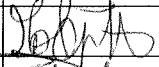


The status of all NCRs/SPRs generated during the test shall be given in the table below:

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	22/04/08	
Test Conductor	22/04/08	
PA Responsible	22/04/08	

## 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 D102159SCVT032TIMESYNCR0
|----> 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 D102159SCVT032TIMESYNCR0
|----> 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	S/C Reconfig
Session ID	2008-04-22_04-23_herschel-hpass22 - REALTIME-SC-RECONF
Start Time:	04:23
End Time	17:55
CVS Tag for Test	ISTT-PART-1-TP-0134-ISS-SC-RECONF- END-001
Applicable IST Specification	HP-2-ASP-SP-0339 Herschel-IST ISS 6-0
Test conductor	<i>[Signature]</i>
QA Approval	<i>[Signature]</i>

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

<b>Title:</b> ACMS SCOE does not boot	<b>Date:</b> 06/02/08
<b>Observation:</b>	
The ACMS SCOE does not boot.	
Reason: One of the STR UCE (Unit Checkout Equipment) electrical stimuli programs hangs.	
<b>Operator Action:</b>	
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

<b>Title:</b> DOD Alarm	<b>Date:</b> 14/02/08
<p><b>Observation:</b></p> <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>	
<p><b>Operator Action:</b></p> <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 -&gt; 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&amp;update  On the window "BS SCOE Config" change the Battery Voltage from 19 to 25,4  The push the button save&amp;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

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

END OF DOCUMENT

Insert actual distribution list

Attachment 2 to Section 6.7:  
As-Run Procedure HP-2-ASED-TP-0190

FORMAL RUN  
 22-4-08 AS-RUN

2008-04-22-04-23 - herchelmu - hps22 -  
 REALTIME - SC - RECONF

Title: **Herschel Satellite IST Test Case 'S/C Reconfiguration'**

CI-No:

Prepared by:	Functional Team	Date:	21/04/2008
Checked by:	C.Much <i>e. Much</i>		22/4/2008
Product Assurance:	J. Hall <i>J. Hall</i>		21/4/2008
Configuration Control:	W.Wietbrock		
TASF Engineering:	G.Beaufils <i>po. Beaufils</i>		21 APR 08
TASF Test Director	S.Mooney <i>S. Mooney</i>		21/4/2008
Project Management:	Dr.W. Fricke <i>Dr. Fricke</i>		22.04.08
Approved by TASF	D.Montet <i>P. LELIEVRE JL</i>		21/4/2008
Distribution:	See Distribution List (last page)		

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<b>Issue</b>	<b>Date</b>	<b>Sheet</b>	<b>Description of Change</b>	<b>Release</b>
Draft	07/03/08		Initial version	0
1	17/04/08		Initial Release	0
1.1	21/04/08		New Release. Minor Updates including: adding footer for Signature in step by step Correcting footers in later sections	

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## 1 Scope

This Test Procedure contains the step by step procedure for the IST Test case "S/C Reconfiguration". 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 S/C Reconfiguration 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 Operational Flow

In paragraph 7 is provided the detailed step-by-step test procedure.

## **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**

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 Software Configuration**

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

### **4.3 SCOE Cables Configuration**

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

### **5.4 GSE**

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

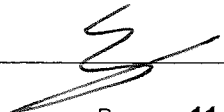
## **6 Verification Requirements and Test Criteria**

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

**7 Test Execution Step-by-Step Procedure**

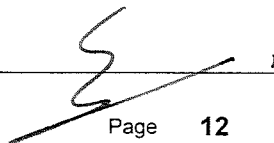
**7.1 5.8.6.2 Test start configuration**

Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
10.	Z010999MCVT080_IST_FDIR_ASTRUM if appear the message "The HPCCS session's name is defined without FDIR_X"  Click ok to continue					✓	
20.	Z010999MCVT080_IST_FDIR_ASTRUM  Start Herschel IST Reconfiguration (FDIR) section 5.8.6  Press yes					✓	
30.	Z010999MCVT080_IST_FDIR_ASTRUM  TT&C SCOE CONNECTION  Click the button Confirm to proceed					✓	


Test location: B173C	Operator DL	Product-Assurance: 	Date: 22/04/08
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Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
40.	<b>Z010999MCVT080_IST_FDIR_ASTRUM</b> CDMS Setting for Separation Click the button Confirm to proceed					✓	
50.	<b>D102159SCVT152_IST_LAUNCH_SUNACQ</b> Before to perform next step wait until the Arrive at the point in which wait for separation straps open. (the separation straps will be open by ACMS performing next step)					✓	
60.	<b>A102109SPVT103_ACMS_CONFIG25</b> To go in menu 3.0 Please select Main Menu 1.0: Option 88 Click the button OK to proceed					✓	
70.	<b>A102109SPVT103_ACMS_CONFIG25</b> Click the button Continue to proceed					✓	

Test location: BITEC	Operator A	Product-Assurance: 	Date: 22/04/06
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Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
80.	<b>A102109SPVT103_ACMS_CONFIG25</b> Select SEPARATION (opening separation straps). Main Menu 3.0: Option 2  Click the button OK to proceed					✓	
90.	<b>A102109SPVT103_ACMS_CONFIG25</b>  Click the button Continue to proceed					✓	
100.	<b>A102109SPVT034_ACMS_SAM_MON</b>  Want to continue to monitor SAM sun pointing mode ? Select Option no  Click the button OK to proceed					✓	
110.	At appearance of <b>A102109SPVT017_ACMS_CRS_BACKGROUND</b> Script window can be put in the background					✓	
120.	<b>D102159SCVT152_IST_LAUNCH_SUNACQ</b> At the end of the sequence Click the button "End TS!" to proceed					✓	

Test location: BSTER	Operator A.	Product-Assurance: 	Date: 22/09/08
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Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
130.	<b>Z010999MCVT080_IST_FDIR_ASTRUM</b> Transition to NOMINAL (transition to nominal with CDMS) Click the button Confirm to proceed					✓	
140.	<b>D102159SCVT108_IST_SUNACQ_NOM</b> Click the button "End TS!" to proceed					✓	
150.	<b>A102109SPVT103_ACMS_CONFIG25</b> Select Transition to OCM. Main Menu 4.0 SAM Phase: Option 6 Click the button OK to proceed					✓	
160.	<b>A102109SPVT103_ACMS_CONFIG25</b> Click the button Continue to proceed					✓	
170.	<b>A102109SPVT036_ACMS_STR_ON</b> Do you want to change the current STR in use ?: Answer no Click the button OK to proceed					✓	

Test location: B 5702	Operator DL	Product-Assurance: D. LAMONBY	Date: 22/09/08
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Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
180.	<b>A102109SPVT043_TRANSITION_TO_OCM</b> Verify after ca. 7 min if ACMS mode is = OCM point fine (Earth pointing)					✓	
190.	<b>A102109SPVT043_TRANSITION_TO_OCM</b> Verify in AND: ZAA00999 if Est Attitude Q1..Q4 is close to Cur Target Q1/Q3 = 0, Q2=0.6 / Q4= 0.79					✓	
200.	<b>A102109SPVT043_TRANSITION_TO_OCM</b> Verify AESM3002 = OCM point fine or in synoptic SAT – ACMS – ACC – Mode Nominal					✓	
210.	<b>A102109SPVT043_TRANSITION_TO_OCM</b> SUSPEND click on script name  Click the button RESUME to proceed				FCV duty cycle fail	✓	
220.	<b>A102109SPVT103_ACMS_CONFIG25</b> Select Transition to SCM (Science mode). Main Menu 7.0: Option 3  Click the button OK to proceed					✓	

Test location: ESTEC	Operator DL	Product-Assurance: D. LAMONBY	Date: 22/09/08
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Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
230.	<b>A102109SPVT103_ACMS_CONFIG25</b> Click the button Continue to proceed					✓	
240.	<b>A102109SPVT038_RWL_ON</b> Do you want to change actual on-board wheel set selected in the nominal configuration ? RWL 1-2-4 selected, RWL-3 not selected  Click the button NO to proceed ?					✓	
250.	<b>A102109SPVT042_RWL_SPINUP</b> Change actual Angular Momentum (initial values)? Option: no  Wait for ca. 10 min					✓	
260.	<b>OPERATOR INFO</b> Verify RWL speed in plotting window  1. Select REALTIME->DESKTOP->MONITORING->TM Plotting Tool  2. Select Directory: Home/heracms/plotting 3. Select FILE -> LOAD -> 15 (RWLs_REAL(cal)&Simul_SPEED.txt)					✓	

Test location: BITEC	Operator D.	Product-Assurance: D. LAMONBY	Date: 22/04/08
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Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
270.	<b>OPERATOR INFO</b> Verify 4x RWL momentum parameters  AEWMA002 = 11.0 +/- 25% (RWL1 momentum) AEWMB002 = - 9.4 +/- 25% (RWL2 momentum) AEWMC002 = 0.0 +/- 25% (RWL3 momentum) AEWMD002 = - 8.5 +/- 25% (RWL4 momentum)					✓	
280.	<b>A102109SPVT042_RWL_SPINUP</b>  Target wheel speed not reached after 600 sec SUSPEND click on script name  Click the button RESUME to proceed					✓	
290.	<b>A102109SPVT042_RWL_SPINUP</b>  Click the button "End TS!" to proceed					✓	

Test location: ESTEC	Operator DL	Product-Assurance: D. LAMONBY	Date: 22/04/08
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Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
300.	<p><b>OPERATOR INFO</b></p> <p>Verify in SAT synoptic SAT – ACMS – ACC – Mode Nominal = SCM Point Fine</p> <p>Verify in Telemetry window ZAAF0999 (diagnostic TM)</p> <p>As long as the ACMS is switched On the Menu Box has to be present !!!</p>					✓	
310.	<p><b>Z010999MCVT080_IST_FDIR_ASTRUM</b></p> <p>ACMS is in SCM point Fine</p> <p>Click ok to procede</p>					✓	
320.	<p><b>Z010999MCVT080_IST_FDIR_ASTRUM</b></p> <p>Switch ACMS units (STR2 and GYRE 1) to BUS B</p> <p>Click the button Confirm to proceed</p>				SPR 456 (07:56)	✓	
330.	<p><b>Z010999MCVT080_IST_FDIR_ASTRUM</b></p> <p>Transition from SAS 900W and BS 24V to SAS 1475W and BS full charged</p> <p>Click the button Confirm to proceed</p>					✓	

Test location: DTR	Operator An	Product-Assurance: D. GARDONBY	Date: 22/04/08	07:56
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Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
340.	<p><b>Z010999MCVT080_IST_FDIR_ASTRUM</b></p> <p>Switch on SREM</p> <p>Click the button Confirm to proceed</p>					✓	
350.	<p><b>Z010299SCVT001_SREM_ON</b></p> <p>Click the button "End TS!" to proceed</p>					✓	
360.	<p><b>Z010999MCVT080_IST_FDIR_ASTRUM</b></p> <p>Set RX1 to 125 BPS &amp; Switch OFF TX Chain &amp; STOP the Onboard Scheduling</p> <p>Click the button Confirm to proceed</p>					✓	
370.	<p><b>Z010999MCVT080_IST_FDIR_ASTRUM</b></p> <p>Power ON HIFI ICU A</p> <p>Click the button Confirm to proceed</p>					✓	
380.	<p><b>OPERATOR INFO</b></p> <p>On HPCCS start Packet History displays for the following APIDs:1024,1026</p>					✓	


Test location: <i>Estec</i>	Operator: <i>Labito</i>	Product-Assurance: <i>D. LAMONBY</i>	Date: <i>22/04/08 07:56</i>
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Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
390.	Z102999SCVT014_ASDGEN_HIFIPWRON_P FM HiFi ICU standalone switch on. Select NO to abort TS if not correct.  Click the button "YES" to proceed				ANDs HA000289 HA004289	✓	
400.	Z102999SCVT014_ASDGEN_HIFIPWRON_P Set Bus Profile Back to Original Setting? (yes or no)  Click the button "YES" to proceed					✓	
410.	<b>OPERATOR INFO</b> Verify HK TM packets are being received on APIDs 1024 & 1026					✓	
420.	Z010999MCVT080_IST_FDIR_ASTRUM Power ON PACS Warm Units  Click the Confirm button to proceed					✓	
430.	<b>OPERATOR INFO</b> On HPCCS start Packet History displays for the following APIDs: 1152, 1154					✓	

Test location: <i>ESTEC</i>	Operator <i>Flaberto</i>	Product-Assurance: <i>D. LAMONBY</i>	Date: <i>22/04/08</i>	<i>8.10</i>
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Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
440.	Z102999SCVT010_ASDGEN_PACSPWRON_P FM PACS Switch ON in Warm or Cold conditions, FPU connected - Select NO to abort TS if not correct  Press YES to proceed					✓	
450.	Z102999SCVT010_ASDGEN_PACSPWRON_P At the prompt to confirm that OBCP are loaded and enabled  Press YES to proceed					✓	
460.	<b>OPERATOR INFO</b> The test script will power on all PACS warm units, force boot the DPU ASW and configure the instrument to SAFE (Standby mode)					✓	
470.	Z102999SCVT010_ASDGEN_PACSPWRON_P Set Bus Profile Back to Original Setting? (Yes or No)  Select <b>YES</b>					✓	
480.	<b>OPERATOR INFO</b> Verify HK TM packets are being received on APIDs 1152 & 1154					✓	

Test location: <i>Estec</i>	Operator: <i>Steduto</i>	Product-Assurance: 	Date: <i>22/04/08 08:12</i>
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Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
490.	<b>OPERATOR INFO</b> 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:					✓	
500.	<b>Z010999MCVT080_IST_FDIR_ASTRUM</b> Power ON SPIRE DPU and DRCU  Click the Confirm button to proceed					✓	
510.	<b>OPERATOR INFO</b> On HPCCS start Packet History displays for the following APIDs:1280,1282					✓	
520.	<b>Z102999SCVT004_ASDGEN_SPIREPWRON_P</b> SPIRE Switch ON for IST Debug only in warm conditions - Select NO to abort TS if not correct  Click YES to proceed					✓	

Test location: ESTC	Operator Dh	Product-Assurance: 	Date: 21/04/08
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Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
530.	<b>OPERATOR INFO</b> 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).					✓	
540.	<b>Z102999SCVT004_ASDGEN_SPIREPWRON_P</b> Set Bus Profile Back to Original Setting?  Click YES button to proceed					✓	
550.	<b>OPERATOR INFO</b> Verify HK TM packets are being received on APIDs 1280 & 1282					✓	
560.	<b>Z010999MCVT080_IST_FDIR_ASTRUM</b> CEL A&B Downlink, Get ACC RM Status and Dump the Event Buffers  Click the Confirm button to proceed					✓	
570.	<b>D102129SCVT188_IST_DUMP_PKT STORE</b> Click "End TS!" to proceed					✓	

Test location: BTTC	Operator DL	Product-Assurance: D. LAMONBY	Date: 27/04/08
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Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
580.	<b>Z010999MCVT080_IST_FDIR_ASTRUM</b> Status Spacecraft (CDMS -> NOM ACMS -> SCM and EGSE (5.8.6.2) Click the button Confirm to proceed					✓	
590.	<b>Z010999MCVT080_IST_STATUS</b> Do you want to stop and notice each failure ? Click the button YES to proceed					✓	
600.	<b>Z010999MCVT080_IST_STATUS</b> Click the button OK to proceed					✓	
	<b>CDMS Level 3a</b>						
630.	<b>Operator INFO</b> Please open in realtime/desktop/commanding/onboard queue					✓	
640.	<b>Z010999MCVT080_IST_FDIR_ASTRUM</b> Start MTL (FDIR) (ca. 5 min) Click the button Confirm to proceed				<b>Note:</b> do not abort SCOE application. -> Enter always no	✓	
650.	<b>D0102159SCVT153_MTL_FDIR</b> Click the button "End TS!" to proceed					✓	

Test location: PJTOL	Operator D	Product-Assurance: D. LAMOURY	Date: 22/04/08
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Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
660.	<p>Check in SCM CIR Point</p> <p>Click the button Confirm to proceed</p>					✓	
670.	<p><b>OPERATOR INFO</b></p> <p>One time that the sequence A02109spvt087_acms_ist_FN Is running perform the next step and go ahead with the test</p>					✓	
	<b>Trigger the Software Alarm</b>						
680.	<p><b>Z010999MCVT080_IST_FDIR_ASTRUM</b></p> <p>Perform CDMS Level 3A Transition from NOMINAL to EARTH</p> <p>Click the button Confirm</p>					✓	
690.	<p><b>OPERATOR INFO</b></p> <p>Wait for TC alarm</p> <p>(see in command history for DCN36170 FdirSwAlarm -&gt; yellow)</p> <p>After 20 sec verify in Telemetry window ZAA01999</p> <p>Verify AESM3002 ACMSPMain AID = SCM slew init to SCM slew CIR (see also SAT synoptic)</p>					✓	

Test location: <i>ESTEC</i>	Operator <i>Roberto</i>	Product-Assurance: <i>D. LAMONBY</i>	Date: <i>22/04/08</i>	<i>8:07</i>
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Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
700.	<b>ACMS_CRS_BACKGROUND</b> IF TM packet not received -> window appears Enter no to proceed					✓	
710.	<b>CDMS_ANALYSIS_FDIR_IST</b> Click the button "End TS!" to proceed					✓	
720.	<b>DUMP_PKT STORE</b> Click the button "End TS!" to proceed					✓	
730.	<b>FDIR_NOM_TO_EARTH_3a</b> Click the button "End TS!" to proceed					✓	
740.	<b>Z010999MCVT080_IST_FDIR_ASTRUM</b> Switching to RF (ca. 20 min) Click the button Confirm					✓	
750.	<b>OPERATOR INFO</b> Verify (pyramide, off, mid curve, 3 curves & pyramide) signal at TT&C SCOE Verify in Packet History TM reception					✓	

Test location: ESTEC	Operator D.	Product-Assurance: D. LAMONEY	Date: 21/04/08
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Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
760.	Z010999MCVT080_IST_FDIR_ASTRUM Get RM Status and Dump the event buffer to get the CIR event  Click the button Confirm					✓	
770.	Z010999MCVT080_IST_FDIR_ASTRUM Status Spacecraft (CDMS -> EAM / ACMS -> SCM) and EGSE)  Click the button Confirm to proceed					✓	
780.	Z010999MCVT080_IST_FDIR_ASTRUM Do you want to stop ... ? Enter YES					✓	
790.	Z010999MCVT153_IST_STATUS Please open OnBoard Queue in RealTime window  Click the button Confirm					✓	

Test location: E1T5C	Operator Dh.	Product-Assurance: D. LAMONBY	Date: 22/04/08
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Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
800.	<b>OPERATOR INFO</b> Verify that Are all MTL TCs in onboard queue disabled ?						
810.	<del><b>Z010999MCVT080_IST_STATUS</b> Should CCU HK automatically be tested ? Enter YES</del>						
820.	<b>Z010999MCVT080_IST_STATUS</b> Click the button "OK" to proceed					✓	
	<b>CDMS Level 3b</b>						
830.	<b>Z010999MCVT080_IST_FDIR_ASTRUM</b> Switch S/C control (TC and TM) from RF link to UMB  Click the button Confirm to proceed					✓	
840.	<b>Z010999MCVT080_IST_FDIR_ASTRUM</b> Switching ON STR-1 ()  Click the button Confirm to proceed					✓	
850.	<b>Z010999MCVT080_IST_FDIR_ASTRUM</b> Preparatory Task for CDMU Alarm 3b  Click the button Confirm to proceed					✓	
Test location: <i>EJoc</i>		Operator: <i>Dh.</i>		Product-Assurance: <i>D. LAUNBY</i>		Date: <i>22/04/08</i>	

*PVS*  
*# 7*

Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
860.	<b>Z010999MCVT003_SREM_ACQ_START</b>  Click the button "End TS!" to proceed				ACCUMULATION is OK instead of YES	✓	
870.	<b>Z010999MCVT080_IST_FDIR_ASTRUM</b>  Perform CDMS level 3b Transition from Earth to Earth, before first 3a alarm  Click the button Confirm to proceed					✓	
880.	<b>Z010999MCVT080_IST_FDIR_ASTRUM</b>  Perform CDMS level 3b Transition from Earth to Earth, first 3a alarm  Click the button Confirm to proceed					✓	
900.	<b>D102159SCVT154 CDMS_ANALYSIS_FDIR_IST</b>  Click the button "End TS!" to proceed					✓	
910.	<b>Z010999MCVT080_IST_FDIR_ASTRUM</b>  Status Spaceraft (CDMS ->EAM   ACMS ->SCM) and EGSE  Click the button Confirm to proceed				PACS OFF! STEP accumulation YES!	✓	
920.	<b>Z010999MCVT153_IST_STATUS</b> Click the button YES to proceed					✓	

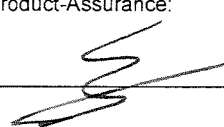
Test location: B)TSC	Operator A.	Product-Assurance: D. LAMONBY	Date: 02/09/08
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Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
930.	<b>Z010999MCVT153_IST_STATUS</b> Click the button "OK" to proceed					✓	
940.	<b>Z010999MCVT080_IST_FDIR_ASTRUM</b> Perform CDMS level 3b Transition from Earth to Earth, before second 3a alarm Click the button Confirm to proceed					✓	
950.	<b>Z010999MCVT080_IST_FDIR_ASTRUM</b> Change the XPND Settings Click the button Confirm to proceed					✓	
960.	<b>Z010999MCVT080_IST_FDIR_ASTRUM</b> Perform CDMS level 3b Transition from Earth to Earth, second 3a alarm Click the button Confirm to proceed					✓	
970.	<b>Z010999MCVT080_IST_FDIR_ASTRUM</b> Configure the TT&C SCOE settings for RF Click the button Confirm to proceed					✓	

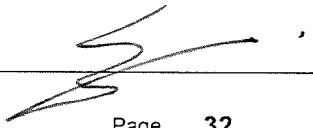
Test location: EJTC	Operator Dh.	Product-Assurance: DIAMONBY	Date: 22/04/08
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Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
980.	<b>Z010999MCVT080_IST_FDIR_ASTRUM</b> Perform CDMS level 3b Transition from Earth to Earth, after second 3a alarm  Click the button Confirm to proceed					✓	
990.	<b>D102159SCVT154 CDMS_ANALYSIS_FDIR_IST</b> Click the button "End TS!" to proceed					✓	
1000.	<b>D102159SCVT188_IST_DUMP_PKT_STORE</b> Click the button "End TS!" to proceed					✓	
1010.	<b>Z010999MCVT080_IST_FDIR_ASTRUM</b> Get RM Status and Dump the Event Buffers to get the CIR Event (After 3b)  Click the button Confirm					✓	
1020.	<b>Z010999MCVT080_IST_FDIR_ASTRUM</b> Status Spacecraft (CDMS ->EAM ACMS ->SCM AND EGSE  Click the button Confirm					✓	
1030.	<b>Z010999MCVT153_IST_STATUS</b> Enter: YES <i>Do you want to step out voice...</i>					✓	

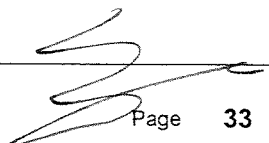
PVS #5

Test location: <i>ESTEC</i>	Operator <i>PL</i>	Product-Assurance: 	Date: <i>17/09/08</i>
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Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
1040.	<b>Z010999MCVT153_STATUS_IST</b> Click the button OK to proceed					✓	
1050.	<b>Z010999MCVT080_IST_FDIR_ASTRUM</b> Re-Activate MTL Click the button Confirm to proceed					✓	
1060.	<b>Z010999MCVT080_IST_FDIR_ASTRUM</b> Perform CDMS transition Earth to Nominal Click the button Confirm to proceed					✓	
1070.	<b>D102159SCVT158_FDIR_MOMINAL_SUNACQ</b> Click the button "End TS!" to proceed					✓	
1080.	<b>D102159SCVT176_WRITE_CROME</b> Click the button "End TS!" to proceed					✓	

Test location: B JTC	Operator DL	Product-Assurance: 	Date: 22/04/08
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Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
1090.	<b>Z010999MCVT080_IST_FDIR_ASTRUM</b> Status Spacecraft (CDMS -> NOM ! ACMS -> SCM) and EGSE  Click the button Confirm to proceed					✓	
1100.	<b>Z010999MCVT153_IST_STATUS</b>  Enter: YES					✓	
1110.	<b>Z010999MCVT153_STATUS_IST</b>  Click the button OK to proceed					✓	
1120.	<b>Z010999MCVT080_IST_FDIR_ASTRUM</b> Set PACS in prime mode.  This step will start the script P102999SCVT904_ASDGENPACS_nomSpect This sequence simulate the science. Data kill this sequence after the acms level 4					✓	
1130.	<b>P102999SCVT904_ASDGENPACS_nomSpect</b> FM PACS simulate spectroscopy for test in any condition. Abort TS if not correct  Click the button YES to proceed					✓	

Test location: <i>Esdoc</i>	Operator <i>Stobato</i>	Product-Assurance: 	Date: <i>22/04/08 11:34</i>
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Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
1140	Preparatory Tasks for ACMS alarm level 4  Click the button Confirm to proceed					✓	
1150	Perform ACMS Level 4 Transition from SCM to SASM, Error Injection on AAD  Click the button Confirm to proceed					✓	
1160	<del>Timeout occurred (no TM) (see also System Status at TM/TC DFE)  Break CEV to proceed</del>				<del>STEP NOT REQUIRED</del>		
1170	Change the TT&C SCOE Settings to work at 125 bps  Click the button Confirm to proceed					✓	

PVS  
#6

Test location: <b>ESTEC</b>	Operator <b>P. Modesto / M. Theunis</b> <i>slm</i>	Product-Assurance: <b>[Signature]</b> <b>B. Hoog</b>	Date: <b>22-04-2008</b> <b>11:55</b>
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Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
1180.	<p>Z010999MCVT080_IST_FDIR_ASTRUM</p> <p>Wait ca. 25 min</p> <p>Wait for TT&amp;C SCOE lock &amp; Sync and then TM to reappear (see System Status at TM/TC DFE, observe Telemetry Packet History window)</p>				11:55	✓	
1190.	<p>Z010999MCVT080_IST_FDIR_ASTRUM</p> <p>After ACMS Level 4 Transition from SCM to SASM, check ACMS settings</p> <p>Click the button Confirm to proceed</p>				11:56	✓	
1200.	<p>Z010999MCVT080_IST_FDIR_ASTRUM</p> <p>Are you executing the test in RF ?</p> <p>Click the button YES to proceed</p>				11:57	✓	
1210.	<p>Z010999MCVT080_IST_FDIR_ASTRUM</p> <p>Only for info Verify that sun remains within operational zone...</p> <p>Wait for 5 min.</p> <p>Verify that ... Wait for 5 min</p>				12:03	✓	

Test location: ESTEC	Operator M. THEUNISSEN	Product-Assurance: <i>[Signature]</i>	Date: 22/04/08 12:03
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Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
1220.	Z010999MCVT080_IST_FDIR_ASTRIMUM Check Status of SunAcquisition Mode of CDMS Click the button Confirm to proceed				12:06	✓	
1230.	D10299MCVT159_FDIR_CHECK_SUNACQMODE Click the button "End TS!" to proceed				12:11	✓	
1240.	Z010999MCVT080_IST_FDIR_ASTRIMUM Status Spacecraft (CDMS -> SAM ! ACMS -> SASM) and EGSE Click the button Confirm to proceed					✓	
1250.	Z010999MCVT080_IST_STATUS Do you want to stop and notice each failure ? Click the button YES to proceed					✓	
PVS #6 ▷ 1260.	<del>Z010999MCVT080_IST_STATUS Please open onboard queue And answer to the question</del>				<del>STEP NOT RECORDED</del>		

Test location: ESTEC	Operator M. THEUNISSEN	Product Assurance: <i>[Signature]</i>	Date: 22/04/2008	12.50
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Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
1270.	Z010999MCVT080_IST_STATUS  Click the button "End TS!" to proceed					✓	
	<b>ACMS recovery from Survival Mode (ACMS SASM to SAM)</b>						
1280.	Z010999MCVT080_IST_FDIR_ASTRUM  SWITCH TM-TC RATE FROM 500BPS/125BPS TO 5KBPS/4KBPS  Click the button Confirm to proceed					✓	
1290.	Z010999MCVT080_IST_FDIR_ASTRUM Operator info Wait to receive TM After click ok					✓	
1300.	Z010999MCVT080_IST_FDIR_ASTRUM  Perform ACMS Transition from SASM to SAM  Click the button Confirm to proceed					✓	
1310.	Z010999MCVT080_ACMS_IST_FN Are you executing the test in RF ?  Click the button YES to proceed					✓	

Test location: <i>ESTR</i>	Operator: <i>S. ESDEN</i>	Product-Assurance: <i>D. LAMONBY</i>	Date: <i>22/4/08</i>	<i>13-08</i>
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Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
1320	Z010999MCVT080_ACMS_IST_FN Are you executing the test in RF ? Click the button YES to proceed				error in script SPR 0457	✓	
<b>C. Verify Recovery Success</b>							
1330	Z010999MCVT080_IST_FDIR_ASTRIMUM Status Spacecraft (CDMS -> SAM ! ACMS -> SAM) and EGSE Click the button Confirm to proceed					✓	
<b>CDMS level 4 A. Preparatory tasks</b>							
1340	Z010999MCVT080_IST_STATUS Click the button yes to proceed					✓	
PVS #6 ▷ 1350	<del>Z010999MCVT080_IST_STATUS Verify the onboard queue and answer to the question</del>				<del>STEP NOT REQUIRED.</del>		
1360	Z010999MCVT080_IST_STATUS OK Click the button "End TS!" to proceed					✓	

Test location: ESTEC	Operator S. ELIUM	Product-Assurance: D. LAMONBY	Date: 22/4/08 13:44
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Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
1370.	Switch S/C Control (TC and TM) from RF link to UMB Click the button Confirm					✓	
1380.	RE-Activate MTL Click the button Confirm					✓	
1390.	COMMAND ACMS FDIR TO AFO Click the button Confirm					✓	
1400.	Perform CDMS Transition SUNACQ to Nominal (and ACMS to SCM) Click the button Confirm				PVS	✓	

(D102159 SCVT215 - ASED\_TM\_150 - KBPS - IST)  
CLICK "END TS!" PVS # 4

Test location: <i>ESTEL</i>	Operator: <i>SELSER</i>	Product-Assurance: <i>D. LAMONBY</i>	Date: <i>22/4/08</i>	<i>1349</i>
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Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
1410.	<b>A102109SPVT103_ACMS_CONFIG25</b> From main menu, select Option 77 'Jump to another entry point' and choose: Menu 4.0 SAM Phase  Click the button OK to proceed					✓	
1420.	<b>A102109SPVT103_ACMS_CONFIG25</b> Select Transition to OCM. Main Menu 4.0 SAM Phase: Option 6  Click the button OK to proceed					✓	
1430.	<b>A102109SPVT103_ACMS_CONFIG25</b> Click the button Continue to proceed					✓	
1440.	<b>A102109SPVT036_ACMS_STR_ON</b> Do you want to change the current STR in use?: Answer no  Click the button OK to proceed					✓	

Test location: <i>ESTEL</i>	Operator <i>S-ELSON</i>	Product Assurance: <i>[Signature]</i> <i>34000</i>	Date: <i>22/4/08</i>	<i>13-53</i>
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Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
1450	<b>A102109SPVT043_TRANSITION_TO_OCM</b> Verify after ca. 7 min if ACMS mode is = OCM point fine (Earth pointing)					✓	
1460	<b>A102109SPVT043_TRANSITION_TO_OCM</b> Verify in AND: ZAA00999 if Est Attitude Q1..Q4 is close to Cur Target: Q1/Q3 = 0, Q2=0.6 Q4= 0.79					✓	
1470	<b>A102109SPVT043_TRANSITION_TO_OCM</b> Verify AESM3002 = OCM point fine or in synoptic SAT – ACMS – ACC – Mode Nominal					✓	
1480	<b>A102109SPVT043_TRANSITION_TO_OCM</b> SUSPEND click on script name  Click the button RESUME to proceed				FCV duty cycle fail	✓	

Test location: <i>ESTR</i>	Operator <i>S-EUSSEN</i>	Product-Assurance: <i>SD B HOGGE</i>	Date: <i>22/4/08</i>	<i>14:37</i>
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Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
1490	<p><b>A102109SPVT103_ACMS_CONFIG25</b></p> <p>Select Transition to SCM (Science mode). Main Menu 7.0: Option 3</p> <p>Click the button OK to proceed</p>					✓	
1500	<p><b>A102109SPVT103_ACMS_CONFIG25</b></p> <p>Click the button Continue to proceed</p>					✓	
1510	<p><b>A102109SPVT038_RWL_ON</b></p> <p>Do you want to change actual on-board wheel set selected in the nominal configuration ? RWL 1-2-4 selected, RWL-3 not selected</p> <p>Click the button NO to proceed ?</p>					✓	
1520	<p><b>A102109SPVT042_RWL_SPINUP</b></p> <p>Change actual Angular Momentum (initial values)? Option: no</p> <p>Wait for ca. 10 min</p>					✓	

Test location: <i>ESTEL</i>	Operator: <i>S. Casan</i>	Product-Assurance: <i>SD. B. HOGG.</i>	Date: <i>22/4/08</i> <i>14:43</i>
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Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
1530.	<p><b>OPERATOR INFO</b> Verify RWL speed in plotting window</p> <p>1. Select REALTIME-&gt;DESKTOP-&gt;MONITORING-&gt;TM Plotting Tool</p> <p>2. Select Directory: Home/heracms/plotting 3. Select FILE -&gt; LOAD -&gt; 15 (RWLs_REAL(cal)&amp;Simul_SPEED.txt)</p>					✓	
1540.	<p><b>OPERATOR INFO</b> Verify 4x RWL momentum parameters</p> <p>AEWMA002 = 11.0 +/- 25% (RWL1 momentum) AEWMB002 = - 9.4 +/- 25% (RWL2 momentum) AEWMC002 = 0.0 +/- 25% (RWL3 momentum) AEWMD002 = - 8.5 +/- 25% (RWL4 momentum)</p>				<p>9.41 -7.5 0 -6.5</p>	✓	
1550.	<p><b>A102109SPVT042_RWL_SPINUP</b></p> <p>Target wheel speed not reached after 600 sec SUSPEND click on script name</p> <p>Click the button RESUME to proceed</p>					✓	

Test location: <i>ESTEL</i>	Operator <i>S. ESTEL</i>	Product-Assurance: <i>B. HOGRE</i> <i>PH.</i>	Date: <i>22/4/08</i> <i>RS-01</i>
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Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
1560.	<b>A102109SPVT042_RWL_SPINUP</b> Click the button "End TS!" to proceed					✓	
1570.	<b>OPERATOR INFO</b> Verify in SAT synoptic SAT – ACMS – ACC – Mode Nominal = SCM Point Fine Verify in Telemetry window ZAAF0999 (diagnostic TM) As long as the ACMS is switched On the Menu Box has to be present !!!					✓	
1580.	<b>Z010999MCVT080_IST_FDIR_ASTRUM</b> Command Rx1 to 125 bps and Rx2 to 4 Kbps, and switch OFF XPND 2 and TWTA 2 Click the button Confirm					✓	
1590.	<b>Z010999MCVT080_IST_FDIR_ASTRUM</b> Commandf PACS to safe mode and SCBP to 2 Click the button Confirm				SKIPPED. PACS STILL IN SCIENCE : ALREADY IN CORRECT MODE		

Test location: <i>ESTEL</i>	Operator <i>S. ELSLEY</i>	Product-Assurance: <i>B. HOGG</i>	Date: <i>22/4/08</i>	<i>15:08</i>
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Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
1600.	<p><b>P102999SCVT904_ASDGENPACS_nomSpect</b>                      FM PACS simulate spectroscopy for test in any condition.                      Abort TS if not correct</p> <p>Click the button YES to proceed</p>				<p>SKIPPED                      SEE PREVIOUS                      STEP                      ALREADY IN CORRECT                      MODE</p>		
1610.	<p><b>Z010999MCVT080_IST_FDIR_ASTRUM</b></p> <p>Get RM Status and Dump the Event Buffers</p> <p>Click the button Confirm</p>					✓	
1620.	<p><b>Z010999MCVT080_IST_FDIR_ASTRUM</b></p> <p>Status Spacecraft (CDMS -&gt; NOM ! ACMS -&gt; SCM) and EGSE</p> <p>Click the button Confirm</p>					✓	
1630.	<p><b>Z010999MCVT080_IST_STATUS</b></p> <p>Click the button "YES" to proceed</p>					✓	
1640.	<p><b>Z010999MCVT080_IST_STATUS</b></p> <p>OK                      Click the button "End TS!" to proceed</p>					✓	

Test location: <i>ESTEC</i>	Operator: <i>S. Essex</i>	Product-Assurance: <i>[Signature]</i> <i>B. Hoce</i>	Date: <i>22/4/08</i> <i>15:17</i>
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Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
1650.	<b>Z010999MCVT080_IST_FDIR_ASTRUM</b> Set the Transition from SAS 1474W to SAS less Power and BS 200 W Click the button Confirm					✓	
1660.	<b>Z010999MCVT080_IST_FDIR_ASTRUM</b> TRIGGER WITH DOD (DEPTH OF DISCHARGE) ALARM THE CDMS TRANSITION NOMINAL TO SURVIVAL (ALARM 4) Click the button Confirm				SK OFF SAFETY LOOP TRIGGERED. SAME REOCCURENCE AS OF 21/04/08 SPRO452 HAS BEEN UPDATED TO RESOLVE THIS NCR NC 3212 TO BE UPDATE!	✓	
1670.	<b>D102159SCVT160_FDIR_NOM_SURV_DOD</b> Click the button "End TS!" to proceed						
1680.	<b>Z010999MCVT080_IST_FDIR_ASTRUM</b> CHANGE THE TT&C SCOE SETTINGS TO WORK AT 125 BPS Click the button Confirm				TEST ABORTED!!		

PERFORM RECOVERY OF SK.

Test location: <i>ESTE</i>	Operator <i>S. ESCOFF</i>	Product-Assurance: <i>B. MOGGER</i> <i>[Signature]</i>	Date: <i>22/4/08</i>
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Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
1690.	<b>Z010999MCVT080_IST_FDIR_ASTRUM</b> SWITCH TM-TC RATE FROM 500BPS/125BPS TO 5KBPS/4KBPS  Click the button Confirm						
1700.	<b>Z010999MCVT080_IST_FDIR_ASTRUM</b> Status Spacecraft (CDMS -> SM ! ACMS -> SAM) and EGSE IST_STATUS "5.8.6.7.2"  Click the button Confirm						
1710.	<b>Z010999MCVT080_IST_STATUS</b>  Click the button "End TS!" to proceed						
1720.	<b>Z010999MCVT080_IST_FDIR_ASTRUM</b> DISABLE THERMAL CONTROL  Click the button Confirm						
1730.	<b>D102159SCVT003DISTHERMALCONTROL</b>  Click the button "End TS!" to proceed						

Test location:	Operator	Product-Assurance:	Date:
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Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
1740	<b>Z010999MCVT080_IST_FDIR_ASTRUM</b> Set back to umbilical  Click the button Confirm						
1750	<b>D102159SCVT216_ASED_TM_150_KBPS_IST</b> Click the button "End TS!" to proceed						
1760	<b>Test End Switch off using IST END</b>						

Test location:	Operator	Product-Assurance:	Date:
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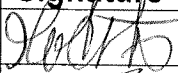


Table 8.1-1: Procedure Variation Sheet

8.2 Non Conformance Report (NCR) Summary

NCR - No.	NCR - Title	Date	Open Closed	PA sig.
NC 3212	SAFETY LOOP FROM BATTERY TRIGGERED DURING 1ST S/C reconf, debug	13/04/07	TO BE UPDATED	B.HOGG

Table 8.2-1: Non-Conformance Record Sheet

**8.3 Sign-off Sheet**

	Date	Signature
Test Manager	22-4-08	
Operator	S. ELSLEY 22-4-08	
PA Responsible	B. HOGG 22-4-08	
ESA Representative		

8 Summary Sheets

8.1 Procedure Variation Summary

NOTE PVS #1 WAS RAISED AGAINST THE IST-START PROCEDURE TP0134.  
NO ~~PVS~~ PVS #1 HAS BEEN RAISED FOR THIS PROCEDURE TP0190. PVS STARTED #2

		Test Change	Curr. No.: #2.	
			Date 22/04/2008.	
			Page 1	of 12
Test designation	Test Procedure	Issue	Rev.	
	HP-2-ASED-TP-050	1.1		
Test step changed	Reason for Change			
	PACS switch off and Recovery.			
<p>see § 5.8.6.5 in IST specification.</p> <p>To be in accordance with IST specification the PACS has to be <del>switch off</del> and <del>to be recovered switch</del> recovered and switch on.</p> <p>see extract from IST_PACS_FDIR script in APPENDIX.</p> <p>- AND PERFORM SCRIPT P102999 SCRIPT 905-ASD:ISTPACS_FDIR.ON.N</p>				
Prepared by:	Resp. Test Leader	Project Engineer		
Vandenhove	<i>[Signature]</i>			
PA/QA	Prime	Customer		
<i>[Signature]</i>				

#2  
B. HOGG  
*[Signature]*  
22/04/08



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Apr 20, 08 8:52      Z010999MCVT135_IST_PACS_FDIR.tcl      Page 1/1
Report of TC routing TM(8,6,10,6)"
waittime 00.00.02.0000
inform "Please filter TMPKT history for TM(8,6,10,6)"
logm "Sending TC DC807180 (ReportTCRoutingFilter) to request a
waittime 00.00.02.0000
EGSE_tcsend_CEV DC807180 checks { SPTV DPTV CEV
} ack { ACCEPT COMPLETE }
waittime 00.00.02.0000
inform "Please check in the report that PACS TC routing is disabled"
waittime 00.00.02.0000
E PACS TC routing"
logm "sending TC DC006161 (EnableDisableTCRouting) to ENABL
EGSE_tcsend_CEV DC006161 checks { SPTV DPTV CEV
} ack { ACCEPT COMPLETE } \
      {DH044161 "PACS" ENG} \
      {DH045161 4} \
      {DH009161 1}
waittime 00.00.02.0000
inform "Please filter TMPKT history for TM(8,6,10,6)"
waittime 00.00.02.0000
logm "Sending TC DC807180 (ReportTCRoutingFilter) to request a
Report of TC routing TM(8,6,10,6)"
EGSE_tcsend_CEV DC807180 checks { SPTV DPTV CEV
} ack { ACCEPT COMPLETE }
waittime 00.00.02.0000
inform "Please check in the report that PACS TC routing is enabled"
waittime 00.00.02.0000

```

# Ein Musical in 2 Akten

von

**Hans-Jürgen Fuchs**

(Edition Soundchaser)

\*\*\*\*\*

## Die Geschichte

Lisa ist mit ihren Eltern in die Stadt gezogen. Noch hat sie keine Freunde und am ersten Schultag muss sie sich mit den Coolgirls und deren Anführerin Deyna auseinandersetzen.

Doch da naht Hilfe in Gestalt des Mannes im Mond, den Lisa durch ihr Hobby, die Astronomie, kennen gelernt hat. Er kommt sie auf die Erde besuchen. Lisa erlebt, was es heißt, echte Freunde zu haben.

\*\*\*\*\*

## Aufführungen :

**Samstag, 12. Juli 2008 10.00 Uhr**

**Montag, 14. Juli 2008 10.00 Uhr**

**Dienstag, 15. Juli 2008 18.00 Uhr**

Turnhalle der Mädchenrealschule St. Elisabeth

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8 Summary Sheets

8.1 Procedure Variation Summary

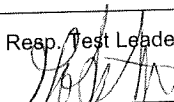
		Test Change		Curr. No.: # 3	
				Date 22/4/08	
				Page 1 of 1	
Test designation TP-0190		Test Procedure S/C RECONFIGURATION		Issue 1	Rev. 1
Test step changed BEFORE STEP 1660		Reason for Change DUMP OF MASS MEMORY			
<p>BEFORE TRANSITION NOMINAL TO SURVIVAL, PERFORM A DUMP OF THE MASS MEMORY. IN CASE OF SAFETY LOOP, THE TEST DATA WILL HAVE BEEN STORED.</p> <p>1) FROM CONDUCTOR CONSOLE,</p> <p>Callasync DIO2159SCVT188-IST-DUMP_PRT_STORE</p> <p>0 <del>0</del> 1 2 3 CEL-A CEL-B</p>					
Prepared by: S. ELSEY		Resp. Test Leader J. BERTHE		Project Engineer	
PA/QA D. LAMONBY		Prime		Customer	

8 Summary Sheets

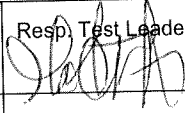
8.1 Procedure Variation Summary

		Test Change		Curr. No.: # 4	
				Date 22-4-08	
				Page 1 of 1	
Test designation TP-0190		Test Procedure S/C RECONFIGURATION		Issue 1	Rev. 1
Test step changed		Reason for Change ADDITIONAL STEP TO BE INSERTED			
<p>INSERT ADDITIONAL STEP # 1375</p> <p>D102159SCVT216_ASED_TM_150_KBPS_IST</p> <p>CLICK "END TS"</p>					
Prepared by: S. SIEG		Resp. Test Leader <i>[Signature]</i>		Project Engineer	
PA/QA D. LAMONBY		Prime		Customer	

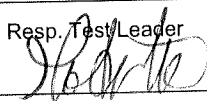
## Procedure Variation Summary

	Test Change	Curr. No.: # 5	Date 23-04-2008
		Page 1	of 1
Test designation TP-0190	Test Procedure S/C RECONFIGURATION	Issue 1	Rev. 1
Test step changed 1030	Reason for Change ADDITIONAL COMMENTS TO ADD TO TEST STEP		
<p>ADD FOLLOWING COMMENTS TO STEP 1030</p> <p>"DO YOU WANT TO STEP AND NOTICE?"</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 23-04-2008
		Page 1	of 1
Test designation TP-0190	Test Procedure S/C RECONFIGURATION	Issue 1	Rev. 1
Test step changed 1160,1260,1350	Reason for Change STEP NOT REQUIRED		
REMOVE STEPS FROM PROCEDURE			
Prepared by: D. LAMONBY	Resp. Test Leader 	Project Engineer	
PA/QA D. LAMONBY	Prime	Customer	

## Procedure Variation Summary

	Test Change	Curr. No.: #7	
		Date 23-04-2008	
		Page 1	of 1
Test designation TP-0190	Test Procedure S/C RECONFIGURATION	Issue 1	Rev. 1
Test step changed 800 & 810	Reason for Change DELETE TEST STEPS		
<p>STEP 800 &amp; STEP 810 TO BE DELETED FROM PROCEDURE</p>			
Prepared by: D. LAMONBY	Resp. Test Leader 	Project Engineer	
PA/QA D. LAMONBY	Prime	Customer	

**9**

**Script Hierarchy**

Argument for unit:

User choice: /home/hercdmu/LogHistory/callProc.txt

```

=====
PROCEDURE getLogHistory STEP 1
Setup system
=====

logm
logm The file "/home/hercdmu/LogHistory/callProc.txt" is expected to be
generated by the following linux command:
logm grep -iw -e call -e callasync *.tcl | grep -v "#" | grep -v "'" >
callProc.txt
logm
logm File /home/hercdmu/LogHistory/callProc.txt status: OPEN/READ
logm
logm ===== 5.8.6 S/C RECONFIGURATION =====
logm
logm |-----> Y102989ETVT021_TTC_SCOE_ON
logm |-----> async A102109SPVT202_ACMS_STATUS_H
logm |-----> D102159SCVT138_IST_LAUNCH_SUNACQ
logm |-----|-----> Z010999MMXX002UNITS_CHECK
logm |-----> D102159SCVT137_IST_SUNACQ_NOM
logm |-----|-----> Z010999MMXX002UNITS_CHECK
logm |-----> W102584SPVT101_PCDU_TRANSITION_FDIR 1
logm |-----> Z102999SCVT001_SREM_ON 60
logm |-----|-----> Z102999SCVT003_SREM_ACQ_START $argv
logm |-----> Z102999SCVT010_ASDGEN_PACSPWRON_P
logm |-----|-----> P102999SCVT905_ASDISTPACS_PWR_ON_N
logm |-----|-----|-----> Z010999MMXX002UNITS_CHECK
logm |-----> Z102999SCVT004_ASDGEN_SPIREPWRON_P
logm |-----|-----> S102999SCVT017_ASDGENSPIR_PWR_ON_P
logm |-----|-----|-----> SPIRE-IST-DBG-OFF2DPUON-SP
logm |-----|-----|-----> SPIRE-IST-DBG-DPUON2STBY
logm |-----|-----|-----> SPIRE-IST-DBG-LOAD-VM-TABLES
logm |-----|-----|-----> Z010999MMXX002UNITS_CHECK
logm |-----> D102159SCVT080_CEL_DOWNLINK
logm |-----> A102109SPVT087_ACMS_IST_FN 1
logm |-----|-----> ACMS_get_RM_status RMA
logm |-----|-----> ACMS_get_RM_status RMB
logm |-----|-----> ACMS_event_buffer_dump sgma
logm |-----|-----> ACMS_event_buffer_dump sgmb
logm |-----> A102109SPVT087_ACMS_IST_FN 2
logm |-----|-----> ACMS_get_RM_status RMA
logm |-----|-----> ACMS_get_RM_status RMB
logm |-----|-----> ACMS_event_buffer_dump sgma
logm |-----|-----> ACMS_event_buffer_dump sgmb
logm |-----> Z010999MCVT153_IST_STATUS 5.8.6.2
logm |-----|-----> ACMS_get_RM_status RMA
logm |-----|-----> ACMS_get_RM_status RMB
logm |-----> D102159SCVT153_MTL_FDIR
logm |-----> async A102109SPVT087_ACMS_IST_FN cir
logm |-----|-----> ACMS_get_RM_status RMA

```



```

logm |-----> ACMS_get_RM_status RMB
logm |-----> ACMS_event_buffer_dump sgma
logm |-----> ACMS_event_buffer_dump sgmb
logm |-----> D102159SCVT154_FDIR_NOM_EARTH_3a
logm |-----> D102159SCVT156_CDMS_ANALYSIS_FDIR_IST
logm |-----> D102159SCVT080_CEL_DOWNLINK
logm |-----> Y102989ECVT006_TTC_DL_PORT_SET MGA
logm |-----> Y102989ETVT019_TTC_SCOE_ACTIVITY
logm |-----> Y102989ECVT007_TTC_UL_PARAM_SET MGA -67.4 OFF T 1 0.5 0.13 A
logm |-----> Y102989ETVT019_TTC_SCOE_ACTIVITY
logm |-----> Y102989ECVT008_TCRG_MI_SET TTC 1.0 0.7 4000
logm |-----> Y102989ETVT019_TTC_SCOE_ACTIVITY
logm |-----> Y102989ECVT018_TTC_TC_OP_METHOD ONLINE
logm |-----> Y102989ETVT017_TTC_CHECK_ROUTINE
logm |-----> Y102989ETVT019_TTC_SCOE_ACTIVITY
logm |-----> Y102989ECVT003_TC_DFE_OUT_2 TTC 4000
logm |-----> Y102989ECVT005_TM_DFE_IN_FROM TTC MGA MBR
logm |-----> Y102989ETVT019_TTC_SCOE_ACTIVITY
logm |-----> Y102989ECVT001_TMTC_LINK TM TTC
logm |-----> A102109SPVT087_ACMS_IST_FN 1
logm |-----> ACMS_get_RM_status RMA
logm |-----> ACMS_get_RM_status RMB
logm |-----> ACMS_event_buffer_dump sgma
logm |-----> ACMS_event_buffer_dump sgmb
logm |-----> A102109SPVT087_ACMS_IST_FN 2
logm |-----> ACMS_get_RM_status RMA
logm |-----> ACMS_get_RM_status RMB
logm |-----> ACMS_event_buffer_dump sgma
logm |-----> ACMS_event_buffer_dump sgmb
logm |-----> Z010999MCVT153_IST_STATUS 5.8.6.3
logm |-----> ACMS_get_RM_status RMA
logm |-----> ACMS_get_RM_status RMB
logm |-----> Y102989ECVT001_TMTC_LINK BOTH SCPRI
logm |-----> R102479ECVT006_XPND2_TC_1553 0 0 1 0 0 0 0.6 1.2 0 -4
logm |-----> Z102999SCVT003_SREM_ACQ_START 60
logm |-----> D102159SCVT157_FDIR_EARTH_EARTH_3b before_first_3a_alarm
logm |-----> D102159SCVT156_CDMS_ANALYSIS_FDIR_IST
logm |-----> D102159SCVT080_CEL_DOWNLINK
logm |-----> D102159SCVT156_CDMS_ANALYSIS_FDIR_IST
logm |-----> D102159SCVT080_CEL_DOWNLINK
logm |-----> D102159SCVT157_FDIR_EARTH_EARTH_3b first_3a_alarm
logm |-----> D102159SCVT156_CDMS_ANALYSIS_FDIR_IST
logm |-----> D102159SCVT080_CEL_DOWNLINK
logm |-----> D102159SCVT156_CDMS_ANALYSIS_FDIR_IST
logm |-----> D102159SCVT080_CEL_DOWNLINK
logm |-----> Z010999MCVT153_IST_STATUS 5.8.6.4.2
logm |-----> ACMS_get_RM_status RMA
logm |-----> ACMS_get_RM_status RMB
logm |-----> D102159SCVT157_FDIR_EARTH_EARTH_3b before_second_3a_alarm
logm |-----> D102159SCVT156_CDMS_ANALYSIS_FDIR_IST
logm |-----> D102159SCVT080_CEL_DOWNLINK
logm |-----> D102159SCVT156_CDMS_ANALYSIS_FDIR_IST
logm |-----> D102159SCVT080_CEL_DOWNLINK
logm |-----> R102479ECVT006_XPND2_TC_1553 0 0 1 0 0 0 0.6 1.2 0 -4
logm |-----> D102159SCVT157_FDIR_EARTH_EARTH_3b second_3a_alarm
logm |-----> D102159SCVT156_CDMS_ANALYSIS_FDIR_IST

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logm |-----|-----> D102159SCVT080_CEL_DOWNLINK
logm |-----|-----> D102159SCVT156_CDMS_ANALYSIS_FDIR_IST
logm |-----|-----> D102159SCVT080_CEL_DOWNLINK
logm |-----> Y102989ECVT006_TTC_DL_PORT_SET MGA
logm |-----|-----> Y102989ETVT019_TTC_SCOE_ACTIVITY
logm |-----> Y102989ECVT007_TTC_UL_PARAM_SET MGA -67.4 OFF T 1 0.5 0.13 A
logm |-----|-----> Y102989ETVT019_TTC_SCOE_ACTIVITY
logm |-----> Y102989ECVT008_TCRG_MI_SET TTC 1.0 0.7 4000
logm |-----|-----> Y102989ETVT019_TTC_SCOE_ACTIVITY
logm |-----> Y102989ECVT018_TTC_TC_OP_METHOD ONLINE
logm |-----|-----> Y102989ETVT017_TTC_CHECK_ROUTINE
logm |-----|-----> Y102989ETVT019_TTC_SCOE_ACTIVITY
logm |-----> Y102989ECVT003_TC_DFE_OUT_2 TTC 4000
logm |-----> Y102989ECVT005_TM_DFE_IN_FROM TTC MGA MBR
logm |-----|-----> Y102989ETVT019_TTC_SCOE_ACTIVITY
logm |-----|-----> Y102989ECVT001_TMTC_LINK TM TTC
logm |-----> D102159SCVT157_FDIR_EARTH_EARTH_3b after_second_3a_alarm
logm |-----|-----> D102159SCVT156_CDMS_ANALYSIS_FDIR_IST
logm |-----|-----> D102159SCVT080_CEL_DOWNLINK
logm |-----|-----> D102159SCVT156_CDMS_ANALYSIS_FDIR_IST
logm |-----|-----> D102159SCVT080_CEL_DOWNLINK
logm |-----> A102109SPVT087_ACMS_IST_FN 1
logm |-----|-----> ACMS_get_RM_status RMA
logm |-----|-----> ACMS_get_RM_status RMB
logm |-----|-----> ACMS_event_buffer_dump sigma
logm |-----|-----> ACMS_event_buffer_dump sgmb
logm |-----> A102109SPVT087_ACMS_IST_FN 2
logm |-----|-----> ACMS_get_RM_status RMA
logm |-----|-----> ACMS_get_RM_status RMB
logm |-----|-----> ACMS_event_buffer_dump sigma
logm |-----|-----> ACMS_event_buffer_dump sgmb
logm |-----> Z010999MCVT153_IST_STATUS 5.8.6.4.4
logm |-----|-----> ACMS_get_RM_status RMA
logm |-----|-----> ACMS_get_RM_status RMB
logm |-----> D102159SCVT158_FDIR_NOMINAL_SUNACQ
logm |-----|-----> D102159SCVT175_SET_SURV_REG A A BBBA A B Separated
logm |-----|-----> D102159SCVT176_WRITE_CROME BA 1
logm |-----|-----> Z010999MMXX002UNITS_CHECK
logm |-----|-----> Z010999MMXX002UNITS_CHECK
logm |-----> Z010999MCVT153_IST_STATUS 5.8.6.5.1
logm |-----|-----> ACMS_get_RM_status RMA
logm |-----|-----> ACMS_get_RM_status RMB
logm |-----> A102109SPVT087_ACMS_IST_FN out_of_operational_domain_part1
logm |-----|-----> ACMS_get_RM_status RMA
logm |-----|-----> ACMS_get_RM_status RMB
logm |-----|-----> ACMS_event_buffer_dump sigma
logm |-----|-----> ACMS_event_buffer_dump sgmb
logm |-----> Y102989ECVT006_TTC_DL_PORT_SET LGA1
logm |-----|-----> Y102989ETVT019_TTC_SCOE_ACTIVITY
logm |-----> Y102989ECVT007_TTC_UL_PARAM_SET LGA1 -82.0 OFF T 1 0.5 0.13 A
logm |-----|-----> Y102989ETVT019_TTC_SCOE_ACTIVITY
logm |-----> Y102989ECVT008_TCRG_MI_SET TTC 1.0 0.7 125
logm |-----|-----> Y102989ETVT019_TTC_SCOE_ACTIVITY
logm |-----> Y102989ECVT018_TTC_TC_OP_METHOD ONLINE
logm |-----|-----> Y102989ETVT017_TTC_CHECK_ROUTINE
logm |-----|-----> Y102989ETVT019_TTC_SCOE_ACTIVITY

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```

logm |-----> Y102989ECVT003_TC_DFE_OUT_2_TTC 125
logm |-----> Y102989ECVT005_TM_DFE_IN_FROM_TTC LGA1 LBR1
logm |-----> Y102989ETVT019_TTC_SCOE_ACTIVITY
logm |-----> Y102989ECVT001_TMTC_LINK TM TTC
logm |-----> A102109SPVT087_ACMS_IST_FN out_of_operational_domain_part2
logm |-----> ACMS_get_RM_status RMA
logm |-----> ACMS_get_RM_status RMB
logm |-----> ACMS_event_buffer_dump sigma
logm |-----> ACMS_event_buffer_dump sgmb
logm |-----> D102159SCVT159_FDIR_CHECK_SUNACQMODE
logm |-----> Z010999MCVT153_IST_STATUS 5.8.6.5.2
logm |-----> ACMS_get_RM_status RMA
logm |-----> ACMS_get_RM_status RMB
logm |-----> Y102989ECVT006_TTC_DL_PORT_SET LGA1
logm |-----> Y102989ETVT019_TTC_SCOE_ACTIVITY
logm |-----> Y102989ECVT008_TCRG_MI_SET_TTC 1.0 0.7 4000
logm |-----> Y102989ETVT019_TTC_SCOE_ACTIVITY
logm |-----> Y102989ECVT003_TC_DFE_OUT_2_TTC 4000
logm |-----> Y102989ECVT005_TM_DFE_IN_FROM_TTC LGA1 LBR2
logm |-----> Y102989ETVT019_TTC_SCOE_ACTIVITY
logm |-----> Y102989ECVT001_TMTC_LINK TM TTC
logm |-----> A102109SPVT087_ACMS_IST_FN sasm_to_sam_on_pmb
logm |-----> ACMS_get_RM_status RMA
logm |-----> ACMS_get_RM_status RMB
logm |-----> ACMS_event_buffer_dump sigma
logm |-----> ACMS_event_buffer_dump sgmb
logm |-----> A102109SPVT087_ACMS_IST_FN verify_sasm_sam_on_pmb_unit_B
logm |-----> ACMS_get_RM_status RMA
logm |-----> ACMS_get_RM_status RMB
logm |-----> ACMS_event_buffer_dump sigma
logm |-----> ACMS_event_buffer_dump sgmb
logm |-----> Z010999MCVT153_IST_STATUS 5.8.6.6
logm |-----> ACMS_get_RM_status RMA
logm |-----> ACMS_get_RM_status RMB
logm |-----> Y102989ECVT001_TMTC_LINK BOTH SCPRI
logm |-----> D102159SCVT123_TM_LINK_150_KBPS
logm |-----> D102159SCVT158_FDIR_NOMINAL_SUNACQ
logm |-----> D102159SCVT175_SET_SURV_REG A A BBBA A B Separated
logm |-----> D102159SCVT176_WRITE_CROME BA 1
logm |-----> Z010999MMXX002UNITS_CHECK
logm |-----> Z010999MMXX002UNITS_CHECK
logm |-----> A102109SPVT087_ACMS_IST_FN 1
logm |-----> ACMS_get_RM_status RMA
logm |-----> ACMS_get_RM_status RMB
logm |-----> ACMS_event_buffer_dump sigma
logm |-----> ACMS_event_buffer_dump sgmb
logm |-----> A102109SPVT087_ACMS_IST_FN 2
logm |-----> ACMS_get_RM_status RMA
logm |-----> ACMS_get_RM_status RMB
logm |-----> ACMS_event_buffer_dump sigma
logm |-----> ACMS_event_buffer_dump sgmb
logm |-----> Z010999MCVT153_IST_STATUS 5.8.6.7.1
logm |-----> ACMS_get_RM_status RMA
logm |-----> ACMS_get_RM_status RMB
logm |-----> W102584SPVT101_PCDU_TRANSITION_FDIR 2
logm |-----> async W102584SPVT101_PCDU_TRANSITION_FDIR 3

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logm |-----> D102159SCVT160_FDIR_NOM_SURV_DOD perform_DoD
logm |-----> Y102989ECVT006_TTC_DL_PORT_SET LGA1
logm |-----|-----> Y102989ETVT019_TTC_SCOE_ACTIVITY
logm |-----> Y102989ECVT007_TTC_UL_PARAM_SET LGA1 -82.0 OFF T 1 0.5 0.06 A
logm |-----|-----> Y102989ETVT019_TTC_SCOE_ACTIVITY
logm |-----> Y102989ECVT008_TCRG_MI_SET TTC 1.0 0.7 125
logm |-----|-----> Y102989ETVT019_TTC_SCOE_ACTIVITY
logm |-----> Y102989ECVT018_TTC_TC_OP_METHOD ONLINE
logm |-----|-----> Y102989ETVT017_TTC_CHECK_ROUTINE
logm |-----|-----> Y102989ETVT019_TTC_SCOE_ACTIVITY
logm |-----> Y102989ECVT003_TC_DFE_OUT_2 TTC 125
logm |-----> Y102989ECVT005_TM_DFE_IN_FROM TTC LGA1 LBR1
logm |-----|-----> Y102989ETVT019_TTC_SCOE_ACTIVITY
logm |-----|-----> Y102989ECVT001_TMTC_LINK TM TTC
logm |-----> Y102989ECVT006_TTC_DL_PORT_SET LGA1
logm |-----|-----> Y102989ETVT019_TTC_SCOE_ACTIVITY
logm |-----> Y102989ECVT008_TCRG_MI_SET TTC 1.0 0.7 4000
logm |-----|-----> Y102989ETVT019_TTC_SCOE_ACTIVITY
logm |-----> Y102989ECVT003_TC_DFE_OUT_2 TTC 4000
logm |-----> Y102989ECVT005_TM_DFE_IN_FROM TTC LGA1 LBR2
logm |-----|-----> Y102989ETVT019_TTC_SCOE_ACTIVITY
logm |-----|-----> Y102989ECVT001_TMTC_LINK TM TTC
logm |-----> D102159SCVT160_FDIR_NOM_SURV_DOD checks_after_DoD
logm |-----> Z010999MCVT153_IST_STATUS 5.8.6.7.2
logm |-----|-----> ACMS_get_RM_status RMA
logm |-----|-----> ACMS_get_RM_status RMB
logm |-----> D102159SCVT003DISTHERMALCONTROL
logm |-----> Y102989ECVT001_TMTC_LINK BOTH SCPRI
logm |-----> D102159SCVT123_TM_LINK_150_KBPS
logm |-----> D102159SCVT188_IST_DUMP_PKT_STORE 82 2 81 1 80 0 83 3 FF
logm |-----> D102159SCVT128_RESTORE_FROM_SURV Restore the S/C configuration
logm |-----|-----> D102159SCVT104_ENCODER_SELECT A $set_tm_rate
logm |-----> D102159SCVT126_LCL_OFF_BEF_SC_OFF
logm |-----> Z010999MCVT004_IST_END
logm |-----|-----> $swOFFsequence
logm |-----|-----> D102159SCVT188_IST_DUMP_PKT_STORE 0 80 1 81 2 82 3 83
CEL_A CEL_B
logm |-----|-----> A102109SPVT061_RWL_SPINDOWN
logm |-----|-----> async referby acmsOff A102109SPVT012_ACMS_OFF
logm |-----|-----> Z102999SCVT002_SREM_OFF
logm |-----|-----> D102159SCVT174_IST_REDUNDANT_CONF A A 0 0 0 0 0
logm |-----|-----|-----> D102159SCVT104_ENCODER_SELECT $tmObt
$tm_Enc_Config
logm |-----|-----> D102159SCVT175_SET_SURV_REG B B ABBB B B not
logm |-----|-----> D102159SCVT176_WRITE_CROME AB 1
logm |-----|-----> D102159SCVT188_IST_DUMP_PKT_STORE 0 80 1 81 2 82 3 83
CEL_A CEL_B
logm |-----|-----> D102159SCVT181_DISABLE_PKT_STORE
logm |-----|-----> D102159SCVT187_IST_SSMM_OFF
logm |-----|-----> Y102989ETVT020_TTC_SCOE_OFF
logm |-----|-----|-----> Y102989ECVT018_TTC_TC_OP_METHOD OFFLINE
logm |-----|-----|-----|-----> Y102989ETVT017_TTC_CHECK_ROUTINE
logm |-----|-----|-----|-----> Y102989ETVT019_TTC_SCOE_ACTIVITY
logm |-----|-----> Z010999MCVT002_POWER_OFF_HER_IST
logm |-----|-----> W102584SPVT101_PCDU_TRANSITION_FDIR 5
logm |-----|-----> D102159SCVT187_IST_SSMM_OFF
  
```

```

logm |-----|-----|-----> D102159SCVT001PM_SELECT B
logm |-----|-----|-----|-----> D102159SCVT003DISTHERMALCONTROL
logm |-----|-----|-----|-----> Z010999MMXX002UNITS_CHECK
logm |-----|-----|-----> D102159SCVT001PM_SELECT A
logm |-----|-----|-----|-----> D102159SCVT003DISTHERMALCONTROL
logm |-----|-----|-----|-----> Z010999MMXX002UNITS_CHECK
logm |-----|-----|-----> R102479SMXX001_XPND_HUM_TXT
logm |-----|-----|-----> Y102989EPVT002_PWR_SCOE_OFF_CLN_LNCH
logm |-----|-----|-----|-----> Z010999MMXX003UNITS_CHECK_PWR_OFF
logm |-----|-----|-----|-----> Z010999MMXX003UNITS_CHECK_PWR_OFF
logm |-----|-----|-----> Y102989EPVT002_PWR_SCOE_OFF
logm |-----|-----|-----|-----> Z010999MMXX003UNITS_CHECK_PWR_OFF
logm |-----|-----|-----|-----> Z010999MMXX003UNITS_CHECK_PWR_OFF
logm |-----|-----|-----|-----> Z010999MMXX003UNITS_CHECK_PWR_OFF
logm |-----|-----|-----> Z010999MMXX003UNITS_CHECK_PWR_OFF

```

10 Session Record

Test Description	SK RECONFIG
Session ID	2008-04-22-04-23_hercedmv_npws22- REALTIME-SC-RECONF
Start Time:	04:23
End Time	17:55
CVS Tag for Test	IST1-PART-1-TP-0134-1553-SC-RECON-ENI-001
Applicable IST Specification	HP-2-ASP-SP-0939 HERSCHEL-IST-1556.0
Test conductor	<i>[Signature]</i>
QA Approval	<i>[Signature]</i>

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





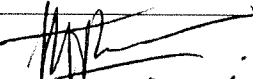
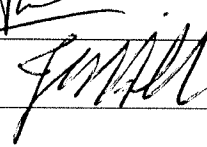
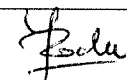

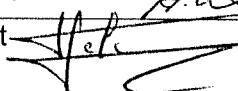
Attachment 3 to Section 6.7:  
As-Run Procedure HP-2-ASED-TP-0134


AS RUN FOR FORMAL  
S/C Reconfiguration.

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

2008\_05\_23\_04\_37 - hercdmu - hpws 22 -  
RACTIVE - SC - RECONF.

CI-No:

Prepared by:	Functional Team	Date:
Checked by:	C. Much 	25/4/2008
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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 &amp; 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>		
<b>EGSE</b>	CCS	1		
	CCS lite	1		
	TM/TC DFE	1		
	CDMU SCOE	1		
	ACMS SCOE	1		
	TT&C SCOE	1		
	POWER SCOE	1		
	CCU SCOE			
<b>IGSE</b>	<b>HIFI IGSE</b>	1		
	<b>PACS IGSE</b>	1		
	<b>SPIRE IGSE</b>	1		
<b>PCS</b>	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
<b>CDMS</b>	CDMU	1+1		
<b>ACMS</b>	ACC	1+1		
	RWA	3+1		
	GYRO	3+1		
	STR	2		
	CRS	2		
	AAD	1+1 internal red		
	SAS	2+2 internal red		
<b>TT&amp;C</b>	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: 3.4.0.9
- ACMS OBSW: 3.7
- 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	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	
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
		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:		

**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	

				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	

		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

			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:		

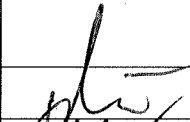
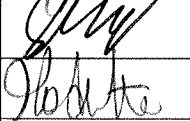

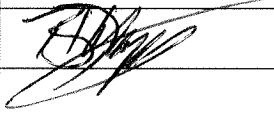


SAFE / ARM plug setup for ACS/PR/TP No.:						
Annex No.:						
314 200	on top of					
	Connector Function	Connector	S/C unit	SAFE	ARM	Sign
	SAFE / ARM plug	314 200-J03	NED (601)	X		
	SAFE / ARM plug	314 200-J04	NED (602)	X		
	SAFE / ARM plug	314 200-J05	SI 601	X		
	SAFE / ARM plug	314 200-J06	SI 602	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. MUEUER	
Test Director	Y	S. MOONEY	
Test Conductor	Y	P. MODESTO	
EGSE Operator			
SVM Support Engineer			
Cryo Support Engineer			
HIFI Instrument Support Engineer			
PACS Instrument Support Engineer			
Spire Instrument Support Engineer			
PA Responsible	Y	B. HOGG	
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 =  $22\text{C} \pm 3\text{C}$
- Relative Humidity = 50 % +/- 10%
- Delta Pressure = above 0.6 mm H<sub>2</sub>O
- 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 10)	He I HTT venting >20mg/sec	He II HTT venting >20mg/sec
<b>5.8.2 Launch phase, separation and post separation</b>	3 shift	4 shift	5 shift	6 shift	7 shift	8 shift
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
<b>5.8.3 Satellite Commissioning</b>						
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
<b>5.8.9 ACMS commissioning</b>						
5.8.9.1 AAD, SAS, CRS, STR, GYR, RCS unit check	OFF	N	n.a	Preferred	alternative	alternative
5.8.9.2 RWLs health check	OFF	N	n.a	Preferred	alternative	alternative
5.8.9.3 STR functional verification	OFF	N	n.a	Preferred	alternative	alternative
5.8.9.4 ACC health check	OFF	N	n.a	Preferred	alternative	alternative
5.8.9.5 ACMS dynamic verification	OFF	N	n.a	Preferred	alternative	alternative
<b>5.8.5 Mode transitions</b>						
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
<b>5.8.10 Launch clean run</b>	OFF	Y	n.a	Preferred	alternative	alternative
<b>5.8.11 Launch sequence robustness</b>						
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 II)	He I HTT venting >20mg/sec	He II HTT venting >20mg/sec
<b>5.8.5 Mode transitions</b>							
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
<b>5.8.6 S/C reconfiguration</b>							
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
<b>5.8.12 NOM mode robustness</b>							
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
<b>5.8.13 Test of Instrument FDIR OBCP</b>							
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
<b>5.9 DEGRADED CASES</b>							
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
<b>5.8.3</b>	<b>Satellite Commissioning</b>						
5.8.3.8	CCU (cryostat) commissioning	OFF	N	23			Required
<b>5.8.4</b>	<b>Instruments commissioning and performance verification</b>						
5.8.4.3	Test start (restart) configuration	OFF	N	23			Required
5.8.4.4							Required
5.8.4.5	SPIRE commissioning test	Spire	N	23 -> 90			Required
5.8.4.6	PACS commissioning test	PACS	N	23			Required
5.8.4.7	HIFI commissioning test	HIFI	N	0.23			Required
5.8.4.8	SPIRE and PACS parallel mode	SPIRE/PACS	N	23			Required
5.8.4.9	Test end or interruption	OFF	N				Required
<b>5.8.7</b>	<b>CDMS management</b>						
5.8.7.2.1	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
5.8.7.2.2	MTL management	PACS Prime STBY -> Burst -> X SPIRE STBY HIFI STBY	N	0.23		alternatively if MTL is compatible with instrument operations	Preferred
5.8.7.2.3	OBOP management	PACS Prime STBY -> Burst -> X SPIRE STBY HIFI STBY	N	0.23		alternatively if MTL is compatible with instrument operations	Preferred
5.8.7.2.4	SSMM management	PACS Prime STBY -> Burst -> X SPIRE STBY HIFI STBY	N	0.23		alternatively if MTL is compatible with instrument operations	Preferred
5.8.7.2.5	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
5.8.7.2.6	OBT management	PACS Prime STBY -> Burst -> X SPIRE STBY HIFI STBY	N	0.23		alternatively if MTL is compatible with instrument operations	Preferred
<b>5.8.8</b>	<b>DTCP worst case scenario</b>						
		PACS (Burst) SPIRE STBY HIFI Prime	N	0.23		TBC	Preferred
<b>5.8.9</b>	<b>REFERENCE Mission Scenario</b>						
5.8.9.2	Test start configuration		Y				Required
5.8.9.3	Test steps		Y				Required
5.8.9.4	HIFI OD	HIFI OD	Y	0.23			Required
5.8.9.5	PACS OD	PACS OD	Y	0.23			Required
5.8.9.6	SPIRE OD	SPIRE OD	Y	0.23			Required
5.8.9.7	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 been 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 off 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.

**5.3.4 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	

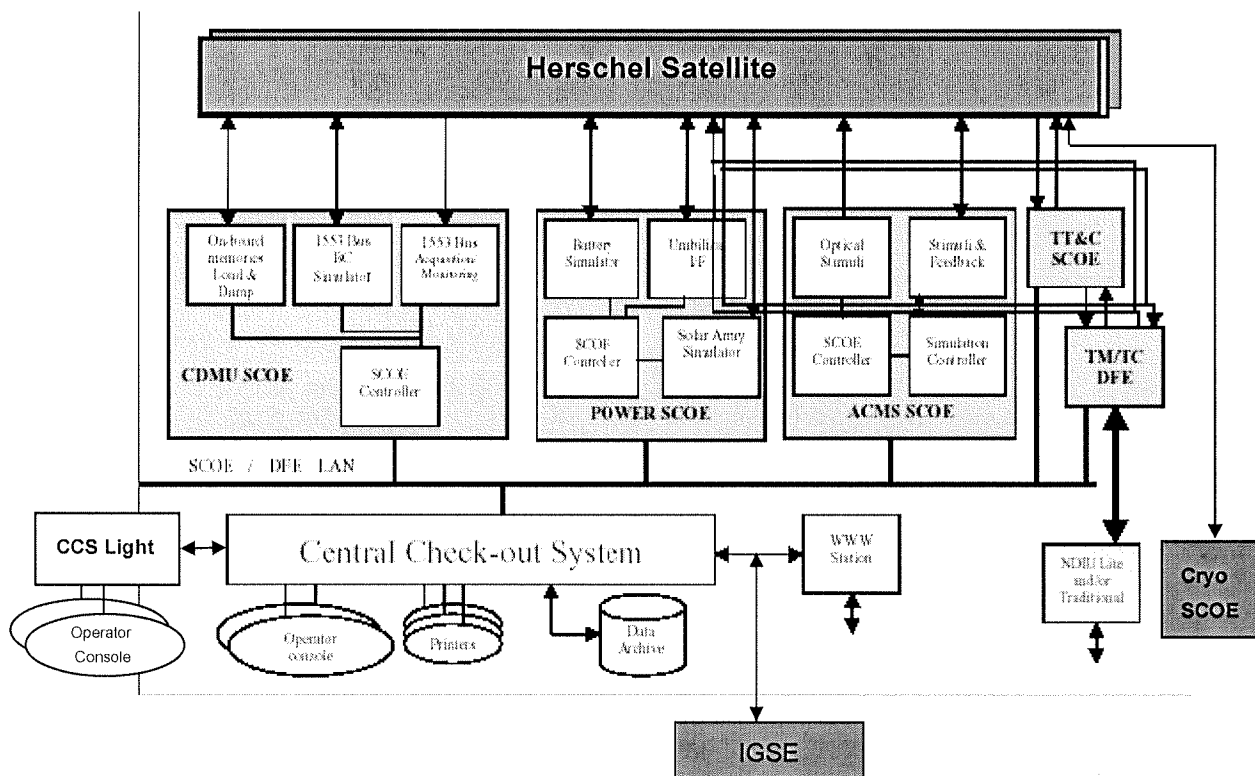
Qty.	Designation/Manufacturer	Provided by	Drawing/Ident. NR:	Calibr. Date
Set	Helium I lines (Y0612)	ASED	CI No. 142 310-09	
Set	Helium II Pumping lines (Y0602)	ASED	CI No. 142 310-09	
2	Scaffolding for He lines	ASED	CI No. 142 310-10	
10	450 l LHe Dewars type HDS 450 -EIPS	Linde		
1	Spiro pump DryTel 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.

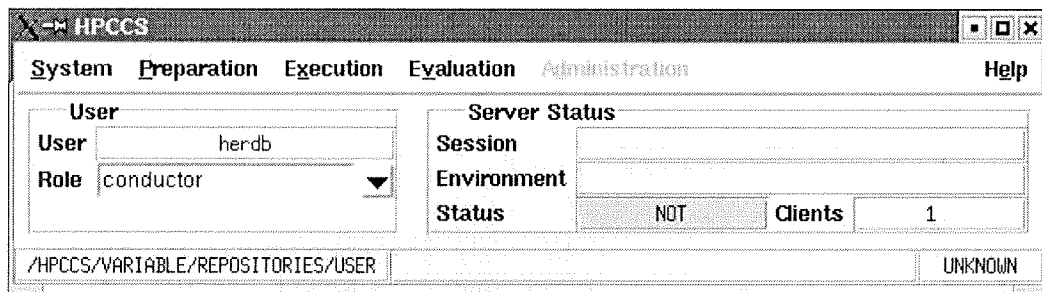
## 7 IST Test

## 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:

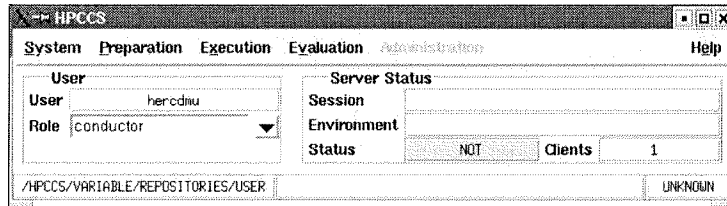
1. On a Workstation login as **herdb** (password **heratest**), being this user dedicated to DB operations for Herschel FM Checkout System, and open a shell (xterm).
2. Logged as herdb, run Startmmi and the following window will occur



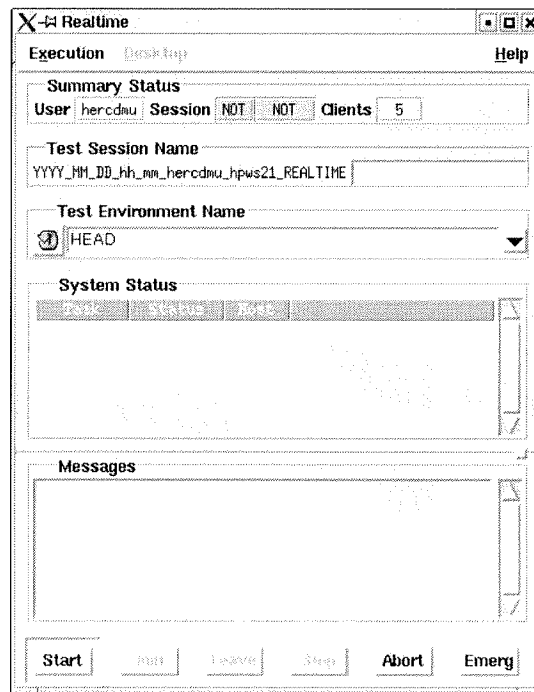
3. Logged as herdb, in HPCCS window, select menu "Preparation → Prepare"
4. Logged as herdb, In PREP window, select menu "Preparation → Discard all"
5. Logged as herdb, In Confirm Discard window, click the button Discard
6. Logged as herdb, in PREP window, select menu "Preparation → Update"
7. Logged 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:

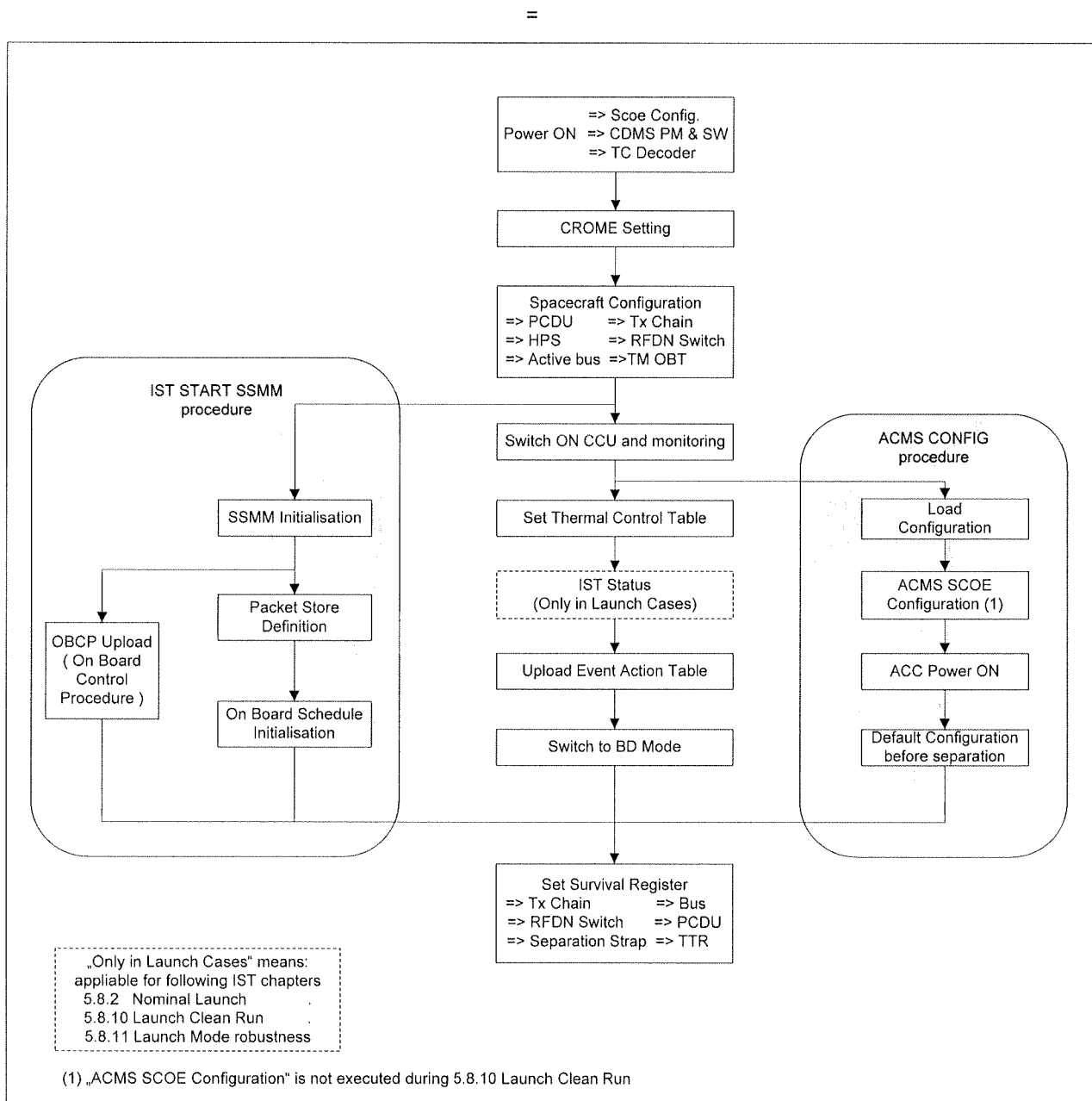
- Monitoring → Telemetry Desktop
- Monitoring → Telemetry Packet history
- Monitoring → Out of limit
- Monitoring → On Board Event History
- Test Sequences → Test Conductor Console
- Command → Telecommand History

## 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.



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	OB	Dec.	SW		SM	SM		SM	SM	ON	Mode	Config. File				
<b>5.8.2 NOMINAL LAUNCH</b>																				
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
<b>5.8.3a ACMS Commissioning</b>																				
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
<b>5.8.3b S/C Commissioning</b>																				
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
<b>5.8.4.5.1 SPIRE Commissioning</b>																				
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	
<b>5.8.4.5.2 SPIRE Spectrometer Complementary Test</b>																				
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				
<b>5.8.4.6 PACS Commissioning</b>																				
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	
<b>5.8.4.7 HIFI Commissioning</b>																				
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	
<b>5.8.4.8 Parallel Mode Commissioning</b>																				
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	
<b>5.8.5 Mode Transition</b>																				
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
<b>5.8.6 SC Reconfiguration</b>																				
SAS	Sim. Charged	PM A/B Nominal	Separated	A	B	B	A1	A2 B2	B	A	B	A	B	B	A	2&4	AABB	A&B	1	IST_FB_B
<b>5.8.7 CDMS Management</b>																				
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
<b>5.8.8 DTCP Worst Case Scenario</b>																				
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

FD D - PM B  
 PVS #1  
 SEE PVS ATTACHMENT  
 TO TPC190  
 AB PWS  
 23/05/08

SASL PS Bat. SCOE Crome PAPI/CCS Sep. Strap SM TTR SM TM OBTC 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	PMA 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	PMA 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	PMA 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	PMA 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	PMA 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
<b><u>TT&amp;C SCOE initialisation</u></b>							
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.					U	
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.					✓	
<b><u>SPACECRAFT SKIN CONNECTORS CONFIGURATION</u></b>							
3	<b>Verify that all the SCOE skin connectors cables are installed</b> <ul style="list-style-type: none"> <li>• Goto chapter 4.3</li> <li>• Choose according to the IST Test case the related skin configuration table</li> <li>• Check the list and sign off (together with PA and Floor Manager).</li> </ul>					U	

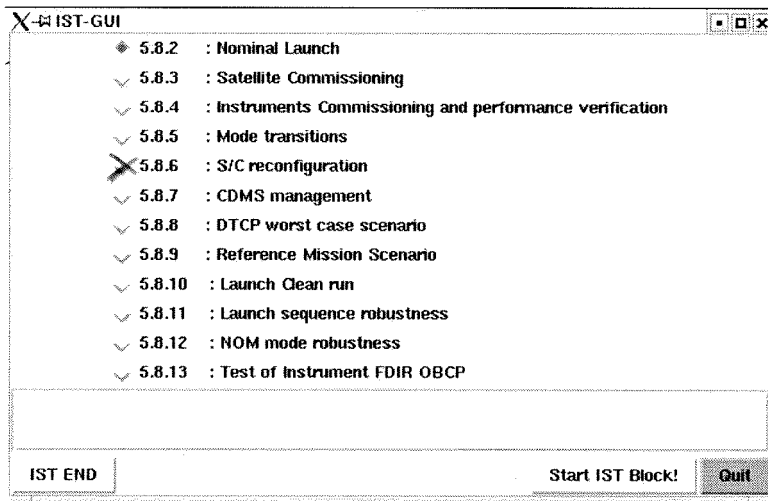
Test location: ESTC	Operator: DL	Product-Assurance: 	Date: 23/05/08	Time: 00:30
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Step-No.	Initialisation-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
<b>ACMS SCOE CHECK</b>							
4 N/A for "Launch Clean Run"	Verify that the ACMS SCOE 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					✓	

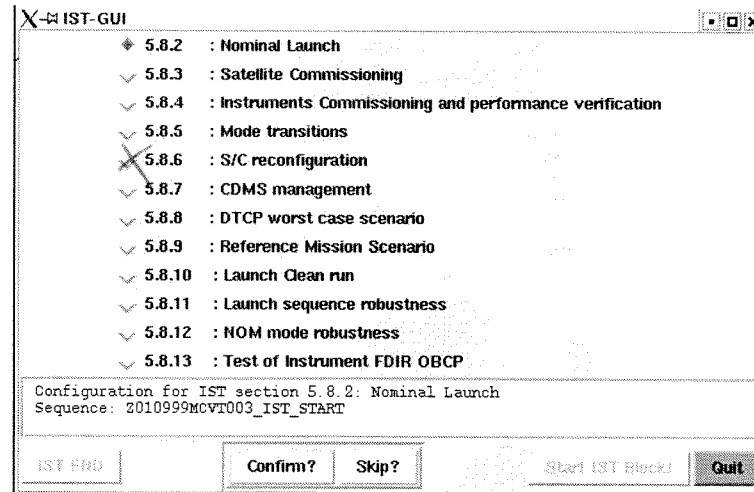
Test location: 8702	Operator N.	Product-Assurance: SJA.	Date: 27/05/08	Time 04:35
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**7.2.4 IST Start Step by Step Procedure**

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>0122</i>	Operator <i>A</i>	Product-Assurance: <i>BDI</i>	Date: <i>27/01/08</i>	Time <i>04:37</i>
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Step- No.	IST_START-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
1	<p><b>Z010999MCVT003_IST_START</b></p> <p>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</p>	To Check in Config. Table (Page 73)			<i>RVs #1</i>	<i>V</i>	

Configuration of "IST START"

<p><b>Power</b></p> <p>SAS/LPS SCOE: <input type="text" value="SAS"/></p> <p>Bat. SCOE: <input type="text" value="Simulated"/></p> <p>PCDU: <input type="text" value="A"/> HPS: <input type="text" value="A"/></p> <p><b>CCU</b></p> <p>CCU: <input type="text" value="A&amp;B"/></p> <p>Mode: <input type="text" value="512s (Mode 1)"/></p>	<p><b>CDMS</b></p> <p>TM OBT: <input type="text" value="A"/> Bus: <input type="text" value="A"/></p> <p>PM: <input type="text" value="A1"/> PapCos: <input type="text" value="PMNominal"/></p> <p><b>Survival Register</b></p> <p>Bus: <input type="text" value="B"/> Launch Straps: <input type="text" value="Not Separated"/></p> <p>PCDU: <input type="text" value="B"/> TTR: <input type="text" value="B"/></p> <p>Tx Chain: <input type="text" value="B"/> RFDN Switches Position: <input type="text" value="ABBB"/></p>	<p><b>Rx and Tx Chain</b></p> <p>Tx Chain (Xpnd, Tx, EPC, TWT): <input type="text" value="A"/></p> <p>TC decoder: <input type="text" value="A"/></p> <p>TM Rate: <input type="text" value="Medium (150Kbps)"/></p> <p>RFDN Switches in use: <input type="text" value="1&amp;3"/></p> <p><b>SSMM</b></p> <p>Mass Memory: <input type="text" value="A0 and B0"/></p>
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**IST\_START Configuration Panel**

*RVs #1*  
*23/05/08*  
*STX*

Test location: <i>ESTEL</i>	Operator: <i>M.</i>	Product-Assurance: <i>STX</i>	Date: <i>23/05/08</i>	Time: <i>04:40</i>
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Step-No.	IST_START-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
2	<p><b>Z010999MCVT003_IST_START</b></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><b>"START Satellite HERSCHEL "IST_START"</b></p> <p>⇒ Choose "Yes" or "No"</p>	YES				✓	
3	<p><b>Z010999MCVT097_ASDGEN_CRIT_PARS_CHECK</b></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: OTR	Operator DL	Product Assurance: BA	Date: 27/05/08	Time 04:43
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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 ????????????</p> <p>Set TCDecoder to ?</p> <p>Set PM_SW ??</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 TCDec. PM/SW</p>		<p>SAS + Startchayw B <u>B1</u></p>	<p>R/S # 1 23/05/08</p> <p>ATTACHED TO TP0190 23/05/08</p>	✓	

Test location: ESTER	Operator RW	Product-Assurance: BIX.	Date: 23/05/08	Time 04:50
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Step- No.	IST_START-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
6	<p><b>Z010999MCVT001_POWER_ON_HER_IST</b>            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"> <li>→ TM chain / TM Acquisition synchronised and locked Status expected</li> <li>→ View / TM Transfer Frame Monitor                TM frame data should be received before few minutes</li> </ul> <p>⇒ click the button "OK" to proceed</p>					✓	
7	<p><b>Z010999MCVT001_POWER_ON_HER_IST</b>            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: E17EC	Operator DL	Product-Assurance: 	Date: 27/05/08	Time 05:00
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Step- No.	IST_START-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
8	<p><b>D102159SCVT001_GET_ALARM_STATUS</b>                      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>					✓	
9	<p><b>D102159SCVT001_GET_ALARM_STATUS</b>                      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>					✓	
9b when BCR OCP are detected ACTIVE	<p><b>Z010999MCVT001_POWER_ON_HER_IST</b></p> <p>Temporary workaround until <b>SPR-107 / NCR-3312</b> are solved</p> <p>⇒ click the button "YES" to proceed the workaround</p> <p><b>See SPR 107 / NCR 3312</b></p>	YES			<p><b>NCR 3492:</b> TTRMMemCorEr_A 1:=0  <b>SPR 244:</b> OutOfLimit for SA_Pan?_Temp_N/R (WMB0?569)  <b>SPR 284:</b> WARNING about missing TC  <b>SPR 285:</b> many TCs not acknowledged                      For launch clean run with real                      Battery fully charged, parameters                      BCR1, BCR2 are expected active.</p>	✓	

Test location: ESTEC	Operator DL.	Product-Assurance: B.M.	Date: 27/01/08	Time 05:30
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Step-No.	IST_START-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
10	<b>D102159SCVT032TIMESYNCRO</b> 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	<b>Z010999MCVT001_POWER_ON_HER_IST</b> ⇒ Click the button "End TS!" to proceed					✓	
12	<b>D102159SCVT001_GET_ALARM_STATUS</b> 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	<b>Z010999MCVT003_IST_START</b> Reply to the prompt: <p style="text-align: center;"><b>"CDMS Configuration:"</b> <b>"CROME settings PM?????"</b></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			PAB manual P/S # 1		ATTACHED TO TPOFD AS RUN.

Test location: <i>ESTEC</i>	Operator: <i>DW</i>	Product-Assurance: <i>[Signature]</i>	Date: <i>27/05/00</i>	Time: <i>05:40</i>
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Step-No.	IST_START-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
14	<b>D102159SCVT176_WRITE_CROME</b> ⇒ Click the button "End TS!" to proceed					✓	
15	<b>Z010999MCVT003_IST_START</b> 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		25 B D D D D D	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.	<b>D102159SCVT104_ENCODER_SELECT</b> ⇒ Click the button "End TS!" to proceed				SPR 286: TM check needs repeat	✓	

Test location: 0782	Operator DL	Product Assurance: BD	Date: 23/01/08	Time 05:55
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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		A2 B2		✓	
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. <b>NOTE:</b> After completion of Mass Memory initialisation (roughly 12 minutes per bank), i.e. when <b>ALL</b> affected mass memory banks are <b>ON</b> , 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>BSTC</i>	Operator: <i>DL</i>	Product Assurance: <i>[Signature]</i>	Date: <i>23/05/08</i>	Time: <i>05:53</i>
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Step-No.	IST_START-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
20	<p><b>Z010999MCVT003_IST_START</b></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		*6B A	<p><b>NCR-3119:</b> Alarms for TMs</p> <ul style="list-style-type: none"> <li>o KM130300</li> <li>o KM120300</li> <li>o KM110300</li> </ul> <p>fails status consistency check during CCU A on</p> <p>And for TMs</p> <ul style="list-style-type: none"> <li>o KM130301</li> <li>o KM120301</li> <li>o KM110301</li> </ul> <p>fails status consistency check</p> <p>The following is expected until TC DCT53170 is sent:</p> <ul style="list-style-type: none"> <li>o Events 28417 CCU A monitoring discarded</li> <li>o Events 28418 CCU B monitoring discarded</li> </ul>	✓	

Test location: EITEC	Operator DL	Product-Assurance: [Signature]	Date: 27/05/08	Time 05:58
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Step-No.	IST_START-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
21	<b>Z010999MCVT003_IST_START</b> Reply to the prompt: "Record CCU Temp In Background" ⇒ Click the button "Confirm" to proceed				Minimise Log file after starting	✓	
22 applicable only in launch (IST spec. 5.8.2 5.8.10 5.8.11)	<b>Z010999MCVT003_IST_START</b> Reply to the prompt : "STATUS SPACECRAFT and EGSE (Power ON)" ⇒ Click the button "Confirm" to proceed Reply to the next prompt: "Do you want to stop and notice each failure?" ⇒ Choose "YES" to proceed						N/A

Test location: ESTEC	Operator DL	Product-Assurance: BDH	Date: 23/05/08	Time 06:00
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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)	<b>Z010999MCVT1533_IST_STATUS</b>  Check the Satellite status displayed and ⇒ Click the button "OK" to proceed						
24	<b>Z010999MCVT003_IST_START</b>  Reply to the prompt: <b>ACMS SCOE Configuration – ACMS Power ON</b> ⇒ Click the button "Confirm" to proceed  Execute ACMS CONFIG procedure (Page 100) in parallel to the IST_START master					✓	

N/A

Test location: F7TEL	Operator: Dw	Product-Assurance: <i>[Signature]</i>	Date: 27/05/08	Time: 06:05
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Step-No.	IST_START-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
25	<b>Z010999MCVT003_IST_START</b> Reply to the prompt: "SET TCT Table for Ambient Temperature" ⇨ Click the button "Confirm" to proceed					✓	
26	<b>D102159SCVT032EnNomTCSLoops</b> ⇨ Click the button "End TS!" to proceed					✓	
27	<b>D102159SCVT115_CHECK_HCS_OFF</b> ⇨ Click the button "End TS!" to proceed					✓	
28	<b>Z010999MCVT003_IST_START</b> Reply to the prompt:     "EAT UPLOADING" ⇨ Click the button "Confirm" to proceed"					✓	

Test location: <i>ESTEC</i>	Operator: <i>DW</i>	Product Assurance: <i>[Signature]</i>	Date: <i>23/05/08</i>	Time: <i>06:05</i>
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Step-No.	IST_START-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
29	<p><b>D102159SCVT192_GET_EAT_REPORT</b></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><b>D102159SCVT192_GET_EAT_REPORT</b></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><b>D102159SCVT192_IST_UPLOAD_EAT</b></p> <p>⇒ Click the button "End TS!" to proceed</p>					✓	
32	<p><b>Z010999MCVT003_IST_START</b></p> <p>Ckcek 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: BITEC	Operator DL	Product Assurance: <i>[Signature]</i>	Date: 28/05/08	Time 06:10
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Step-No.	IST_START-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
33	<p><b>Z010999MCVT003_IST_START</b>            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 ?????)"            ⇒ Click the button "Confirm" to proceed</p>	To Check in Config. Table (Page 73) Bus PCDU RFDN TxCh. TTR Sep Strap		A A XADD A A W		✓	
34	<p><b>D102159SCVT175_SET_SURV_REG</b>            ⇒ Click the button "End TS!" to proceed</p>				SPR 289 No TM return for TM check	✓	
35 (only in launch test cases)	<p><b>Z010999MCVT003_IST_START</b>            Prompt: "Check CDMS Tables"            ⇒ Click the button "Confirm" to proceed</p>						

Test location: ETEC	Operator D.	Product Assurance: BD.	Date: 27/05/09	Time 06:13
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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		

N/A

N/A

N/A

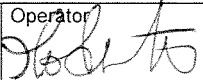
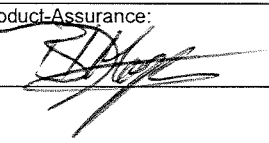
N/A

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

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					✓	
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 <b>All events, warnings and alarms recorded before the dump, are re-occurring during this step</b>	✓	

Test location: <i>ESTEC</i>	Operator: <i>[Signature]</i>	Product-Assurance: <i>[Signature]</i>	Date: <i>23/05/08</i>	Time: <i>07:08</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: 	Product Assurance: 	Date: 23/05/08	Time: 07:08
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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:  <b>"SSMM CONFIGURATION ??????"</b></p> <p>⇒ Click the button "Confirm" to proceed</p>	<p>To Check in Config. Table (Page 73)</p> <p>SSMM</p>		<p>X2</p> <p>DL</p>		✓	
2	<p>D102159SCVT186_IST_SSMM_ON</p> <p>Reply to the prompt <b>"Do you want to continue" "with such configuration?"</b></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: ESTEC	Operator: PLW	Product-Assurance: [Signature]	Date: 23/05/08	Time: 07:08
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Step-No.	IST_START_SSMM-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
4	<p><b>Z010999MCVT005_IST_START_SSMM</b></p> <p>Reply to the prompt: <b>"OBCP UPLOADING"</b></p> <p>⇒ Click the button "Confirm" to proceed</p> <p><b>Let run in parallel the sequence</b>  <b>D102159SCVT193_IST_UPLOAD_OBCP</b>                      and continue with next step "Packet Store Definition"</p>				occurrence of 2 BSW problems EvtID 30738	✓	
5	<p><b>Z010999MCVT005_IST_START_SSMM</b></p> <p>Reply to the prompt: <b>"Definition of the Packet Store"</b></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  <b>D102159SCVT185_IST_PACKET_STORE_DEF</b></p> <p>If 3 banks (banks 0, 1 and 2) are initialised on each SSMM  <b>D102159SCVT189_IST_PACKET_STORE_DEF2</b></p> <p>If SSMM A banks 0, 1 and 2 and only SSMM B bank 0 are initialised  <b>D102159SCVT178_RMS_PKT_STORE_DEF</b></p> <p>When the requested SSMM bank are initialised</p> <p>⇒ Click the button "Yes" to proceed</p>					✓	

Test location: <i>017e</i>	Operator: <i>Dw</i>	Product Assurance: <i>DA</i>	Date: <i>27/05/00</i>	Time: <i>07:08</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 &amp; B  <b>D102159SCVT185_IST_PACKET_STORE_DEF</b></p> <p>If 3 banks are initialised on SSMM A &amp; B  <b>D102159SCVT189_IST_PACKET_STORE_DEF2</b></p> <p>If 3 banks on SSMM A and only 1 on SSMM B are initialised  <b>D102159SCVT178_RMS_PKT_STORE_DEF</b></p> <p>⇒ Click the button "End TS!" to proceed</p>				NCR-3492 occurs: (TTRRMMemCorEr_A 2 := 1)!	✓	
8	<p><b>Z010999MCVT005_IST_START_SSMM</b></p> <p>Reply to the prompt: "Initialise MTL Service Buffers"</p> <p>⇒ Click the button "Confirm" to proceed</p>				TM(5,4) alarms expected: o Evt_MTLBufADel (ID:26914) o Evt_MTLBufBDeI (ID 26915)	✓	
9	<p><b>D102159SCVT209_START_ON_BOARD_SCHEDULE</b></p> <p>⇒ Click the button "End TS!" to proceed</p>				SPR 282 TM failure: too quick check	✓	
10	<p><b>D102159SCVT193_IST_UPLOAD_OBCP</b></p> <p>⇒ Click the button "End TS!" to proceed</p>					✓	

Test location: <i>EJTEL</i>	Operator: <i>Dh</i>	Product-Assurance: <i>BD</i>	Date: <i>27/09/08</i>	Time: <i>07:08</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: PTG	Operator PW	Product-Assurance: B.D.	Date: 27/05/02	Time 07:08
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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	<b>A102109SPVT003_ACMS_CONFIG25</b> At the prompt "Enter your choice", insert "1" to select "Select/Load ACMS_CONFIG Input File"  ⇒ Click the button "OK" to proceed	1			✓	
3	<b>A102109SPVT003_ACMS_CONFIG25</b>  ⇒ Click the button "Continue" to proceed				✓	
4	<b>A102109SPVT004_ACMS_LOADCONFIG1</b> At the prompt, "Enter your choice:"  ⇒ Click the button "OK" to proceed	To Check in Config. Table (Page 73) ACMS Config. File		Id-b-pms	✓	

Test location: E 1700	Operator DL	Product-Assurance: B.D.	Date: 25/01/00	Time 07:08
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Step-No.	ACMS_CONFIG-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
5 N/A for "Launch Clean Run"	<b>A102109SPVT003_ACMS_CONFIG25</b> At the prompt "Enter your choice", insert "6" ⇒ Click the button "OK" to proceed	6				✓	
6 N/A for "Launch Clean Run"	<b>A102109SPVT003_ACMS_CONFIG25</b> ⇒ Click the button "Continue" to proceed					✓	
7 N/A for "Launch Clean Run"	<b>A102109SPVT003_ACMS_CONFIG25</b> 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: EITEC	Operator Dh	Product-Assurance: <del>BD</del>	Date: 23/05/08	Time 07:08
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Step-No.	ACMS_CONFIG-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
8	<p><b>A102109SPVT003_ACMS_CONFIG25</b></p> <p>At the prompt "Enter your choice", insert <b>"4"</b> to select <b>"ACMS Power ON (in Pre-Sep configuration)"</b></p> <p>⇒ click the button "OK" to proceed</p>	4				✓	
9	<p><b>A102109SPVT003_ACMS_CONFIG25</b></p> <p>⇒ Click the button "CONTINUE" to proceed</p>					✓	
10	<p><b>A102109SPVT011_ACMS_ON</b></p> <p>During this sequence, following events are expected:</p> <ul style="list-style-type: none"> <li>- TM(5,4) Event Report and Reconfiguration Log</li> <li>- 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.</li> <li>- Multiple other events TM(5,1), such as "Fdir Task Overrun" or "Fdir Rm Parity Error"</li> </ul>				<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>ETEC</i>	Operator: <i>DW</i>	Product Assurance: <i>RDI</i>	Date: <i>27/05/08</i>	Time: <i>07:08</i>
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Step-No.	ACMS_CONFIG-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
11	<b>A102109SPVT003_ACMS_CONFIG25</b> At the prompt "Enter your choice", Insert <b>"5"</b> to select <b>"Modify ACC SGM/RM content"</b> ⇒ Click the button "OK" to proceed	5				✓	
12	<b>A102109SPVT003_ACMS_CONFIG25</b> ⇒ Click the button "Continue" to proceed					✓	
13	<b>A102109SPVT003_ACMS_CONFIG25</b> At the prompt "Enter your choice", Insert <b>"20"</b> for <b>"Default configuration for separation"</b> ⇒ Click the button "OK" to proceed	20			Expected Out of Limit of AEYYY109 (synchronisation) ACC may become INVALID for a short time  TC PM_Reset (ACY42109) not acknowledge expected	✓	
14	<b>A102109SPVT003_ACMS_CONFIG25</b> ⇒ Click the button "Continue" to proceed					✓	

Test location: <i>ESTEC</i>	Operator: <i>DL</i>	Product-Assurance: <i>[Signature]</i>	Date: <i>27/05/08</i>	Time: <i>07:08</i>
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Step-No.	ACMS_CONFIG-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
15	<b>A102109SPVT003_ACMS_CONFIG25</b> After about 10 min verify that ACMS Sequences are correctly terminated and ACMS CONFIG MAIN MENU 1.0 is available.					✓	
16	<b>A102109SPVT003_ACMS_CONFIG25</b> At the prompt "Enter your choice", Insert <b>"99"</b> to select <b>"Return to Main Menu 1.0"</b>  ⇒ Click the button "OK" to proceed	99				✓	
17	<b>A102109SPVT003_ACMS_CONFIG25</b>  ⇒ Click the button "Continue" to proceed					✓	

Test location: <i>ETC</i>	Operator <i>du</i>	Product-Assurance: <i>[Signature]</i>	Date: <i>27/09/20</i>	Time <i>07:09</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.

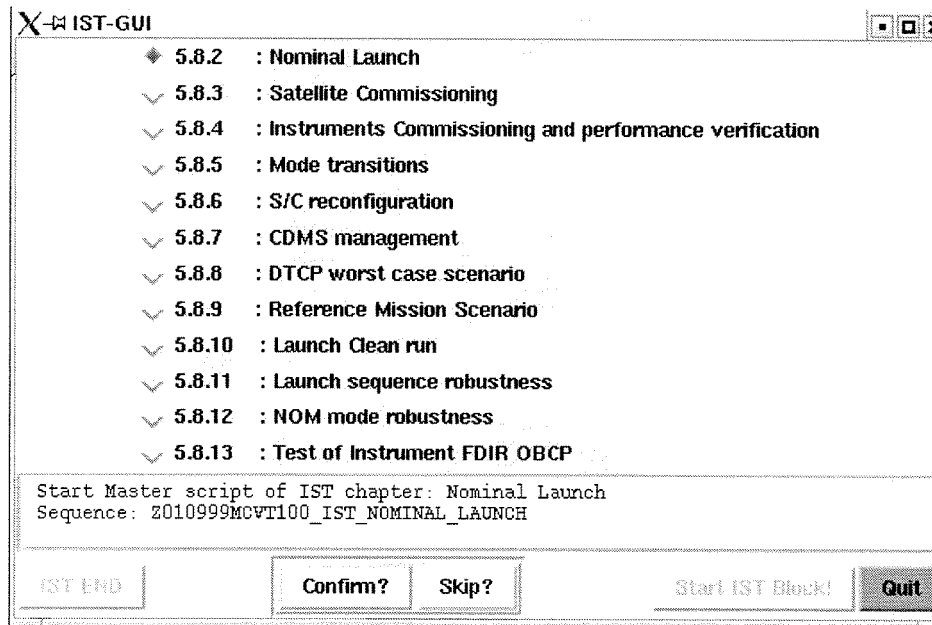


Figure 1: IST\_GUI calling Master sequence, for instance “Nominal Launch”

Test location: <i>ESTEC</i>	Operator: <i>[Signature]</i>	Product-Assurance: <i>[Signature]</i>	Date: <i>23/05/08</i>	Time: <i>07:09</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
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>ESTEC</i>	Operator: <i>[Signature]</i>	Product-Assurance: <i>[Signature]</i>	Date: <i>23/05/08</i>	Time: <i>14:09</i>
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7.4 IST END Procedure

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

Test location: <i>BSTBC</i>	Operator <i>Jeffrey</i>	Product-Assurance: <i>R. Goossens</i>	Date: <i>23-5-2008</i>	Time <i>14:45</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>				NR		
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>Eshe</i>	Operator: <i>J. Key</i>	Product-Assurance: <i>R. Goossens</i>	Date: <i>23-5-2008</i>	Time: <i>14:52</i>
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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	<b>Z010999MCVT004_IST_END</b> "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				<i>Nr</i>		
7. Only if RWL are still spinning	<b>Z010999MCVT004_IST_END</b> Start the sequence A102109SPVT061_RWL_SPINDOWN? ⇒ Click the button "YES" to proceed				Out of Limits concerning RWL speed are expected during RWL spin down <i>Nr</i>		
8. Only if ACMS is still ON	<b>Z010999MCVT004_IST_END</b> Start the sequence A102109SPVT012_ACMS_OFF ? ⇒ Click the button "YES" to proceed					✓	

Test location: <i>Ryherc</i>	Operator: <i>teffay</i>	Product Assurance: <i>R. Goossens</i>	Date: <i>23-5-2008</i>	Time: <i>15:00</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><b>A102109SPVT012_ACMS_OFF</b></p> <p>During this sequence, following event are expected to occur:</p> <ul style="list-style-type: none"> <li>• TM(5,2) EvtID: 33 Event Report - ACB Rx Failed</li> <li>• TM(5,2) EvtID: 33 Event Report - ACB Rx Failed</li> <li>• TM(5,4) EvtId:16426 Mode SBSM Entry</li> <li>• Event Report - Boot Report and Reconfiguration Log</li> <li>• Event Report - SDB Unhealthy</li> <li>• Multiple "New Tm 251004939"</li> <li>• Multiple "New Tm 251001939"</li> <li>• Multiple "New Tm 251002939"</li> </ul> <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><b>Z102999SCVT002_SREM_OFF</b></p> <p>⇒ Click the button "End TS!" to proceed</p>				<p>SPR 35-290 NCR 3986 Wrong TM set in HPSDB</p> <p>NO</p>		
11.	<p><b>D102159SCVT174_IST_REDUNDANT_CONF</b></p> <p>⇒ Click the button "Ens TS" to proceed</p>					✓	

Test location: <i>ECTEC</i>	Operator: <i>Jellen</i>	Product-Assurance: <i>R Goossens</i>	Date: <i>23-5-2008</i>	Time: <i>15:40</i>
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Step-No.	IST_END-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
12. Only if Survival Register set with separated flag	<b>Z010999MCVT004_IST_END</b>  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	<b>D102159SCVT175_SET_SURV_REG</b>  ⇒ Click the button "End TS!" to proceed					✓	

Test location: <i>B&amp;P&amp;C</i>	Operator <i>felky</i>	Product-Assurance: <i>R. Goossens</i>	Date: <i>23-5-2008</i>	Time <i>15:11</i>
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Step-No.	IST_END-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
14. Only if CROME wrongly set	<b>Z010999MCVT004_IST_END</b> 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				NA		
15. Only if CROME wrongly set	<b>D102159SCVT176_WRITE_CROME</b> ⇒ Click the button "End TS!" to proceed				NA		
16. Only if SSMM is ON	<b>D102159SCVT188_IST_DUMP_PKT_STORE</b> ⇒ Click the button "End TS!" to proceed					✓	
17. Only if SSMM is ON	<b>D102159SCVT181_Disable_PKT_STORE</b> ⇒ Click the button "End TS!" to proceed					✓	

Test location: <i>R4702c</i>	Operator: <i>Jellony</i>	Product Assurance: <i>R. Boossens</i>	Date: <i>23-5-2008</i>	Time: <i>15:20</i>
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Step-No.	IST_END-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
18. Only if SSMM is ON	<b>D102159SCVT187_IST_SSMM_OFF</b>  During this sequence, the following events are expected: <ul style="list-style-type: none"> <li>• TM(5,2) EvtId: 84 PM COCOS SPW C Reconnection</li> <li>• TM(5,4) EvtId: 88 MM A COCOS RT Failure</li> <li>• TM(5,4) EvtId: 148 MM SPW C address transfer error</li> <li>• TM(5,2) EvtId: 85 PM COCOS SPW C Reconnection</li> <li>• TM(5,4) EvtId: 89 MM A COCOS RT Failure</li> <li>• TM(5,4) EvtId: 149 MM SPW C address transfer error</li> </ul> ⇒ Click the button "End TS!" to proceed					✓	
19. Not for Launch Cases	<b>D102159SCVT001PM_SELECT</b>  ⇒ Click the button "End TS!" to proceed					✓	
20.	<b>Z010999MCVT002_POWER_OFF_HER_IST</b>  ⇒ Click the button "End TS!" to proceed					✓	

Test location: <i>ESBRC</i>	Operator: <i>Hellmer</i>	Product Assurance: <i>K. Goossens</i>	Date: <i>23-5-2008</i>	Time: <i>15:40</i>
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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	<b>Y102989ETVT020_TTC_SCOE_OFF</b>  ⇒ Click the button "End TS!" to proceed				NA		
21.	<b>Z010999MCVT004_IST_END</b>  ⇒ Click the button "End TS!" to proceed					✓	
22.	<b>IST_GUI</b>  ⇒ Click the button "Quit" to terminate the test sequence					✓	
23.	<b>Update CVS Tag</b>  1. Open a <b>shell</b> (xterm)  2. Execute the command <b>update_tag</b>  Insert the name of <b>TAG</b> → <b>IST_x_PART_x_TP_xxxx_x_x_END_xxx</b>					✓	

Test location: <i>B. S. V. C.</i>	Operator <i>J. J. J.</i>	Product-Assurance: <i>R. Goossens</i>	Date: <i>21-5-2008</i>	Time <i>15:53</i>
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**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><b>A102109SPVT003_ACMS_CONFIG25</b></p> <p>At the prompt "Enter your choice", insert <b>"2"</b> to select <b>"Transition SCM to OCM"</b></p> <p>⇒ Click the button "OK" to proceed, then "Continue"</p>	2					
25.	<p><b>A102109SPVT003_ACMS_CONFIG25</b></p> <p>At the prompt Menu 7 "Enter your choice", insert <b>"5"</b> to select <b>"Reaction wheels spin down"</b></p> <p>Click the button "OK" to proceed, then "Continue"</p>	5					
26.	<p><b>A102109SPVT003_ACMS_CONFIG25</b></p> <p>At the prompt Menu 9 "Enter your choice", insert <b>"1"</b> to select <b>"Switch off ACMS"</b></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><b>A102109SPVT012_ACMS_OFF</b></p> <p>During this sequence, following event are expected to occur:</p> <ul style="list-style-type: none"> <li>• TM(5,4) EvtId:16426 Mode SBSM Entry</li> <li>• Event Report - Boot Report and Reconfiguration Log</li> <li>• Event Report - SDB Unhealthy</li> <li>• TM(5,2) EvtID: 33 Event Report - ACB Rx Failed</li> <li>• TM(5,2) EvtID: 33 Event Report - ACB Rx Failed</li> <li>• Multiple "New Tm 251004939"</li> <li>• Multiple "New Tm 251001939"</li> <li>• Multiple "New Tm 251002939"</li> <li>• Multiple TM(5,1) such as "FDir Task Overrun", etc...</li> </ul>						
28.	<p><b>A102109SPVT003_ACMS_CONFIG25</b></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 :
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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
				:



8.1 Procedure Variation Summary

	Test Change	Curr. No.:	
		Date	
		Page	of
Test designation	Test Procedure	Issue	Rev.
Test step changed	Reason for Change		
<p>P/S#1 ATTACHED TO TP0190 AS RUN 23/05/07. <i>[Signature]</i></p>			
Prepared by:	Resp. Test Leader	Project Engineer	
PA/QA	Prime	Customer	

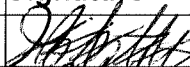


Table 8.1-1: Procedure Variation Sheet





### 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	23/04/08	
Test Conductor	23/04/08	
PA Responsible	23/04/08	

## 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

```

```

|-----|-----> 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 $pccuSM $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 AB BB 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	S/C Reconfiguration
Session ID	2008_05_23_04_37_hercedmu_hpws22_REALTIME_SC_REC CONF
Start Time:	04:37
End Time	16:03
CVS Tag for Test	sess 2008_05_23_04_30_hercedmu_hpws22_REALTIME_
Applicable IST Specification	HP-2-ASED-SP-0939
Test conductor	P. MODESTO
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

<b>Title:</b> ACMS SCOE does not boot	<b>Date:</b> 06/02/08
<b>Observation:</b>	
<p>The ACMS SCOE does not boot.</p> <p>Reason: One of the STR UCE (Unit Checkout Equipment) electrical stimuli programs hangs.</p>	
<b>Operator Action:</b>	
<p>Until NCR / SPR is solved the following workaround is proposed (by Martijn):</p> <p>During powering the Power SCOE in the cleanroom:</p> <ol style="list-style-type: none"> <li>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.</li> <li>2) Kill the running application, by pressing the cross in the upper right corner.</li> <li>3) Start the UCE application by double clicking the icon 'SMI', an application 'Star Mapper Analogue Chain Simulation' should start up.</li> <li>4) Press 2 time 'scroll lock' and select PC#3 and repeat step 3.</li> </ol>	

Operation Note 8

<b>Title:</b>	DOD Alarm	<b>Date:</b> 14/02/08
<b>Observation:</b>		
<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>		
<b>Operator Action:</b>		
<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 -&gt; startCMD bsvnc          On the window "H-P BS SCOE" switch to local          On the window "BS SCOE Config" change the <b>Battery Voltage</b> from <b>25.4</b> to <b>19</b>          The push the button <b>save&amp;update</b>          On the window "BS SCOE Config" change the <b>Battery Voltage</b> from <b>19</b> to <b>25.4</b>          The push the button <b>save&amp;update</b>          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

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



END OF DOCUMENT

Insert actual distribution list

## Attachment 4 to Section 6.7:

# As-Run Procedure HP-2-ASED-TP-0190

Formal AS Run

2008-05-23-04-37-herscdmu-hpws22-  
REALTIME-SC-RECONF

TAG: SESS 2008-05-23-04-30-herscdmu-hpws22-REALTIME  
Issue: **Herschel Satellite IST Test Case 'S/C Reconfiguration'**

CDMS Level 4 only

23/05/08

CI-No: 100000

Prepared by:	<u>Functional Team</u>	Date:	<u>21/04/2008</u>
Checked by:	<u>C. Much</u> <i>C. Much</i>		<u>22/4/2008</u>
Product Assurance:	<u>J. Hall</u> <i>J. Hall</i>		<u>21/4/2008</u>
Configuration Control:	<u>W. Wietbrock</u> <i>W. Wietbrock</i>		<u>30/04/08</u>
TASF Engineering:	<u>G. Beauvils</u> <i>po. G. Beauvils</i>		<u>21 APR 08</u>
TASF Test Director	<u>S. Mooney</u> <i>S. Mooney</i>		<u>21/4/2008</u>
Project Management:	<u>Dr. W. Fricke</u> <i>Dr. W. Fricke</i>		<u>22.04.08</u>
Approved by TASF	<u>D. Montet</u> <i>Po. LELIEVRE JL</i>		<u>21/4/2008</u>
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 "S/C Reconfiguration". 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 S/C Reconfiguration 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 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.

### 1.2 Operational Flow

In paragraph 7 is provided the detailed step-by-step test procedure.



## 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

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 Software Configuration**

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

### **4.3 SCOE Cables Configuration**

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

### **5.4 GSE**

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 Test Execution Step-by-Step Procedure

### 7.1 5.8.6.2 Test start configuration

Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
10.	<b>Z010999MCVT080_IST_FDIR_ASTRUM</b> if appear the message "The HPPCCS session's name is defined without FDIR _X"  Click ok to continue					✓	SP
20.	<b>Z010999MCVT080_IST_FDIR_ASTRUM</b>  Start Herschel IST Reconfiguration (FDIR) section 5.8.6  Press yes					✓	SP
30.	<b>Z010999MCVT080_IST_FDIR_ASTRUM</b>  TT&C SCOE CONNECTION  Click the button Confirm to proceed					✓	SP

Test location: <i>ESTEC</i>	Operator: <i>[Signature]</i>	Product-Assurance: <i>[Signature]</i>	Date: <i>23/05/08</i>	<i>07829</i>
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Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
40.	<b>Z010999MCVT080_IST_FDIR_ASTRUM</b> CDMS Setting for Separation Click the button Confirm to proceed					✓	APP
50.	<b>Before to perform next step wait until the</b> <b>D102159SCVT152_IST_LAUNCH_SUNACQ</b> Arrive at the point in which wait for separation straps open. (the separation straps will be open by ACMS performing next step)					✓	APP
60.	<b>A102109SPVT103_ACMS_CONFIG25</b> To go in menu 3.0 Please select Main Menu 1.0: Option 88 Click the button OK to proceed					✓	APP
70.	<b>A102109SPVT103_ACMS_CONFIG25</b> Click the button Continue to proceed					✓	APP

Test location: <b>ESTEC</b>	Operator: <i>[Signature]</i>	Product-Assurance: <i>[Signature]</i>	Date: <b>23/05/02</b>	<b>07:31</b>
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Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
80.	<b>A102109SPVT103_ACMS_CONFIG25</b> Select SEPARATION (opening separation straps). Main Menu 3.0: Option 2  Click the button OK to proceed					✓	9/10
90.	<b>A102109SPVT103_ACMS_CONFIG25</b> Click the button Continue to proceed					✓	9/10
100.	<b>A102109SPVT034_ACMS_SAM_MON</b> Want to continue to monitor SAM sun pointing mode ? Select Option no  Click the button OK to proceed					✓	9/10
110.	At appearance of <b>A102109SPVT017_ACMS_CRS_BACKGROUND</b> Script window can be put in the background					✓	9/10
120.	<b>D102159SCVT152_IST_LAUNCH_SUNACQ</b> At the end of the sequence Click the button "End TS!" to proceed					✓	9/10

Test location: <b>ESTEC</b>	Operator <i>[Signature]</i>	Product-Assurance: <i>[Signature]</i>	Date: 23/05/08	07:36
--------------------------------	--------------------------------	--	-------------------	-------



Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
130.	<b>Z010999MCVT080_IST_FDIR_ASTRUM</b> Transition to NOMINAL (transition to nominal with CDMS)  Click the button Confirm to proceed					✓	pp
140.	<b>D102159SCVT108_IST_SUNACQ_NOM</b>  Click the button "End TS!" to proceed					✓	pp
150.	<b>A102109SPVT103_ACMS_CONFIG25</b>  Select Transition to OCM. Main Menu 4.0 SAM Phase: Option 6  Click the button OK to proceed					✓	pp
160.	<b>A102109SPVT103_ACMS_CONFIG25</b>  Click the button Continue to proceed					✓	pp
170.	<b>A102109SPVT036_ACMS_STR_ON</b>  Do you want to change the current STR in use ?: Answer no  Click the button OK to proceed					✓	pp

Test location: <b>ESTEC</b>	Operator: <i>[Signature]</i>	Product-Assurance: <i>[Signature]</i>	Date: <b>23/05/08</b>	<b>07:41</b>
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Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
180.	<b>A102109SPVT043_TRANSITION_TO_OCM</b> Verify after ca. 7 min if ACMS mode is = OCM point fine (Earth pointing)					✓	PP
190.	<b>A102109SPVT043_TRANSITION_TO_OCM</b> Verify in AND: ZAA00999 if Est Attitude Q1..Q4 is close to Cur Target Q1/Q3 = 0, Q2=0.6 / Q4= 0.79					✓	PP
200.	<b>A102109SPVT043_TRANSITION_TO_OCM</b> Verify AESM3002 = OCM point fine or in synoptic SAT – ACMS – ACC – Mode Nominal					✓	PP
210.	<b>A102109SPVT043_TRANSITION_TO_OCM</b> SUSPEND click on script name  Click the button RESUME to proceed				FCV duty cycle fail  N/A		
220.	<b>A102109SPVT103_ACMS_CONFIG25</b> Select Transition to SCM (Science mode). Main Menu 7.0: Option 3  Click the button OK to proceed					✓	PP

Test location: <b>ESTEC</b>	Operator: <i>[Signature]</i>	Product-Assurance: <i>[Signature]</i>	Date: <b>23/05/08</b>	<b>08:08</b>
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Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
230.	<b>A102109SPVT103_ACMS_CONFIG25</b> Click the button Continue to proceed					✓	
240.	<b>A102109SPVT038_RWL_ON</b> Do you want to change actual on-board wheel set selected in the nominal configuration ? RWL 1-2-4 selected, RWL-3 not selected Click the button NO to proceed ?					✓	
250.	<b>A102109SPVT042_RWL_SPINUP</b> Change actual Angular Momentum (initial values)? Option: no Wait for ca. 10 min					✓	
260.	<b>OPERATOR INFO</b> Verify RWL speed in plotting window 1. Select REALTIME->DESKTOP->MONITORING->TM Plotting Tool 2. Select Directory: Home/heracms/plotting 3. Select FILE -> LOAD -> 15 (RWLs_REAL(cal)&Simul_SPEED.txt)					✓	

MP  
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Test location: <i>Estec</i>	Operator: <i>Roberto</i>	Product-Assurance: <i>SDM</i>	Date: <i>23/05/08</i>	<i>08#13</i>
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Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
270.	<b>OPERATOR INFO</b> Verify 4x RWL momentum parameters  AEWMA002 = 11.0 +/- 25% (RWL1 momentum) AEWMB002 = - 9.4 +/- 25% (RWL2 momentum) AEWMC002 = 0.0 +/- 25% (RWL3 momentum) AEWMD002 = - 8.5 +/- 25% (RWL4 momentum)					V	
280.	<b>A102109SPVT042_RWL_SPINUP</b>  Target wheel speed not reached after 600 sec <b>SUSPEND</b> click on script name  Click the button RESUME to proceed					V	
290.	<b>A102109SPVT042_RWL_SPINUP</b>  Click the button "End TS!" to proceed					V	

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Test location: <b>ESTEC</b>	Operator: <i>[Signature]</i>	Product Assurance: <i>[Signature]</i>	Date: <b>23/05/08</b>	<b>08:24</b>
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Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
300.	<p><b>OPERATOR INFO</b></p> <p>Verify in SAT synoptic SAT – ACMS – ACC – Mode Nominal = SCM Point Fine</p> <p>Verify in Telemetry window ZAAF0999 (diagnostic TM)</p> <p>As long as the ACMS is switched On the Menu Box has to be present !!!</p>					✓	JP
310.	<p><b>Z010999MCVT080_IST_FDIR_ASTRUM</b></p> <p>ACMS is in SCM point Fine</p> <p>Click ok to procede</p>					✓	JP
320.	<p><b>Z010999MCVT080_IST_FDIR_ASTRUM</b></p> <p>Switch ACMS units (STR2 and GYRE 1) to BUS B</p> <p>Click the button Confirm to proceed</p>					✓	JP
330.	<p><b>Z010999MCVT080_IST_FDIR_ASTRUM</b></p> <p>Transition from SAS 900W and BS 24V to SAS 1475W and BS full charged</p> <p>Click the button Confirm to proceed</p>					✓	JP

Test location: <b>ESTEC</b>	Operator <i>[Signature]</i>	Product Assurance: <i>[Signature]</i>	Date: <b>23/05/08</b>	<b>9:38</b>
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Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
340.	Switch on SREM Click the button Confirm to proceed					✓	
350.	Z010299SCVT001_SREM_ON Click the button "End TS!" to proceed					✓	
360.	<del>Z010999MCVT080_IST_FDIR_ASTRUM</del> <del>Set RX1 to 125 BPS &amp; Switch OFF TX Chain &amp; STOP the Onboard Scheduling</del> <del>Click the button Confirm to proceed</del>				N/A PVS #1		
370.	Z010999MCVT080_IST_FDIR_ASTRUM Power ON HIFI ICU A Click the button Confirm to proceed				PVS #2		
380.	<b>OPERATOR INFO</b> On HPCCS start Packet History displays for the following APIDs:1024,1026				(covered) BY TP206 N/A PVS #2		

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HP

Test location: <b>ESTEC</b>	Operator: <i>[Signature]</i>	Product Assurance: <i>[Signature]</i>	Date: <b>23/03/08</b>
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Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
390.	<b>Z102999SCVT014_ASDGEN_HIFIPWRON_P</b> FM HiFi ICU standalone switch on. Select NO to abort TS if not correct.  Click the button "YES" to proceed				ANDs HA000289 HA004289 <i>PKS#2</i> <i>N/A</i>		
400.	<b>Z102999SCVT014_ASDGEN_HIFIPWRON_P</b> Set Bus Profile Back to Original Setting? (yes or no)  Click the button "YES" to proceed				<del>PKS#2</del>		
410.	<b>OPERATOR INFO</b> Verify HK TM packets are being received on APIDs 1024 & 1026				<i>PKS#2</i> <del>PKS#2</del> <i>N/A</i>		
420.	<b>Z010999MCVT080_IST_FDIR_ASTRUM</b> Power ON PACS Warm Units <i>REF TO TP206 SECTION 7.1</i>  Click the Confirm button to proceed				<i>PKS#2</i>	✓	
430.	<b>OPERATOR INFO</b> On HPCCS start Packet History displays for the following APIDs: 1152, 1154				<i>covered in to 206</i>	✓	

Test location: <i>ESTCC</i>	Operator <i>DW</i>	Product-Assurance: <i>[Signature]</i>	Date: <i>21/05/08</i>
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Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
440.	<b>Z102999SCVT010_ASDGEN_PACSPWRON_P</b> FM PACS Switch ON in Warm or Cold conditions, FPU connected - Select NO to abort TS if not correct  Press YES to proceed				covered in 206  Rs#2	✓	
450.	<b>Z102999SCVT010_ASDGEN_PACSPWRON_P</b> At the prompt to confirm that OBCP are loaded and enabled  Press YES to proceed				" Rs#2	✓	
460.	<b>OPERATOR INFO</b> The test script will power on all PACS warm units, force boot the DPU ASW and configure the instrument to SAFE (Standby mode)				" Rs#2	✓	
470.	<b>Z102999SCVT010_ASDGEN_PACSPWRON_P</b> Set Bus Profile Back to Original Setting? (Yes or No)  Select <b>YES</b>					✓	
480.	<b>OPERATOR INFO</b> Verify HK TM packets are being received on APIDs 1152 & 1154				covered in 206	✓	

Test location: BITEC	Operator DL	Product-Assurance: B.A.	Date: 21/01/08
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Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
490.	<p><b>OPERATOR INFO</b> 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 <del>SAFE</del> mode: NOW - PAIRO</p>				COVERED IN to 206 PVS#2	✓	
500.	<p><b>Z010999MCVT080_IST_FDIR_ASTRUM</b> Power ON SPIRE DPU and DRCU  Click the Confirm button to proceed</p>				PVS #2	✓	
510.	<p><b>OPERATOR INFO</b> On HPCCS start Packet History displays for the following APIDs: 1280, 1282</p>				COVERED IN 206	✓	
520.	<p><b>Z102999SCVT004_ASDGEN_SPIREPWRON_P</b> SPIRE Switch ON for IST Debug only in warm conditions - Select NO to abort TS if not correct  Click YES to proceed</p>				//	✓	

Test location: DIA	Operator Mh.	Product-Assurance: [Signature]	Date: 23/05/07
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Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
530.	<b>OPERATOR INFO</b> 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).				congrat in 206	✓	
540.	<b>Z102999SCVT004_ASDGEN_SPIREPWRON_P</b> Set Bus Profile Back to Original Setting?  Click YES button to proceed					✓	
550.	<b>OPERATOR INFO</b> Verify HK TM packets are being received on APIDs 1280 & 1282				congrat in 206	✓	
560.	<b>Z010999MCVT080_IST_FDIR_ASTRUM</b> CEL A&B Downlink, Get ACC RM Status and Dump the Event Buffers  Click the Confirm button to proceed					✓	
570.	<b>D102129SCVT188_IST_DUMP_PKT STORE</b> Click "End TS!" to proceed					✓	

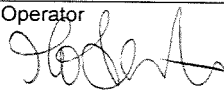

Test location: <i>OTC</i>	Operator <i>Ph</i>	Product-Assurance: <i>BM.</i>	Date: <i>23/05/08</i>
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Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
580.	<del>Z010999MCVT080_IST_FDIR_ASTRUM</del> Status Spacecraft (CDMS -> NOM ACMS -> SCM and EGSE (5.8.6.2) Click the button Confirm to proceed				N/A		
590.	<del>Z010999MCVT080_IST_STATUS</del> Do you want to stop and notice each failure ? Click the button YES to proceed				N/A		
600.	<del>Z010999MCVT080_IST_STATUS</del> Click the button OK to proceed				N/A		
* RUS 3	CDMS Level 3a						
630.	Operator INFO Please open in realtime/desktop/commanding/onboard queue					✓	
640.	Z010999MCVT080_IST_FDIR_ASTRUM Start MTL (FDIR) (ca. 5 min) Click the button Confirm to proceed				Note: do not abort SCOE application. -> Enter always no	✓	
650.	D0102159SCVT153_MTL_FDIR Click the button "End TS!" to proceed					✓	

Test location: Estec	Operator: <i>[Signature]</i>	Product-Assurance: <i>[Signature]</i>	Date: 23/05/08 18:16
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Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
660.	<p>Check in SCM CIR Point</p> <p>Click the button Confirm to proceed</p>					✓	
670.	<p><b>OPERATOR INFO</b></p> <p>One time that the sequence A02109spvt087_acms_ist_FN is running perform the next step and go ahead with the test</p> <p><b>Trigger the Software Alarm</b></p>					✓	
680.	<p><del>Z010999MCVT080_IST_FDIR_ASTRUM</del></p> <p><del>Perform CDMS Level 3A Transition from NOMINAL to EARTH</del></p> <p><del>Click the button Confirm</del></p>						
690.	<p><b>OPERATOR INFO</b></p> <p>Wait for TC alarm</p> <p>(see in command history for DCN36170 FdirSwAlarm -&gt; yellow)</p> <p>After 20 sec verify in Telemetry window ZAA01999</p> <p>Verify AESM3002 ACMSMain AID = SCM slew init to SCM slew CIR (see also SAT synoptic)</p>						

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YAP

Test location: ESTEC	Operator: 	Product-Assurance: 	Date: 23/05/08 12:17
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Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
700.	<del>ACMS_CRS_BACKGROUND IF TM packet not received -&gt; window appears Enter no to proceed</del>				N/A		
710.	<del>CDMS_ANALYSIS_FDIR_IST Click the button "End TS!" to proceed</del>				//		
720.	<del>DUMP_PKT STORE Click the button "End TS!" to proceed</del>				//		
730.	<del>FDIR_NOM_TO_EARTH_3a Click the button "End TS!" to proceed</del>				//		
740.	<del>Z010999MCVT080_IST_FDIR_ASTRUM Switching to RF (ca. 20 min) Click the button Confirm</del>				//		
750.	<del>OPERATOR INFO Verify (pyramide, off, mid curve, 3 curves &amp; pyramide) signal at TT&amp;C SCOE Verify in Packet History TM reception</del>				//		

PUS # 1  
 FDIR  
 23/05/08

Test location:	Operator	Product-Assurance:	Date:
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Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
760.	<del>Z010999MCVT080_IST_FDIR_ASTRIMUM Get RM Status and Dump the event buffer to get the CIR event Click the button Confirm</del>				N/A		
770.	<del>Z010999MCVT080_IST_FDIR_ASTRIMUM Status Spacecraft (CDMS -&gt; EAM / ACMS -&gt; SCM) and EGSE) Click the button Confirm to proceed</del>				//		
780.	<del>Z010999MCVT080_IST_FDIR_ASTRIMUM Do you want to stop ... ? Enter YES</del>				//		
790.	<del>Z010999MCVT153_IST_STATUS Please open OnBoard Queue in RealTime window Click the button Confirm</del>				//		

Pos # 4 RM 23/05/08

Test location:	Operator	Product-Assurance:	Date:	
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Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
800.	<del>OPERATOR INFO Verify that Are all MTL TCs in onboard queue disabled ?</del>				N/A		
810.	<del>Z010999MCVT080_IST_STATUS Should CCU HK automatically be tested ? Enter YES</del>				//		
820.	<del>Z010999MCVT080_IST_STATUS Click the button "OK" to proceed</del>				//		
	<b>CDMS Level 3b</b>						
830.	<del>Z010999MCVT080_IST_FDIR_ASTRUM Switch S/C control (TC and TM) from RF link to UMB Click the button Confirm to proceed</del>				//		
840.	<del>Z010999MCVT080_IST_FDIR_ASTRUM Switching ON STR-1 () Click the button Confirm to proceed</del>	To Do	PVS	#3	//		
850.	<del>Z010999MCVT080_IST_FDIR_ASTRUM Preparatory Task for CDMU Alarm 3b Click the button Confirm to proceed</del>				//		
Test location:		Operator		Product-Assurance:		Date:	

PVS #1  23/05/08

Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
860.	<del>Z010999MCVT003_SREM_ACQ_START Click the button "End TS!" to proceed</del>				N/A		
870.	<del>Z010999MCVT080_IST_FDIR_ASTRIMUM Perform CDMS level 3b Transition from Earth to Earth, before first 3a alarm Click the button Confirm to proceed</del>				//		
880.	<del>Z010999MCVT080_IST_FDIR_ASTRIMUM Perform CDMS level 3b Transition from Earth to Earth, first 3a alarm Click the button Confirm to proceed</del>				//		
900.	<del>D102159SCVT154 CDMS_ANALYSIS_FDIR_IST Click the button "End TS!" to proceed</del>				//		
910.	<del>Z010999MCVT080_IST_FDIR_ASTRIMUM Status Spaceraft (CDMS -&gt;EAM   ACMS -&gt;SCM) and EGSE Click the button Confirm to proceed</del>				//		
920.	<del>Z010999MCVT153_IST_STATUS Click the button YES to proceed</del>				/		

Rvs #1 BM 23/05/2008

Test location:	Operator	Product-Assurance:	Date:
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Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
930.	<del>Z010999MCVT153_IST_STATUS Click the button "OK" to proceed</del>				N/A		
940.	<del>Z010999MCVT080_IST_FDIR_ASTRUM Perform CDMS level 3b Transition from Earth to Earth, before second 3a alarm Click the button Confirm to proceed</del>				//		
950.	<del>Z010999MCVT080_IST_FDIR_ASTRUM Change the XPND Settings Click the button Confirm to proceed</del>				//		
960.	<del>Z010999MCVT080_IST_FDIR_ASTRUM Perform CDMS level 3b Transition from Earth to Earth, second 3a alarm Click the button Confirm to proceed</del>				//		
970.	Z010999MCVT080_IST_FDIR_ASTRUM Configure the TT&C SCOE settings for RF Click the button Confirm to proceed				BT		

P/S#1 BDA 26/05/08

Test location:	Operator	Product-Assurance:	Date:
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Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
980.	<del>Z010999MCVT080_IST_FDIR_ASTRIMUM</del> Perform CDMS level 3b Transition from Earth to Earth, after second 3a alarm Click the button Confirm to proceed				N/A		
990.	<del>D102159SCVT154 CDMS_ANALYSIS_FDIR_IST</del> Click the button "End TS!" to proceed				//		
1000.	<del>D102159SCVT188_IST_DUMP_PKT_STORE</del> Click the button "End TS!" to proceed				//		
1010.	<del>Z010999MCVT080_IST_FDIR_ASTRIMUM</del> Get RM Status and Dump the Event Buffers to get the CIR Event (After 3b) Click the button Confirm				//		
1020.	<del>Z010999MCVT080_IST_FDIR_ASTRIMUM</del> Status Spacecraft (CDMS ->EAM ACMS ->SCM AND EGSE Click the button Confirm				//		
1030.	<del>Z010999MCVT153_IST_STATUS</del> Enter: YES				/		

23/05/08  
 # SN  
 TS #1

Test location:	Operator	Product-Assurance:	Date:
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Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
1040.	<del>Z010999MCVT153_STATUS_IST Click the button OK to proceed</del>				N/A		
1050.	<del>Z010999MCVT080_IST_FDIR_ASTRUM Re-Activate MTL Click the button Confirm to proceed</del>				//		
1060.	<del>Z010999MCVT080_IST_FDIR_ASTRUM Perform CDMS transition Earth to Nominal Click the button Confirm to proceed</del>				//		
1070.	<del>D102159SCVT158_FDIR_MOMINAL_SUNACQ Click the button "End TS!" to proceed</del>				//		
1080.	<del>D102159SCVT176_WRITE_CROME Click the button "End TS!" to proceed</del>				//		

Pls #1 BM 23/05/08

Test location:	Operator	Product-Assurance:	Date:
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Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
1090	<del>Z010999MCVT080_IST_FDIR_ASTRUM Status Spacecraft (CDMS -&gt; NOM ! ACMS -&gt; SCM) and EGSE Click the button Confirm to proceed</del>				N/A		
1100	<del>Z010999MCVT153_IST_STATUS Enter: YES</del>				//		
1110	<del>Z010999MCVT153_STATUS_IST Click the button OK to proceed</del>				//		
1120	<del>Z010999MCVT080_IST_FDIR_ASTRUM Set PACS in prime mode. This step will start the script P102999SCVT904_ASDGENPACS_nomSpect This sequence simulate the science. Data kill this sequence after the acms level 4</del>				//		
1130	<del>P102999SCVT904_ASDGENPACS_nomSpect FM PACS simulate spectroscopy for test in any condition. Abort TS if not correct Click the button YES to proceed</del>				0		
Test location:		Operator		Product-Assurance:		Date:	

PAs #1 B/D 23/05/08

Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
1140	<del>Z010999MCVT080_IST_FDIR_ASTRIMUM</del> Preparatory Tasks for ACMS alarm level 4 Click the button Confirm to proceed				N/A		
1150	<del>Z010999MCVT080_IST_FDIR_ASTRIMUM</del> Perform ACMS Level 4 Transition from SCM to SASM, Error Injection on AAD Click the button Confirm to proceed				//		
1160	<del>Z010999MCVT080_IST_FDIR_ASTRIMUM</del> Timeout occurred (no TM) (see also System Status at TM/TC DFE) Break CEV to proceed				//		
1170	<del>Z010999MCVT080_IST_FDIR_ASTRIMUM</del> Change the TT&C SCOE Settings to work at 125 bps Click the button Confirm to proceed				//		

P/S #1  
 23/05/08  
 [Signature]

Test location:	Operator	Product-Assurance:	Date:
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Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
1180.	<p><b>Z010999MCVT080_IST_FDIR_ASTRUM</b></p> <p>Wait ca. 25 min</p> <p>Wait for TT&amp;C SCOE lock &amp; Sync and then TM to reappear (see System Status at TM/TC DFE, observe Telemetry Packet History window)</p>				N/A		
1190.	<p><b>Z010999MCVT080_IST_FDIR_ASTRUM</b></p> <p>After ACMS Level 4 Transition from SCM to SASM, check ACMS settings</p> <p>Click the button Confirm to proceed</p>				//		
1200.	<p><b>Z010999MCVT080_IST_FDIR_ASTRUM</b></p> <p>Are you executing the test in RF ?</p> <p>Click the button YES to proceed</p>				//		
1210.	<p><b>Z010999MCVT080_IST_FDIR_ASTRUM</b></p> <p>Only for info Verify that sun remains within operational zone...</p> <p>Wait for 5 min.</p> <p>Verify that ... Wait for 5 min</p>				//		
Test location:		Operator		Product-Assurance:		Date:	

RVs # 1  
 23/05/08

Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
1220	<del>Z010999MCVT080_IST_FDIR_ASTRIMUM</del> Check Status of SunAcquisition Mode of CDMS Click the button Confirm to proceed				N/A		
1230	<del>D10299MCVT159_FDIR_CHECK_SUNACQMODE</del> Click the button "End TS!" to proceed				//		
1240	<del>Z010999MCVT080_IST_FDIR_ASTRIMUM</del> Status Spacecraft (CDMS -> SAM ! ACMS -> SASM) and EGSE Click the button Confirm to proceed				//		
1250	<del>Z010999MCVT080_IST_STATUS</del> Do you want to stop and notice each failure ? Click the button YES to proceed				//		
1260	<del>Z010999MCVT080_IST_STATUS</del> Please open onboard queue And answer to the question				//		

R/S #1  
  
 23/05/08

Test location:	Operator	Product-Assurance:	Date:
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Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
1270.	<del>Z010999MCVT080_IST_STATUS Click the button "End TS!" to proceed</del>				N/A		
	<del>ACMS recovery from Survival Mode (ACMS SASM to SAM)</del>				//		
1280.	<del>Z010999MCVT080_IST_FDIR_ASTRUM SWITCH TM-TC RATE FROM 500BPS/125BPS TO 5KBPS/4KBPS Click the button Confirm to proceed</del>				//		
1290.	<del>Z010999MCVT080_IST_FDIR_ASTRUM Operator info Wait to receive TM After click ok</del>				/		
1300.	<del>Z010999MCVT080_IST_FDIR_ASTRUM Perform ACMS Transition from SASM to SAM Click the button Confirm to proceed</del>				//		
1310.	<del>Z010999MCVT080_ACMS_IST_FN Are you executing the test in RF ? Click the button YES to proceed</del>				//		

Pls #1 BM 23/05/08

Test location:	Operator	Product-Assurance:	Date:
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Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
1320	<p><del>Z010999MCVT080_ACMS_IST_FN</del></p> <p>Are you executing the test in RF ?</p> <p>Click the button YES to proceed</p>				N/A		
	<b>C. Verify Recovery Success</b>						
1330	<p><del>Z010999MCVT080_IST_FDIR_ASTRUM</del></p> <p>Status Spacecraft (CDMS -&gt; SAM   ACMS -&gt; SAM) and EGSE</p> <p>Click the button Confirm to proceed</p>				//		
	<b>CDMS level 4 A. Preparatory tasks</b>						
1340	<p><del>Z010999MCVT080_IST_STATUS</del></p> <p>Click the button yes to proceed</p>				//		
1350	<p><del>Z010999MCVT080_IST_STATUS</del></p> <p>Verify the onboard queue and answer to the question</p>				//		
1360	<p><del>Z010999MCVT080_IST_STATUS</del></p> <p>Click the button "End TS!" to proceed</p>				0		

R/S # 1 BDM 23/05/08

Test location:	Operator	Product-Assurance:	Date:
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Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
1370	Switch S/C Control (TC and TM) from RF link to UMB Click the button Confirm				N/A		
1380	RE-Activate MTL Click the button Confirm				//		
1390	COMMAND ACMS FDIR TO AFO Click the button Confirm						
1400	Perform CDMS Transition SUNACQ to Nominal (and ACMS to SCM) Click the button Confirm				N/A		

Post # 1 BH 23/05/10

Test location:	Operator	Product-Assurance:	Date:
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Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
1410	<p><b>A102109SPVT103_ACMS_CONFIG25</b></p> <p>From main menu, select Option 77 'Jump to another entry point' and choose: Menu 4.0 SAM Phase</p> <p>Click the button OK to proceed</p>				N/A		
1420	<p><b>A102109SPVT103_ACMS_CONFIG25</b></p> <p>Select Transition to OCM. Main Menu 4.0 SAM Phase: Option 6</p> <p>Click the button OK to proceed</p>				//		
1430	<p><b>A102109SPVT103_ACMS_CONFIG25</b></p> <p>Click the button Continue to proceed</p>				//		
1440	<p><b>A102109SPVT036_ACMS_STR_ON</b></p> <p>Do you want to change the current STR in use?: Answer no</p> <p>Click the button OK to proceed</p>				//		

PVS # 1 BDI 23/05/08

Test location:	Operator	Product-Assurance:	Date:
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Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
1450	<del>A102109SPVT043_TRANSITION_TO_OCM Verify after ca. 7 min if ACMS mode is = OCM point fine (Earth pointing)</del>				N/A		
1460	<del>A102109SPVT043_TRANSITION_TO_OCM Verify in AND: ZAA00999 if Est Attitude Q1..Q4 is close to Cur Target: Q1/Q3 = 0, Q2=0.6 Q4= 0.79</del>				/		
1470	<del>A102109SPVT043_TRANSITION_TO_OCM Verify AESM3002 = OCM point fine or in synoptic SAT - ACMS - ACC - Mode Nominal</del>				/		
1480	<del>A102109SPVT043_TRANSITION_TO_OCM SUSPEND click on script name  Click the button RESUME to proceed</del>				FCV duty cycle fail  /		

Pvs # 1  
 23/05/08  
 BM

Test location:	Operator	Product-Assurance:	Date:
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Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
1490	<del>A102109SPVT103_ACMS_CONFIG25 Select Transition to SCM (Science mode). Main Menu 7.0: Option 3 Click the button OK to proceed</del>				N/A		
1500	<del>A102109SPVT103_ACMS_CONFIG25 Click the button Continue to proceed</del>				N/A		
1510	<del>A102109SPVT038_RWL_ON Do you want to change actual on-board wheel set selected in the nominal configuration ? RWL 1-2-4 selected, RWL-3 not selected Click the button NO to proceed ?</del>				N/A		
1520	<del>A102109SPVT042_RWL_SPINUP Change actual Angular Momentum (initial values)? Option: no Wait for ca. 10 min</del>				N/A		

PVS #1 BW 23/05/08

Tes: location:	Operator	Product-Assurance:	Date:
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Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
1530	<p><b>OPERATOR INFO</b> Verify RWL speed in plotting window</p> <p>1. Select REALTIME-&gt;DESKTOP-&gt;MONITORING-&gt;TM Plotting Tool</p> <p>2. Select Directory: Home/heracms/plotting 3. Select FILE -&gt; LOAD -&gt; 15 (RWLs_REAL(cal)&amp;Simul_SPEED.txt)</p>				N/A		
1540	<p><b>OPERATOR INFO</b> Verify 4x RWL momentum parameters</p> <p>AEWMA002 = 11.0 +/- 25% (RWL1 momentum) AEWMB002 = - 9.4 +/- 25% (RWL2 momentum) AEWMC002 = 0.0 +/- 25% (RWL3 momentum) AEWMD002 = -8.5 +/- 25% (RWL4 momentum)</p>				//		
1550	<p><b>A102109SPVT042_RWL_SPINUP</b></p> <p>Target wheel speed not reached after 600 sec SUSPEND click on script name</p> <p>Click the button RESUME to proceed</p>				//		

23/05/08  
 PVS #1  
 BM

Test location:	Operator	Product-Assurance:	Date:
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Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
1560.	<del>A102109SPVT042_RWL_SPINUP Click the button "End TS!" to proceed</del>				N/A		
1570.	<del>OPERATOR INFO Verify in SAT synoptic SAT – ACMS – ACC – Mode Nominal = SCM Point Fine Verify in Telemetry window ZAAF0999 (diagnostic TM) As long as the ACMS is switched On the Menu Box has to be present !!!</del>				//		
1580.	Z010999MCVT080_IST_FDIR_ASTRIMUM Command Rx1 to 125 bps and Rx2 to 4 Kbps, and switch OFF XPND 2 and TWTA 2 Click the button Confirm					✓	
1590.	Z010999MCVT080_IST_FDIR_ASTRIMUM Commandf PACS to safe mode and SCBP to 2 Click the button Confirm					✓	

P/S #1 BJA  
23/05/08

PP

PP

Test location: <i>Estec</i>	Operator: <i>Kodato</i>	Product-Assurance: <i>BJA</i>	Date: <i>23/05/08 12:22</i>
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Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
1600.	<b>P102999SCVT904_ASDGENPACS_nomSpect</b> FM PACS simulate spectroscopy for test in any condition. Abort TS if not correct  Click the button YES to proceed					V	
1610.	<b>Z010999MCVT080_IST_FDIR_ASTRUM</b> Get RM Status and Dump the Event Buffers  Click the button Confirm					V	
1620.	<b>Z010999MCVT080_IST_FDIR_ASTRUM</b> Status Spacecraft (CDMS -> NOM ! ACMS -> SCM) and EGSE  Click the button Confirm					V	
1630.	<b>Z010999MCVT080_IST_STATUS</b>  Click the button "YES"to proceed					V	
1640.	<b>Z010999MCVT080_IST_STATUS</b>  Click the button "End TS!" to proceed					V	

Handwritten initials: TP, TP, TP, TP, TP

Test location: <i>ESTEC</i>	Operator <i>[Signature]</i>	Product-Assurance: <i>[Signature]</i>	Date: <i>23/05/08</i>	<i>12:29</i>
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Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
1650	<b>Z010999MCVT080_IST_FDIR_ASTRUM</b> Set the Transition from SAS 1474W to SAS less Power and BS 200 W Click the button Confirm					✓	PP
1660	<b>Z010999MCVT080_IST_FDIR_ASTRUM</b> TRIGGER WITH DOD (DEPTH OF DISCHARGE) ALARM THE CDMS TRANSITION NOMINAL TO SURVIVAL (ALARM 4) Click the button Confirm					✓	PP
1670	<b>D102159SCVT160_FDIR_NOM_SURV_DOD</b> Click the button "End TS!" to proceed					✓	PP
1680	<b>Z010999MCVT080_IST_FDIR_ASTRUM</b> CHANGE THE TT&C SCOE SETTINGS TO WORK AT 125 BPS Click the button Confirm				PVS#5	✓	PP

PVS#4  
→  
PVS#5  
→

PVS#4 ADDITIONAL STEP TO DISCONNECT HIFI EGSE & TURN OFF COOLING  
PVS#5 TMTC SCOE FILE APPEARS TO BE NOT LOADED

Test location: <i>Estec</i>	Operator: <i>[Signature]</i>	Product-Assurance: <i>[Signature]</i>	Date: <i>23/05/08</i>	<i>B05</i>
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PVS#6 DURING TRANS FROM 500bps to 5K, Error on script occurred - TLM LOST. Recovery Required



Herschel Integrated Satellite Test Procedure

Herschel

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
1690	SWITCH TM-TC RATE FROM 500BPS/125BPS TO 5KBPS/4KBPS Click the button Confirm				PVS#6 SPR		V
1700	Status Spacecraft (CDMS -> SM ! ACMS -> SAM) and EGSE IST_STATUS "5.8.6.7.2 Click the button Confirm					V	
1710	Click the button "End TS!" to proceed					V	
1720	DISABLE THERMAL CONTROL Click the button Confirm					V	
1730	Click the button "End TS!" to proceed					V	

Test location: ES/EC	Operator: <i>[Signature]</i>	Product Assurance: <i>[Signature]</i>	Date: 28/03/08 15:07
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Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
1740	<b>Z010999MCVT080_IST_FDIR_ASTRUM</b> Set back to umbilical Click the button Confirm					✓	
1750	<b>D102159SCVT216_ASED_TM_150_KBPS_IST</b> Click the button "End TS!" to proceed					✓	
1760	<b>Test End Switch off using IST END</b>					✓	


Handwritten initials and marks in the right margin of the test table.

Test location: ESTEC	Operator: <i>[Signature]</i>	Product-Assurance: <i>[Signature]</i>	Date: 23/05/08	18 00
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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	

	TRR Minutes Applicable H-P-TASF-MN- 10498 .....	REF.: H-P-TASF-AS-RUN-LOG	
		HERSCHEL	
		DATE: 23-5-08	PAGE: 1 of
AS-RUN DOCUMENTS RAISED		PLACE: ESTEC	

TEST NAME: SC RECONFIGURATION	TEST CONDUCTOR: P. MODESTO	
ACTIVITY CONTROL SHEET No's:		
Herschel Instrument Power ON-OFF	HP-2-ASED-TP-0206 155 1.2	
<del>Herschel 1ST Leading Procedure</del>	<del>HP-2-ASED-TP-0134 155 3.0</del>	
LEADING PROCEDURE (Title)	Doc No	Issue
Herschel 1ST Leading Procedure	HP-2-ASED-TP-0134	4.0
FUNCTIONAL PROCEDURE (Title)	Doc No	Issue
Herschel 1ST Test case SC Reconfiguration	HP-2-ASED-TP-0190	1.1
Session ID/s 2008_05_23_04_37_herschel_mv_hpws22-REALTIME_SC_RECONF		

PVS #	Raised against	Description (brief summary of reason document is raised)
PVS#1	TP-0190	TO CONTINUE WITH PREVIOUS FORMAL RUN (MANY TEST STEPS) TO REF TO SWITCH ON 1ST PROCEDURE TP 206 (STEPS 370, 420 & 500) ADDITIONAL STEP (STEP 630 CHANGED) ADDITIONAL STEP (STEP 1680 CHANGED) TATC SCOE FILE NOT LOADED (STEP 1680) RECOVERY REQUIRED (STEP 1690)
PVS#2	TP-0190	
PVS#3	TP-0190	
PVS#4	TP-0190	
PVS#5	TP-0190	
PVS#6	TP-0190	
SPR #	Raised against	Description (same as SPR title)
NCR #	Raised against	Description (same as NCR title)

Test Change		Curr. No.: # 1
		Date 23/05/08
		Page 1 of 1

Test designation S/C Reconf	Test Procedure TP-0190	Issue 1	Rev. 1
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Test step changed MANY	Reason for Change TO CONTINUE WITH PREVIOUS FORMAL RUN
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AS A PARTIAL FORMAL RUN HAS BEEN PERFORMED THE FOLLOWING STEPS ARE TO BE PERFORMED TO SWEEP TO THE POINT WHERE THE LAST FORMAL RUN STOPPED.

IST\_START 7.2.4. THE CDMU MUST BE

PM = BI PAP CCS : PMB NOMINAL  
(HP-2-ASE1) - TP-0134)


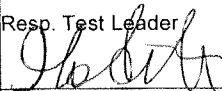

ACMS TO BE SWITCHED ON WITH PMB user config file for SCOE FD-B-PMB (ENSURE LATEST GYRO CALS UPDATED)

IN HP-2-ASE1) - TP-0190 S/C RECONFIG PROCEDURE SKIP STEPS 360, 580, 590, 600, 680, 690 to 970, PERFORM OP STEP 970

SKIP STEPS 980 to 1570

CONTINUE WITH THE REMAINDER OF THE PROCEDURE FROM OP STEP 1580. THE ABOVE <sup>SKIPPED</sup> STEPS HAVE BEEN PERFORMED IN THE PREVIOUS FORMAL RUN WHICH WAS SUSPENDED DUE TO TIME.

Prepared by: S. HOGG	Resp. Test Leader 	Project Engineer 
PA/QA 	Prime	Customer

	Test Change	Curr. No.: #2
		Date 23/05/08
		Page 1 of
Test designation S/C RECONFIG.	Test Procedure HP-2-ASED-TP-0190	Issue 1 Rev. 1
Test step changed 370 / 420 / 500	Reason for Change TO REF TO SWITCH ON 1ST PROCEDURE TP 206	
<p>FOR SWITCHING ON INSTRUMENTS THE FOLLOWING STEPS OF TP0190 NEED TO REFER TO TP0206 INSTRUMENT POWER ON-OFF AND MODE SWITCHING PROCEDURE</p> <p>STEP 370 of TP-0190 REF TO HP-2-ASED-TP0206 SECTION 7.3 FOR SWITCHING ON HIFI TO SBY (NOM CONFIG)</p> <p>STEP 420 of TP-0190 REF TO HP-2-ASED TP0206 SECTION 7.1 FOR SWITCHING ON PACS TO SBY (NOM CONFIG)</p> <p>STEP 500 of TP-0190 REF TO HP-2-ASED TP0206 SECTION 7.2 FOR SWITCHING ON SPIRE TO SBY (NOM CONFIG)</p> <p>REMOVE THE FOLLOWING STEPS FROM TP0190 AS THESE ARE COVERED WITHIN TP0206.</p> <p>STEPS 380/390/410. FOR HIFI</p>		
Prepared by: 	Resp. Test Leader 	Project Engineer
PA/QA 	Prime	Customer

	Test Change	Curr. No.: #3	
		Date 23/05/08	
		Page 1	of
Test designation S/C RECONFIG.	Test Procedure HP-2-ASED-TP-0190	Issue 1	Rev. 1
Test step changed 630	Reason for Change ADDITIONAL STEP		
<p>TO ARRIVE @ the SAME CONFIGURATION THE LAST TIME THE TEST WAS PREVIOUSLY RUN NEED TO PERFORM STEP 840 PRIOR TO CONTINUE FROM STEP 630.</p>			
Prepared by: B. HOGG	Resp. Test Leader <i>[Signature]</i>	Project Engineer	
PA/QA B. HOGG	Prime	Customer	



		Test Change		Curr. No.: # 4	
				Date 23/05/08	
				Page 1 of	
Test designation S/C RECONFIG.		Test Procedure HP-2-ASED-TP-0190		Issue 1	Rev. 1
Test step changed 1680		Reason for Change ADDITIONAL STEP			
<p>NEED TO DISCONNECT HIFI EGSE</p> <p>HIFI EGSE DISCONNECT</p> <p>AND TURN OFF COOLING</p>					
Prepared by: BIM		Resp. Test Leader [Signature]		Project Engineer	
PA/QA BIM		Prime		Customer	

		Test Change		Curr. No.: #5	
				Date 23/05/08	
				Page 1 of	
Test designation		Test Procedure		Issue	Rev.
S/C RECONFIG.		HP-2-ASED-TP-0190		1	1
Test step changed		Reason for Change			
1680		<del>TWTC</del> SCOE FILE NOT LOADED ↳ APPEARS TO BE			
<p>IT APPEARS THAT THE SCOE CONFIG FILE FOR THE <del>TWTC</del> SCOE WAS NOT LOADED DURING 1ST START. THIS CAUSE TLM ERRORS AND FAILED TO LOCK.</p> <p>UPLOAD <del>TWTC</del> CONFIG FILE AND RE RUN SCRIPT</p> <p>Y102989ECUT006-TTC-DL-PORT-SET</p>					
Prepared by:		Resp. Test Leader		Project Engineer	
B. HOGG					
PA/QA		Prime		Customer	

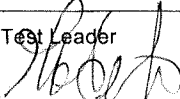
	Test Change	Curr. No.: 6	
		Date 23/05/08	
		Page 1	of
Test designation S/C RECONFIG.	Test Procedure HP-2-ASED-TP-0190	Issue 1	Rev. 1
Test step changed 1690	Reason for Change RECOVERY REQUIRED.		
<p>DURING TRANS FROM SC06PS to SK FLOOR ON THE SCRIPT OCCURRED. LOST TLM. CHANGED) BACK TO UNBILICAL TO OBTAIN STATUS OF SC AND TO CONTINUE TEST. SPR RAISED.</p> <p>PERFORM</p> <p><del>Y102989</del> ECV T001_TMTC_LINK.</p>			
Prepared by: BIM	Resp. Test Leader 	Project Engineer	
PA/QA BIM.	Prime	Customer	

Table 8.1-1: Procedure Variation Sheet

**8.2 Non Conformance Report (NCR) Summary**

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

Table 8.2-1: Non-Conformance Record Sheet

**8.3 Sign-off Sheet**

	Date	Signature
Test Manager	23/05/08	<i>[Signature]</i>
Operator	23/05/08	<i>[Signature]</i>
PA Responsible	23/05/08	<i>[Signature]</i>
ESA Representative		

9

Script Hierarchy

Argument for unit:

User choice: /home/hercdmu/LogHistory/callProc.txt

```
=====
PROCEDURE getLogHistory STEP 1
```

```
Setup system
=====
```

```
logm
```

```
logm The file "/home/hercdmu/LogHistory/callProc.txt" is expected to be
generated by the following linux command:
```

```
logm grep -iw -e call -e callasync *.tcl | grep -v "#" | grep -v "' ' ' >
callProc.txt
```

```
logm
```

```
logm File /home/hercdmu/LogHistory/callProc.txt status: OPEN/READ
```

```
logm
```

```
logm ===== 5.8.6 S/C RECONFIGURATION =====
```

```
logm
```

```
logm |-----> Y102989ETVT021_TTC_SCOE_ON
```

```
logm |-----> async A102109SPVT202_ACMS_STATUS_H
```

```
logm |-----> D102159SCVT138_IST_LAUNCH_SUNACQ
```

```
logm |-----|-----> Z010999MMXX002UNITS_CHECK
```

```
logm |-----> D102159SCVT137_IST_SUNACQ_NOM
```

```
logm |-----|-----> Z010999MMXX002UNITS_CHECK
```

```
logm |-----> W102584SPVT101_PCDU_TRANSITION_FDIR 1
```

```
logm |-----> Z102999SCVT001_SREM_ON 60
```

```
logm |-----|-----> Z102999SCVT003_SREM_ACQ_START $argv
```

```
logm |-----> Z102999SCVT010_ASDGEN_PACSPWRON_P
```

```
logm |-----|-----> P102999SCVT905_ASDISTPACS_PWR_ON_N
```

```
logm |-----|-----|-----> Z010999MMXX002UNITS_CHECK
```

```
logm |-----> Z102999SCVT004_ASDGEN_SPIREPWRON_P
```

```
logm |-----|-----> S102999SCVT017_ASDGENSPIR_PWR_ON_P
```

```
logm |-----|-----|-----> SPIRE-IST-DBG-OFF2DPUON-SP
```

```
logm |-----|-----|-----> SPIRE-IST-DBG-DPUON2STBY
```

```
logm |-----|-----|-----> SPIRE-IST-DBG-LOAD-VM-TABLES
```

```
logm |-----|-----|-----> Z010999MMXX002UNITS_CHECK
```

```
logm |-----> D102159SCVT080_CEL_DOWNLINK
```

```
logm |-----> A102109SPVT087_ACMS_IST_FN 1
```

```
logm |-----|-----> ACMS_get_RM_status RMA
```

```
logm |-----|-----> ACMS_get_RM_status RMB
```

```
logm |-----|-----> ACMS_event_buffer_dump sgma
```

```
logm |-----|-----> ACMS_event_buffer_dump sgmb
```

```
logm |-----> A102109SPVT087_ACMS_IST_FN 2
```

```
logm |-----|-----> ACMS_get_RM_status RMA
```

```
logm |-----|-----> ACMS_get_RM_status RMB
```

```
logm |-----|-----> ACMS_event_buffer_dump sgma
```

```
logm |-----|-----> ACMS_event_buffer_dump sgmb
```

```
logm |-----> Z010999MCVT153_IST_STATUS 5.8.6.2
```

```
logm |-----|-----> ACMS_get_RM_status RMA
```

```
logm |-----|-----> ACMS_get_RM_status RMB
```

```
logm |-----> D102159SCVT153_MTL_FDIR
```

```
logm |-----> async A102109SPVT087_ACMS_IST_FN cir
```

```
logm |-----|-----> ACMS_get_RM_status RMA
```

```

logm |-----|-----> ACMS_get_RM_status RMB
logm |-----|-----> ACMS_event_buffer_dump sgma
logm |-----|-----> ACMS_event_buffer_dump sgmb
logm |-----> D102159SCVT154_FDIR_NOM_EARTH_3a
logm |-----|-----> D102159SCVT156_CDMS_ANALYSIS_FDIR_IST
logm |-----|-----> D102159SCVT080_CEL_DOWNLINK
logm |-----> Y102989ECVT006_TTC_DL_PORT_SET MGA
logm |-----|-----> Y102989ETVT019_TTC_SCOE_ACTIVITY
logm |-----> Y102989ECVT007_TTC_UL_PARAM_SET MGA -67.4 OFF T 1 0.5 0.13 A
logm |-----|-----> Y102989ETVT019_TTC_SCOE_ACTIVITY
logm |-----> Y102989ECVT008_TCRG_MI_SET_TTC 1.0 0.7 4000
logm |-----|-----> Y102989ETVT019_TTC_SCOE_ACTIVITY
logm |-----> Y102989ECVT018_TTC_TC_OP_METHOD ONLINE
logm |-----|-----> Y102989ETVT017_TTC_CHECK_ROUTINE
logm |-----|-----> Y102989ETVT019_TTC_SCOE_ACTIVITY
logm |-----> Y102989ECVT003_TC_DFE_OUT_2_TTC 4000
logm |-----> Y102989ECVT005_TM_DFE_IN_FROM_TTC MGA MBR
logm |-----|-----> Y102989ETVT019_TTC_SCOE_ACTIVITY
logm |-----|-----> Y102989ECVT001_TMTC_LINK TM TTC
logm |-----> A102109SPVT087_ACMS_IST_FN 1
logm |-----|-----> ACMS_get_RM_status RMA
logm |-----|-----> ACMS_get_RM_status RMB
logm |-----|-----> ACMS_event_buffer_dump sgma
logm |-----|-----> ACMS_event_buffer_dump sgmb
logm |-----> A102109SPVT087_ACMS_IST_FN 2
logm |-----|-----> ACMS_get_RM_status RMA
logm |-----|-----> ACMS_get_RM_status RMB
logm |-----|-----> ACMS_event_buffer_dump sgma
logm |-----|-----> ACMS_event_buffer_dump sgmb
logm |-----> Z010999MCVT153_IST_STATUS 5.8.6.3
logm |-----|-----> ACMS_get_RM_status RMA
logm |-----|-----> ACMS_get_RM_status RMB
logm |-----> Y102989ECVT001_TMTC_LINK BOTH SCPRI
logm |-----> R102479ECVT006_XPND2_TC_1553 0 0 1 0 0 0 0.6 1.2 0 -4
logm |-----> Z102999SCVT003_SREM_ACQ_START 60
logm |-----> D102159SCVT157_FDIR_EARTH_EARTH_3b before_first_3a_alarm
logm |-----|-----> D102159SCVT156_CDMS_ANALYSIS_FDIR_IST
logm |-----|-----> D102159SCVT080_CEL_DOWNLINK
logm |-----|-----> D102159SCVT156_CDMS_ANALYSIS_FDIR_IST
logm |-----|-----> D102159SCVT080_CEL_DOWNLINK
logm |-----> D102159SCVT157_FDIR_EARTH_EARTH_3b first_3a_alarm
logm |-----|-----> D102159SCVT156_CDMS_ANALYSIS_FDIR_IST
logm |-----|-----> D102159SCVT080_CEL_DOWNLINK
logm |-----|-----> D102159SCVT156_CDMS_ANALYSIS_FDIR_IST
logm |-----|-----> D102159SCVT080_CEL_DOWNLINK
logm |-----> Z010999MCVT153_IST_STATUS 5.8.6.4.2
logm |-----|-----> ACMS_get_RM_status RMA
logm |-----|-----> ACMS_get_RM_status RMB
logm |-----> D102159SCVT157_FDIR_EARTH_EARTH_3b before_second_3a_alarm
logm |-----|-----> D102159SCVT156_CDMS_ANALYSIS_FDIR_IST
logm |-----|-----> D102159SCVT080_CEL_DOWNLINK
logm |-----|-----> D102159SCVT156_CDMS_ANALYSIS_FDIR_IST
logm |-----|-----> D102159SCVT080_CEL_DOWNLINK
logm |-----> R102479ECVT006_XPND2_TC_1553 0 0 1 0 0 0 0.6 1.2 0 -4
logm |-----> D102159SCVT157_FDIR_EARTH_EARTH_3b second_3a_alarm
logm |-----|-----> D102159SCVT156_CDMS_ANALYSIS_FDIR_IST

```

```

logm |-----|-----> D102159SCVT080_CEL_DOWNLINK
logm |-----|-----> D102159SCVT156_CDMS_ANALYSIS_FDIR_IST
logm |-----|-----> D102159SCVT080_CEL_DOWNLINK
logm |-----> Y102989ECVT006_TTC_DL_PORT_SET MGA
logm |-----|-----> Y102989ETVT019_TTC_SCOE_ACTIVITY
logm |-----> Y102989ECVT007_TTC_UL_PARAM_SET MGA -67.4 OFF T 1 0.5 0.13 A
logm |-----|-----> Y102989ETVT019_TTC_SCOE_ACTIVITY
logm |-----> Y102989ECVT008_TCRG_MI_SET TTC 1.0 0.7 4000
logm |-----|-----> Y102989ETVT019_TTC_SCOE_ACTIVITY
logm |-----> Y102989ECVT018_TTC_TC_OP_METHOD ONLINE
logm |-----|-----> Y102989ETVT017_TTC_CHECK_ROUTINE
logm |-----|-----> Y102989ETVT019_TTC_SCOE_ACTIVITY
logm |-----> Y102989ECVT003_TC_DFE_OUT_2 TTC 4000
logm |-----> Y102989ECVT005_TM_DFE_IN_FROM TTC MGA MBR
logm |-----|-----> Y102989ETVT019_TTC_SCOE_ACTIVITY
logm |-----|-----> Y102989ECVT001_TMTC_LINK TM TTC
logm |-----> D102159SCVT157_FDIR_EARTH_EARTH_3b after_second_3a_alarm
logm |-----|-----> D102159SCVT156_CDMS_ANALYSIS_FDIR_IST
logm |-----|-----> D102159SCVT080_CEL_DOWNLINK
logm |-----|-----> D102159SCVT156_CDMS_ANALYSIS_FDIR_IST
logm |-----|-----> D102159SCVT080_CEL_DOWNLINK
logm |-----> A102109SPVT087_ACMS_IST_FN 1
logm |-----|-----> ACMS_get_RM_status RMA
logm |-----|-----> ACMS_get_RM_status RMB
logm |-----|-----> ACMS_event_buffer_dump sgma
logm |-----|-----> ACMS_event_buffer_dump sgmb
logm |-----> A102109SPVT087_ACMS_IST_FN 2
logm |-----|-----> ACMS_get_RM_status RMA
logm |-----|-----> ACMS_get_RM_status RMB
logm |-----|-----> ACMS_event_buffer_dump sgma
logm |-----|-----> ACMS_event_buffer_dump sgmb
logm |-----> Z010999MCVT153_IST_STATUS 5.8.6.4.4
logm |-----|-----> ACMS_get_RM_status RMA
logm |-----|-----> ACMS_get_RM_status RMB
logm |-----> D102159SCVT158_FDIR_NOMINAL_SUNACQ
logm |-----|-----> D102159SCVT175_SET_SURV_REG A A BBBA A B Separated
logm |-----|-----> D102159SCVT176_WRITE_CROME BA 1
logm |-----|-----> Z010999MMXX002UNITS_CHECK
logm |-----|-----> Z010999MMXX002UNITS_CHECK
logm |-----> Z010999MCVT153_IST_STATUS 5.8.6.5.1
logm |-----|-----> ACMS_get_RM_status RMA
logm |-----|-----> ACMS_get_RM_status RMB
logm |-----> A102109SPVT087_ACMS_IST_FN out_of_operational_domain_part1
logm |-----|-----> ACMS_get_RM_status RMA
logm |-----|-----> ACMS_get_RM_status RMB
logm |-----|-----> ACMS_event_buffer_dump sgma
logm |-----|-----> ACMS_event_buffer_dump sgmb
logm |-----> Y102989ECVT006_TTC_DL_PORT_SET LGA1
logm |-----|-----> Y102989ETVT019_TTC_SCOE_ACTIVITY
logm |-----> Y102989ECVT007_TTC_UL_PARAM_SET LGA1 -82.0 OFF T 1 0.5 0.13 A
logm |-----|-----> Y102989ETVT019_TTC_SCOE_ACTIVITY
logm |-----> Y102989ECVT008_TCRG_MI_SET TTC 1.0 0.7 125
logm |-----|-----> Y102989ETVT019_TTC_SCOE_ACTIVITY
logm |-----> Y102989ECVT018_TTC_TC_OP_METHOD ONLINE
logm |-----|-----> Y102989ETVT017_TTC_CHECK_ROUTINE
logm |-----|-----> Y102989ETVT019_TTC_SCOE_ACTIVITY

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logm |-----> Y102989ECVT003_TC_DFE_OUT_2_TTC 125
logm |-----> Y102989ECVT005_TM_DFE_IN_FROM_TTC LGA1 LBR1
logm |-----|-----> Y102989ETVT019_TTC_SCOE_ACTIVITY
logm |-----|-----> Y102989ECVT001_TMTC_LINK TM TTC
logm |-----> A102109SPVT087_ACMS_IST_FN out_of_operational_domain_part2
logm |-----|-----> ACMS_get_RM_status RMA
logm |-----|-----> ACMS_get_RM_status RMB
logm |-----|-----> ACMS_event_buffer_dump sgma
logm |-----|-----> ACMS_event_buffer_dump sgmb
logm |-----> D102159SCVT159_FDIR_CHECK_SUNACQMODE
logm |-----> Z010999MCVT153_IST_STATUS 5.8.6.5.2
logm |-----|-----> ACMS_get_RM_status RMA
logm |-----|-----> ACMS_get_RM_status RMB
logm |-----> Y102989ECVT006_TTC_DL_PORT_SET LGA1
logm |-----|-----> Y102989ETVT019_TTC_SCOE_ACTIVITY
logm |-----> Y102989ECVT008_TCRG_MI_SET_TTC 1.0 0.7 4000
logm |-----|-----> Y102989ETVT019_TTC_SCOE_ACTIVITY
logm |-----> Y102989ECVT003_TC_DFE_OUT_2_TTC 4000
logm |-----> Y102989ECVT005_TM_DFE_IN_FROM_TTC LGA1 LBR2
logm |-----|-----> Y102989ETVT019_TTC_SCOE_ACTIVITY
logm |-----|-----> Y102989ECVT001_TMTC_LINK TM TTC
logm |-----> A102109SPVT087_ACMS_IST_FN sasm_to_sam_on_pmb
logm |-----|-----> ACMS_get_RM_status RMA
logm |-----|-----> ACMS_get_RM_status RMB
logm |-----|-----> ACMS_event_buffer_dump sgma
logm |-----|-----> ACMS_event_buffer_dump sgmb
logm |-----> A102109SPVT087_ACMS_IST_FN verify_sasm_sam_on_pmb_unit_B
logm |-----|-----> ACMS_get_RM_status RMA
logm |-----|-----> ACMS_get_RM_status RMB
logm |-----|-----> ACMS_event_buffer_dump sgma
logm |-----|-----> ACMS_event_buffer_dump sgmb
logm |-----> Z010999MCVT153_IST_STATUS 5.8.6.6
logm |-----|-----> ACMS_get_RM_status RMA
logm |-----|-----> ACMS_get_RM_status RMB
logm |-----> Y102989ECVT001_TMTC_LINK BOTH SCPRI
logm |-----> D102159SCVT123_TM_LINK_150_KBPS
logm |-----> D102159SCVT158_FDIR_NOMINAL_SUNACQ
logm |-----|-----> D102159SCVT175_SET_SURV_REG A A BBBA A B Separated
logm |-----|-----> D102159SCVT176_WRITE_CROME BA 1
logm |-----|-----> Z010999MMXX002UNITS_CHECK
logm |-----|-----> Z010999MMXX002UNITS_CHECK
logm |-----> A102109SPVT087_ACMS_IST_FN 1
logm |-----|-----> ACMS_get_RM_status RMA
logm |-----|-----> ACMS_get_RM_status RMB
logm |-----|-----> ACMS_event_buffer_dump sgma
logm |-----|-----> ACMS_event_buffer_dump sgmb
logm |-----> A102109SPVT087_ACMS_IST_FN 2
logm |-----|-----> ACMS_get_RM_status RMA
logm |-----|-----> ACMS_get_RM_status RMB
logm |-----|-----> ACMS_event_buffer_dump sgma
logm |-----|-----> ACMS_event_buffer_dump sgmb
logm |-----> Z010999MCVT153_IST_STATUS 5.8.6.7.1
logm |-----|-----> ACMS_get_RM_status RMA
logm |-----|-----> ACMS_get_RM_status RMB
logm |-----> W102584SPVT101_PCDU_TRANSITION_FDIR 2
logm |-----> async W102584SPVT101_PCDU_TRANSITION_FDIR 3

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logm |-----> D102159SCVT160_FDIR_NOM_SURV_DOD perform_DoD
logm |-----> Y102989ECVT006_TTC_DL_PORT_SET LGA1
logm |-----|-----> Y102989ETVT019_TTC_SCOE_ACTIVITY
logm |-----> Y102989ECVT007_TTC_UL_PARAM_SET LGA1 -82.0 OFF T 1 0.5 0.06 A
logm |-----|-----> Y102989ETVT019_TTC_SCOE_ACTIVITY
logm |-----> Y102989ECVT008_TCRG_MI_SET_TTC 1.0 0.7 125
logm |-----|-----> Y102989ETVT019_TTC_SCOE_ACTIVITY
logm |-----> Y102989ECVT018_TTC_TC_OP_METHOD ONLINE
logm |-----|-----> Y102989ETVT017_TTC_CHECK_ROUTINE
logm |-----|-----> Y102989ETVT019_TTC_SCOE_ACTIVITY
logm |-----> Y102989ECVT003_TC_DFE_OUT_2_TTC 125
logm |-----> Y102989ECVT005_TM_DFE_IN_FROM_TTC LGA1 LBR1
logm |-----|-----> Y102989ETVT019_TTC_SCOE_ACTIVITY
logm |-----|-----> Y102989ECVT001_TMTC_LINK TM TTC
logm |-----> Y102989ECVT006_TTC_DL_PORT_SET LGA1
logm |-----|-----> Y102989ETVT019_TTC_SCOE_ACTIVITY
logm |-----> Y102989ECVT008_TCRG_MI_SET_TTC 1.0 0.7 4000
logm |-----|-----> Y102989ETVT019_TTC_SCOE_ACTIVITY
logm |-----> Y102989ECVT003_TC_DFE_OUT_2_TTC 4000
logm |-----> Y102989ECVT005_TM_DFE_IN_FROM_TTC LGA1 LBR2
logm |-----|-----> Y102989ETVT019_TTC_SCOE_ACTIVITY
logm |-----|-----> Y102989ECVT001_TMTC_LINK TM TTC
logm |-----> D102159SCVT160_FDIR_NOM_SURV_DOD checks_after_DoD
logm |-----> Z010999MCVT153_IST_STATUS 5.8.6.7.2
logm |-----|-----> ACMS_get_RM_status RMA
logm |-----|-----> ACMS_get_RM_status RMB
logm |-----> D102159SCVT003DISTHERMALCONTROL
logm |-----> Y102989ECVT001_TMTC_LINK BOTH SCPRI
logm |-----> D102159SCVT123_TM_LINK_150_KBPS
logm |-----> D102159SCVT188_IST_DUMP_PKT_STORE 82 2 81 1 80 0 83 3 FF
logm |-----> D102159SCVT128_RESTORE_FROM_SURV Restore the S/C configuration
logm |-----|-----> D102159SCVT104_ENCODER_SELECT A $set_tm_rate
logm |-----> D102159SCVT126_LCL_OFF_BEF_SC_OFF
logm |-----> Z010999MCVT004_IST_END
logm |-----|-----> $swOFFsequence
logm |-----> D102159SCVT188_IST_DUMP_PKT_STORE 0 80 1 81 2 82 3 83
CEL_A CEL_B
logm |-----|-----> A102109SPVT061_RWL_SPINDOWN
logm |-----|-----> async referby acmsOff A102109SPVT012_ACMS_OFF
logm |-----|-----> Z102999SCVT002_SREM_OFF
logm |-----|-----> D102159SCVT174_IST_REDUNDANT_CONF A A 0 0 0 0 0
logm |-----|-----|-----> D102159SCVT104_ENCODER_SELECT $tmObt
$tm_Enc_Config
logm |-----|-----> D102159SCVT175_SET_SURV_REG B B ABBB B B not
logm |-----|-----> D102159SCVT176_WRITE_CRÖME AB 1
logm |-----|-----> D102159SCVT188_IST_DUMP_PKT_STORE 0 80 1 81 2 82 3 83
CEL_A CEL_B
logm |-----|-----> D102159SCVT181_DISABLE_PKT_STORE
logm |-----|-----> D102159SCVT187_IST_SSMM_OFF
logm |-----|-----> Y102989ETVT020_TTC_SCOE_OFF
logm |-----|-----|-----> Y102989ECVT018_TTC_TC_OP_METHOD OFFLINE
logm |-----|-----|-----|-----> Y102989ETVT017_TTC_CHECK_ROUTINE
logm |-----|-----|-----|-----> Y102989ETVT019_TTC_SCOE_ACTIVITY
logm |-----|-----> Z010999MCVT002_POWER_OFF_HER_IST
logm |-----|-----|-----> W102584SPVT101_PCDÜ_TRANSITION_FDIR 5
logm |-----|-----|-----> D102159SCVT187_IST_SSMM_OFF

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logm |-----|-----|-----> D102159SCVT001PM_SELECT B
logm |-----|-----|-----|-----> D102159SCVT003DISTHERMALCONTROL
logm |-----|-----|-----|-----> Z010999MMXX002UNITS_CHECK
logm |-----|-----|-----> D102159SCVT001PM_SELECT A
logm |-----|-----|-----|-----> D102159SCVT003DISTHERMALCONTROL
logm |-----|-----|-----|-----> Z010999MMXX002UNITS_CHECK
logm |-----|-----|-----> R102479SMXX001_XPND_HUM_TXT
logm |-----|-----|-----> Y102989EPVT002_PWR_SCOE_OFF_CLN_LNCH
logm |-----|-----|-----|-----> Z010999MMXX003UNITS_CHECK_PWR_OFF
logm |-----|-----|-----|-----> Z010999MMXX003UNITS_CHECK_PWR_OFF
logm |-----|-----|-----> Y102989EPVT002_PWR_SCOE_OFF
logm |-----|-----|-----|-----> Z010999MMXX003UNITS_CHECK_PWR_OFF
logm |-----|-----|-----|-----> Z010999MMXX003UNITS_CHECK_PWR_OFF
logm |-----|-----|-----> Z010999MMXX003UNITS_CHECK_PWR_OFF
logm |-----|-----|-----> Z010999MMXX003UNITS_CHECK_PWR_OFF

```

**10 Session Record**

Test Description	COMS level 4 ONLY
Session ID	2008 05 23 04 37. herchel_m_hps22 - REALTIME - SC - Record
Start Time:	04:37
End Time	19:00
CVS Tag for Test	STSS 2008 05 24 30. herchel_m_hps22 - REALTIME - SC - Record
Applicable IST Specification	HP-2-ASED-SP-0939 HERSCHEL - IST - ISS 6.0
Test conductor	P. Modesto <i>[Signature]</i>
QA Approval	B. Horta <i>[Signature]</i>

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





## Attachment 5 to Section 6.7:

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

AS RUN FOR FORMAL  
S/C RECONFIGURATION  
2008-05-23-04-37-herschelmu-hpws22-~~REALTIME~~  
SC-leaf

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 Hamer 30/4/2008

Configuration Control: W. Wietbrock

Project Management: Dr. Fricke 14.05.08

Project Management: D. Montet 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 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

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### **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/Hel)	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

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**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.

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**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  <b>connect HPACSEGSE</b>	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>					

N/A

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:  <b>ALL_SubscribeParams</b>					
4.	Verify HPCCS-IEGSE connection by sending the following test command from manual command stack (repeater value 0) and verify received OK on IEGSE:  <b>YC00X964</b>	OK				
5.	<b>Return to calling Procedure</b>					

N/A

<b>Enter Date   Time:</b>		<b>Sign Off TD:</b>		<b>PA:</b>		<b>Test Location:</b>	
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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: <b>Z102999SCVT010_ASDGEN_PACSPWRON_P</b>				✓	
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:	23/09/08	10.50	Sign Off TD:	[Signature]	PA:	[Signature]	Test Location:	[Signature]
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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 <b>NO</b> 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.			YES selected	✓	N/A
	If <b>YES</b> 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 <b>P102999SCVT905_ASDISTPACS_PWR_ON_N</b> will prompt that AFO will be commanded next.  Click <b>OK</b> to continue the script if the prompt appears.	OK			✓	N/A

Enter Date   Time:	29/08/08	Sign Off	TD:	PA:	Test Location:	en0c
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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 <b>P102999SCVT905_ASDISTPACS_PWR_ON_N</b> it will prompt:</p> <p><i>"Set Bus Profile Back to Original Setting?"</i></p> <p>Select <b>YES</b> if it is likely that other non-PACS instrument related activities are to be performed, otherwise select <b>NO</b>.</p>	NO	YES		✓	
7.	<p>If <b>YES</b> 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 <b>OK</b> to continue</p>	OK			✓	

Enter Date   Time:	23/07/08	Sign Off TD:	[Signature]	PA:	[Signature]	Test Location:	0700
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Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
8.	If <b>NO</b> selected then at the prompt: "Bus Profile left unchanged" Select <b>OK</b> to continue	OK		YES ok mel		
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:  <b>DM_BOL_REC_PAC (PM038420)</b> is incrementing	Incrementing		AND: PA019420	✓	
12.	<b>PACS in SAFE mode.</b> <b>Return to calling Procedure</b>	OK			✓	

N/A

Enter Date   Time:	27/05/08	Sign Off TD:	[Signature]	PA:	[Signature]	Test Location:	0170
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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 <b>NO</b> 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 <b>YES</b> 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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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 <b>P102999SCVT906_ASDISTPACS_PWR_OFF_N</b> it will prompt:  "Set Bus Profile Back to Original Setting?"	NO				
5.	Select <b>YES</b> 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 <b>NO</b> 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:		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>
8.	PACS OFF. Return to calling Procedure	OK				

<b>Enter Date   Time:</b>			<b>Sign Off TD:</b>		<b>PA:</b>		<b>Test Location:</b>	
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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:  <b>Z102999SCVT012_ASDGEN_PACSPWRON_R</b>					
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				

<b>Enter Date   Time:</b>			<b>Sign Off</b>	<b>TD:</b>	<b>PA:</b>	<b>Test Location:</b>	
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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 <b>NO</b> 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 <b>YES</b> 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 <b>P102999SCVT907_ASDISTPACS_PWR_ON_R</b> will prompt that AFO will be commanded next.  Click <b>OK</b> to continue the script if the prompt appears.	OK				
6.	On HPCCS when all autonomous actions have been completed by the power on script <b>P102999SCVT907_ASDISTPACS_PWR_ON_R</b> 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 <b>YES</b> 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 <b>NO</b> 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:  <b>DM_BOL_REC_PAC (PM038420)</b> is	Incrementing		AND: PA019420		

Enter Date   Time:		Sign Off   TD:		PA:		Test Location:	
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<b>Step- No.</b>	<b>Test-Step-Description</b>	<b>Nominal Value</b>	<b>Actual Value</b>	<b>Remarks</b>	<b>P</b>	<b>N</b>
	incrementing					
12.	<b>PACS in SAFE mode. Return to calling Procedure</b>	OK				

<b>Enter Date   Time:</b>		<b>Sign Off</b>	<b>TD:</b>	<b>PA:</b>	<b>Test Location:</b>
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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:  <b>Z102999SCVT013_ASDGEN_PACSPWROFF_R</b>					
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 <b>NO</b> 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 <b>YES</b> 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 <b>P102999SCVT908_ASDISTPACS_PWR_OFF_R</b> it will prompt:  "Set Bus Profile Back to Original Setting?"	NO				
5.	Select <b>YES</b> 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 <b>NO</b> 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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<b>Step- No.</b>	<b>Test-Step-Description</b>	<b>Nominal Value</b>	<b>Actual Value</b>	<b>Remarks</b>	<b>P</b>	<b>N</b>
7.	On HPCCS stop Packet History displays for the following APIDs:1153,1155	OK				
8.	<b>PACS OFF.</b> Return to calling Procedure	OK				

<b>Enter Date   Time:</b>			<b>Sign Off TD:</b>	<b>PA:</b>	<b>Test Location:</b>	
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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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<b>Step- No.</b>	<b>Test-Step-Description</b>	<b>Nominal Value</b>	<b>Actual Value</b>	<b>Remarks</b>	<b>P</b>	<b>N</b>
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.	<b>Return to or synchronise with calling Procedure</b>					

<b>Enter Date   Time:</b>			<b>Sign Off</b>	<b>TD:</b>	<b>PA:</b>	<b>Test Location:</b>	
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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.

<b>Step-No.</b>	<b>Test-Step-Description</b>	<b>Nominal Value</b>	<b>Actual Value</b>	<b>Remarks</b>	<b>P</b>	<b>N</b>
1.	From the HPCCS test conductor console start the test script to put PACS in simulated Nominal Spectroscopy from SAFE:  <b>P102999SCVT913_ASDGENPACS_BurstMode</b>					

<b>Enter Date   Time:</b>			<b>Sign Off</b>	<b>TD:</b>	<b>PA:</b>	<b>Test Location:</b>	
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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.	<b>Return to or synchronise with calling Procedure</b>					

<b>Enter Date   Time:</b>			<b>Sign Off</b>	<b>TD:</b>	<b>PA:</b>	<b>Test Location:</b>	
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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.

<b>Step- No.</b>	<b>Test-Step-Description</b>	<b>Nominal Value</b>	<b>Actual Value</b>	<b>Remarks</b>	<b>P</b>	<b>N</b>
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;"><b>PACS_SAFE_Mode</b></p>			Ensure that PACS Prime Bus Profile is still selected		
2.	<b>Return to or synchronise with calling Procedure</b>					

<b>Enter Date   Time:</b>		<b>Sign Off   TD:</b>		<b>PA:</b>		<b>Test Location:</b>	
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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

**7.1.9 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.

<b>Step- No.</b>	<b>Test-Step-Description</b>	<b>Nominal Value</b>	<b>Actual Value</b>	<b>Remarks</b>	<b>P</b>	<b>N</b>
1.	From HPCCS Test Conductor console issue command to disconnect PACS I-EGSE  <b>disconnect HPACSEGSE</b>	DISCONNECTED		AND: SYS_PARS		
2.	If no longer required for other instrument activities, from the HPCCS test conductor console terminate the test script:  <b>ALL_SubscribeParams</b>					
3.	<b>Return to calling Procedure</b>					

<b>Enter Date   Time:</b>			<b>Sign Off TD:</b>		<b>PA:</b>		<b>Test Location:</b>	
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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>					

N/A

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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:  <b>ALL_SubscribeParams</b>					
4.	Verify HPCCS-IEGSE connection by sending the following test command from manual command stack (repeater value 0) and verify received OK on IEGSE:  <b>YC00X966</b>	OK				
5.	<b>Return to calling Procedure</b>					

N/A

<b>Enter Date   Time:</b>			<b>Sign Off TD:</b>		<b>PA:</b>		<b>Test Location:</b>	
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Doc. No: HP-2-ASED-TP-0206

Issue: 1.2

Date: 25.04.08

**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: <b>Z102999SCVT004_ASDGEN_SPIREPWRON_P</b>				✓	
3.	On HPCCS when prompted: "SPIRE Switch ON for IST activities in any conditions - Select NO to abort TS if not correct"	YES	(5)		✓	

Enter Date   Time:	27/07/08	Sign Off   TD:	<i>[Signature]</i>	PA:	<i>[Signature]</i>	Test Location:	<i>[Signature]</i>
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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 <b>NO</b> 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.			YES sketch		
5.	If <b>YES</b> 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 <b>S102999SCVT017_ASDGENSPIR_PWR_ON_P</b> it will prompt:  "Set Bus Profile Back to Original Setting?"	NO	YES		✓	

N/A

Enter Date   Time:	22/05/08	Sign Off TD:	[Signature]	PA:	[Signature]	Test Location:	017
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Date: 25.04.08

Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
7.	Select <b>YES</b> 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 <b>NO</b> selected then at the prompt:  "Bus Profile left unchanged"  Select OK to continue	OK			yes shhy	N/A
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:	27/05/08	Sign Off TD:	<i>[Signature]</i>	PA:	<i>[Signature]</i>	Test Location:	0310c
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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.	<b>SPIRE powered and in REDY mode</b> <b>Return to calling Procedure</b>				✓	

Enter Date   Time:	21/09/08	Sign Off TD:	Jacob	PA:	[Signature]	Test Location:	OMA
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Doc. No: HP-2-ASED-TP-0206

Issue: 1.2

Date: 25.04.08

**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 <b>NO</b> 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 <b>YES</b> 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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Issue: 1.2

Date: 25.04.08

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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 <b>S102999SCVT019_ASDGENSPIR_PWR_OFF_P</b> it will prompt:</p> <p><i>"Set Bus Profile Back to Original Setting?"</i></p>	NO				
7.	<p>Select <b>YES</b> 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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Issue: 1.2

Date: 25.04.08

File: HP-2-ASED-TP-0206\_Issue\_1r2.Doc



<b>Step- No.</b>	<b>Test-Step-Description</b>	<b>Nominal Value</b>	<b>Actual Value</b>	<b>Remarks</b>	<b>P</b>	<b>N</b>
8.	If <b>NO</b> 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.	<b>SPIRE OFF.</b> <b>Return to calling Procedure</b>					

<b>Enter Date   Time:</b>			<b>Sign Off</b>	<b>TD:</b>	<b>PA:</b>	<b>Test Location:</b>	
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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

**7.2.4 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: <b>Z102999SCVT006_ASDGEN_SPIREPWRON_R</b>					
3.	On HPCCS when prompted: "SPIRE Switch ON for IST activities in any conditions - Select NO to abort TS if not correct"	YES				

<b>Enter Date   Time:</b>		<b>Sign Off TD:</b>		<b>PA:</b>		<b>Test Location:</b>	
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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 <b>NO</b> 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 <b>YES</b> 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 <b>S102999SCVT018_ASDGENSPIR_PWR_ON_R</b> 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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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.	Select <b>YES</b> 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 <b>NO</b> 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.	<b>SPIRE powered and in REDY mode</b> <b>Return to calling Procedure</b>					

<b>Enter Date   Time:</b>		<b>Sign Off</b>	<b>TD:</b>	<b>PA:</b>	<b>Test Location:</b>	
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 Issue: 1.2  
 Date: 25.04.08

**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 <b>NO</b> 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 <b>YES</b> is selected the test script will go on to automatically power off all SPIRE warm units.					

<b>Enter Date   Time:</b>			<b>Sign Off</b>	<b>TD:</b>	<b>PA:</b>	<b>Test Location:</b>	
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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.	<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 HPPCCS when all autonomous actions have been completed by the power on script <b>S102999SCVT020_ASDGENSPIR_PWR_OFF_R</b> it will prompt:</p> <p><i>"Set Bus Profile Back to Original Setting?"</i></p>	NO				
6.	<p>Select <b>YES</b> 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				

<b>Enter Date   Time:</b>		<b>Sign Off</b>	<b>TD:</b>	<b>PA:</b>	<b>Test Location:</b>
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Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
7.	If <b>NO</b> 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.	<b>SPIRE OFF.</b> <b>Return to calling Procedure</b>					

<b>Enter Date   Time:</b>			<b>Sign Off</b>	<b>TD:</b>	<b>PA:</b>	<b>Test Location:</b>	
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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.	<b>Return to or synchronise with calling Procedure</b>	OK				

<b>Enter Date   Time:</b>			<b>Sign Off</b>	<b>TD:</b>	<b>PA:</b>	<b>Test Location:</b>	
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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:  <b>Z102999SCVT009_ASDGEN_SPIREOPS2STBY</b>					
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				

<b>Enter Date   Time:</b>		<b>Sign Off</b>	<b>TD:</b>	<b>PA:</b>	<b>Test Location:</b>
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<b>Step- No.</b>	<b>Test-Step-Description</b>	<b>Nominal Value</b>	<b>Actual Value</b>	<b>Remarks</b>	<b>P</b>	<b>N</b>
4.	Return to or synchronise with calling Procedure	OK				

<b>Enter Date   Time:</b>			<b>Sign Off</b>	<b>TD:</b>	<b>PA:</b>	<b>Test Location:</b>	
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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  <b>disconnect HSPIREEGSE</b>	DISCONNECTED		AND: SYS_PARS		
2.	If no longer required for other instrument activities, from the HPCCS test conductor console terminate the test script:  <b>ALL_SubscribeParams</b>					
3.	<b>Return to calling Procedure</b>					

<b>Enter Date   Time:</b>			<b>Sign Off</b>	<b>TD:</b>	<b>PA:</b>	<b>Test Location:</b>	
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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.	If not already on, Switch on & configure HIFI I-EGSE i.a.w. RD-6.  If switching on Nominal units then confirm I-EGESE configured for nominal and FPU cold and LOU warm without attenuators  If switching on Redunant units then confirm I-EGESE configured for redundant and FPU cold and LOU warm without attenuators	OK  Nominal/Redundant configuration			✓	
2.	From HPCCS Test Conductor console issue command to connect to HIFI I-EGSE  connect HHIFIEGSE	YZS27940 = CONNECTED		AND SYS_PARS	✓	
	Perform the following two steps if command parameter exchange is required between the IEGSE and HPCCS for the test concerned.					

Enter Date | Time: 23/05/04 09/08/ Sign Off TD: [Signature] PA: [Signature] B Hedd Test Location: ESTEC

**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:	23/05/08	9:10	Sign Off	TD: <i>[Signature]</i>	PA:	Test Location:	<i>[Signature]</i>
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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:  <b>ALL_SubscribeParams</b>	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:  <b>YC00X962</b>	OK			✓	
5.	Patch HIFI synthetic parameters for warm conditions by executing the following scripts:  <b>HIFIST_ASED_PatchPtvChecksum</b>  <b>HIFIST_ASED_PatchTempLimits</b>  <i>Note these scripts replace HIFIST_CCS_conf_ptv_checksum_warm due to NCR-3652</i>	OK			✓	
6.	<b>Return to calling Procedure</b>					

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Enter Date   Time:	23/05/08 05 31	Sign Off   TD:	[Signature]	PA:	[Signature] B. Hagg	Test Location:	ESTEC
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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:  <b>Z102999SCVT014_ASDGEN_HIFIPWRON_P</b>	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			✓	

PP  
PP  
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Enter Date   Time:	23/05/08	9:13	Sign Off TD:	Shaw	PA:	AD	G. Hodge	Test Location:	ESTEC
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Doc. No: HP-2-ASED-TP-0206

Issue: 1.2

Date: 25.04.08

Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
	If in any doubt about the script being executed <b>NO</b> 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.			N/A		✓
	If <b>YES</b> 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. <b>So he should be contacted before the next test step.</b>				✓	
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			✓	

JAP

JAP

JAP

Enter Date   Time:	23/05/08	Sign Off TD:	[Signature]	PA:	[Signature] G. Hogg	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\_1r2.Doc

Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
5.	Value of OBS_ID during table read commanding:  HM003190	HEX = DEC =	3000406A 2415935594	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 <b>PASS</b> 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?"	<del>NO</del>	YES		✓	

Enter Date   Time:	23/05/08   10:39	Sign Off TD:	[Signature]	PA:	[Signature]	B. HOGGE	Test Location:	EJTEC
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Step- No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
8.	<p>Select <b>YES</b> 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 <b>NO</b> 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 &amp; 1026</p>	OK				
11.	<p>Start Active Cooling of HIFI Panel i.a.w. AD-2</p>	OK				

<b>Enter Date   Time:</b>			<b>Sign Off   TD:</b>		<b>PA:</b>		<b>Test Location:</b>	
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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
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		ok	✓	
13.	<b>HIFI Nominal powered and in Standby1 mode</b> Return to calling procedure	OK			✓	

PP

PP

Enter Date   Time:	23/05/08	10h2	Sign Off TD:	[Signature]	PA:	[Signature]	Test Location:	ETOC
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Doc. No: HP-2-ASED-TP-0206

Issue: 1.2

Date: 25.04.08

**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:  <b>Z102999SCVT015_ASDGEN_HIFIPWROFF_P</b>	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 <b>NO</b> 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 <b>YES</b> 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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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 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 &amp; 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><b>connect HHIFIEGSE</b></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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Doc. No: HP-2-ASED-TP-0206

Issue: 1.2

Date: 25.04.08

File: HP-2-ASED-TP-0206\_Issue\_1r2.Doc



**7.3.2 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

<b>Enter Date   Time:</b>			<b>Sign Off</b>	<b>TD:</b>	<b>PA:</b>	<b>Test Location:</b>	
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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:  <b>Z102999SCVT014_ASDGEN_HIFIPWRON_P</b>	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				

<b>Enter Date   Time:</b>		<b>Sign Off TD:</b>		<b>PA:</b>		<b>Test Location:</b>	
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Doc. No: HP-2-ASED-TP-0206

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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 <b>NO</b> 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 <b>YES</b> 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. <b>So he should be contacted before the next test step.</b>					
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 <b>PASS</b> 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 <b>H102999SCVT015_ASDISTHIFI_PWR_ON_P</b> it will prompt:  "Set Bus Profile Back to Original Setting?"	NO				

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
8.	<p>Select <b>YES</b> 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 <b>NO</b> 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 &amp; 1026</p>	OK				
11.	<p>Start Active Cooling of HIFI Panel i.a.w. AD-2</p>	OK				

<b>Enter Date   Time:</b>		<b>Sign Off</b>	<b>TD:</b>	<b>PA:</b>	<b>Test Location:</b>
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<b>Step- No.</b>	<b>Test-Step-Description</b>	<b>Nominal Value</b>	<b>Actual Value</b>	<b>Remarks</b>	<b>P</b>	<b>N</b>
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.	<b>HIFI Nominal powered and in Standby1 mode</b> <b>Return to calling procedure</b>	OK				

<b>Enter Date   Time:</b>			<b>Sign Off</b>	<b>TD:</b>	<b>PA:</b>	<b>Test Location:</b>	
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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

**7.3.3 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 <b>NO</b> 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 <b>YES</b> 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 <b>H102999SCVT016_ASDISTHIFI_PWR_OFF_P</b> it will prompt:  <i>"Set Bus Profile Back to Original Setting?"</i>	NO				
5.	Select <b>YES</b> 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 <b>NO</b> 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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<b>Step- No.</b>	<b>Test-Step-Description</b>	<b>Nominal Value</b>	<b>Actual Value</b>	<b>Remarks</b>	<b>P</b>	<b>N</b>
7.	On HPCCS stop Packet History displays for the following APIDs:1024,1026	OK				
8.	<b>HIFI OFF</b> <b>Return to calling Procedure</b>	OK				

<b>Enter Date   Time:</b>			<b>Sign Off</b>	<b>TD:</b>	<b>PA:</b>	<b>Test Location:</b>	
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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

**7.3.4 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

<b>Enter Date   Time:</b>			<b>Sign Off</b>	<b>TD:</b>	<b>PA:</b>	<b>Test Location:</b>	
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Issue: 1.2

Date: 25.04.08

File: HP-2-ASED-TP-0206\_Issue\_1r2.Doc

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:  <b>Z102999SCVT016_ASDGEN_HIFIPWRON_R</b>	OK		ANDs HA000289 HA004289		
	If in any doubt about the script being executed <b>NO</b> 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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Date: 25.04.08

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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 <b>YES</b> 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. <b>So he should be contacted before the next test step.</b>					
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:  <b>HM003190</b>			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 <b>PASS</b> 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 <b>H102999SCVT017_ASDISTHIFI_PWR_ON_R</b> 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
8.	<p>Select <b>YES</b> 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 <b>NO</b> 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 &amp; 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.	<b>HIFI Redundant powered and in Standby1 mode</b> <b>Return to calling procedure</b>	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

**7.3.5 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:  <b>Z102999SCVT017_ASDGEN_HIFIPWROFF_R</b>	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 <b>NO</b> 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 <b>YES</b> 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 <b>H102999SCVT018_ASDISTHIFI_PWR_OFF_R</b> it will prompt:  <i>"Set Bus Profile Back to Original Setting?"</i>	NO				
5.	Select <b>YES</b> 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 <b>NO</b> 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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<b>Step-No.</b>	<b>Test-Step-Description</b>	<b>Nominal Value</b>	<b>Actual Value</b>	<b>Remarks</b>	<b>P</b>	<b>N</b>
7.	On HPCCS stop Packet History displays for the following APIDs:1025,1027	OK				
8.	<b>HIFI OFF</b> <b>Return to calling Procedure</b>	OK				

<b>Enter Date   Time:</b>		<b>Sign Off</b>	<b>TD:</b>	<b>PA:</b>	<b>Test Location:</b>	
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Doc. No: HP-2-ASED-TP-0206

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: <b>Z102999SCVT020_ASDGEN_HIFISTBY1_20PS_P</b>	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"  <b>Select YES</b>	YES				

<b>Enter Date   Time:</b>			<b>Sign Off</b>	<b>TD:</b>	<b>PA:</b>	<b>Test Location:</b>	
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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
3.	On HPCCS when prompted:  "Bus profile left as HIFI PRIME while in Science Prime mode - OK to continue"  Select OK	OK				
4.	<b>HIFI Nominal in Science Prime Return to or synchronise with calling Procedure</b>	OK				

<b>Enter Date   Time:</b>		<b>Sign Off</b>	<b>TD:</b>	<b>PA:</b>	<b>Test Location:</b>
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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 <b>YES</b>	YES				

Enter Date   Time:			Sign Off TD:		PA:		Test Location:	
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<b>Step- No.</b>	<b>Test-Step-Description</b>	<b>Nominal Value</b>	<b>Actual Value</b>	<b>Remarks</b>	<b>P</b>	<b>N</b>
3.	On HPCCS when prompted:  "Bus profile left as HIFI PRIME, change manually after if required - OK to continue"  Select OK	OK				
4.	<b>HIFI Nominal in Standby1</b> <b>Return to or synchronise with calling Procedure</b>	OK				

<b>Enter Date   Time:</b>			<b>Sign Off</b>	<b>TD:</b>	<b>PA:</b>	<b>Test Location:</b>	
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**7.3.8 HIFI I-EGSE Disconnection**

<b>Step- No.</b>	<b>Test-Step-Description</b>	<b>Nominal Value</b>	<b>Actual Value</b>	<b>Remarks</b>	<b>P</b>	<b>N</b>
1.	From HPCCS Test Conductor console issue command to disconnect PACS I-EGSE  <b>disconnect HHIFIEGSE</b>	DISCONNECTED		AND: SYS_PARS		
2.	If no longer required for other instrument activities, from the HPCCS test conductor console terminate the test script:  <b>ALL_SubscribeParams</b>					
3.	<b>Return to calling Procedure</b>					

<b>Enter Date   Time:</b>			<b>Sign Off</b>	<b>TD:</b>	<b>PA:</b>	<b>Test Location:</b>	
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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 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).

<b>Step- No.</b>	<b>Test-Step-Description</b>	<b>Nominal Value</b>	<b>Actual Value</b>	<b>Remarks</b>	<b>P</b>	<b>N</b>
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:  <b>Z102999SCVT014_ASDGEN_HIFIPWRON_P</b>	OK		ANDs HA000289 HA004289		
3.	On HPCCS when prompted:  "FM HIFI ICU Standalone Switch ON - Select NO to abort TS if not correct"	YES				

<b>Enter Date   Time:</b>		<b>Sign Off</b>	<b>TD:</b>	<b>PA:</b>	<b>Test Location:</b>	
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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
4.	On HPCCS when all autonomous actions have been completed by the power on script <b>H102999SCVT009_ASDGENHIFI_ICU_ON_P</b> it will prompt:  "Set Bus Profile Back to Original Setting?"	NO				
5.	Select <b>YES</b> 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 <b>NO</b> 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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Doc. No: HP-2-ASED-TP-0206

Issue: 1.2

Date: 25.04.08

<b>Step- No.</b>	<b>Test-Step-Description</b>	<b>Nominal Value</b>	<b>Actual Value</b>	<b>Remarks</b>	<b>P</b>	<b>N</b>
7.	Verify HK TM packets are being received on APIDs 1024 & 1026	OK				
8.	<b>HIFI Nominal ICU powered Return to calling procedure</b>	OK				

<b>Enter Date   Time:</b>			<b>Sign Off</b>	<b>TD:</b>	<b>PA:</b>	<b>Test Location:</b>	
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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 <b>NO</b> 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 <b>YES</b> 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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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
3.	<p>On HPCCS when all autonomous actions have been completed by the power on script <b>H102999SCVT010_ASDGENHIFI_ICU_OFF_P</b> it will prompt:</p> <p><i>"Set Bus Profile Back to Original Setting?"</i></p>	NO				
4.	<p>Select <b>YES</b> 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 <b>NO</b> 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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<b>Step-No.</b>	<b>Test-Step-Description</b>	<b>Nominal Value</b>	<b>Actual Value</b>	<b>Remarks</b>	<b>P</b>	<b>N</b>
6.	On HPCCS stop Packet History displays for the following APIDs:1024,1026	OK				
7.	<b>HIFI OFF</b> Return to calling Procedure	OK				

<b>Enter Date   Time:</b>			<b>Sign Off TD:</b>		<b>PA:</b>		<b>Test Location:</b>	
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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).

<b>Step- No.</b>	<b>Test-Step-Description</b>	<b>Nominal Value</b>	<b>Actual Value</b>	<b>Remarks</b>	<b>P</b>	<b>N</b>
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:  <b>Z102999SCVT014_ASDGEN_HIFIPWRON_R</b>	OK		ANDs HA000289 HA004289		
3.	On HPCCS when prompted:  "FM HIFI ICU Standalone Switch ON - Select NO to abort TS if not correct"	YES				

<b>Enter Date   Time:</b>			<b>Sign Off</b>	<b>TD:</b>	<b>PA:</b>	<b>Test Location:</b>	
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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 <b>H102999SCVT011_ASDGENHIFI_ICU_ON_R</b> it will prompt:  "Set Bus Profile Back to Original Setting?"	NO				
5.	Select <b>YES</b> 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 <b>NO</b> 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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<b>Step- No.</b>	<b>Test-Step-Description</b>	<b>Nominal Value</b>	<b>Actual Value</b>	<b>Remarks</b>	<b>P</b>	<b>N</b>
7.	Verify HK TM packets are being received on APIDs 1025 & 1027	OK				
8.	<b>HIFI Redundant ICU powered Return to calling procedure</b>	OK				

<b>Enter Date   Time:</b>			<b>Sign Off</b>	<b>TD:</b>	<b>PA:</b>	<b>Test Location:</b>	
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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: <b>Z102999SCVT015_ASDGEN_HIFIPWROFF_P</b>	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 <b>NO</b> 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 <b>YES</b> 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 <b>H102999SCVT010_ASDGENHIFI_ICU_OFF_P</b> it will prompt:</p> <p><i>"Set Bus Profile Back to Original Setting?"</i></p>	NO				
4.	<p>Select <b>YES</b> 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 <b>NO</b> 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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<b>Step- No.</b>	<b>Test-Step-Description</b>	<b>Nominal Value</b>	<b>Actual Value</b>	<b>Remarks</b>	<b>P</b>	<b>N</b>
6.	On HPCCS stop Packet History displays for the following APIDs:1025,1027	OK				
7.	<b>HIFI OFF</b> Return to calling Procedure	OK				

<b>Enter Date   Time:</b>			<b>Sign Off TD:</b>	<b>PA:</b>	<b>Test Location:</b>	
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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.

<b>Step- No.</b>	<b>Test-Step-Description</b>	<b>Nominal Value</b>	<b>Actual Value</b>	<b>Remarks</b>	<b>P</b>	<b>N</b>
1.	From the HPCCS test conductor console start the test script to put HIFI into simulated science:  <b>Z102999SCVT020_ASDGEN_HIFISTBY1_2OPS_P</b>	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 <b>YES</b>	YES				

<b>Enter Date   Time:</b>		<b>Sign Off</b>	<b>TD:</b>	<b>PA:</b>	<b>Test Location:</b>	
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<b>Step- No.</b>	<b>Test-Step-Description</b>	<b>Nominal Value</b>	<b>Actual Value</b>	<b>Remarks</b>	<b>P</b>	<b>N</b>
3.	On HPCCS when prompted:  "Bus profile left as HIFI PRIME while in Science Prime mode - OK to continue"  Select OK	OK				
4.	<b>HIFI Nominal in Simulated Science Return to or synchronise with calling Procedure</b>	OK				

<b>Enter Date   Time:</b>			<b>Sign Off</b>	<b>TD:</b>	<b>PA:</b>	<b>Test Location:</b>	
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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: <b>Z102999SCVT021_ASDGEN_HIFIOPS2_STBY1_P</b>	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 <b>YES</b>	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.	<b>HIFI Nominal in ICU ON</b> <b>Return to or synchronise with calling Procedure</b>	OK				

<b>Enter Date   Time:</b>			<b>Sign Off TD:</b>		<b>PA:</b>		<b>Test Location:</b>	
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## **8 ANNEX - Script hierarchy**

Detailed in the following sub-sections:

### **8.1 General**

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#### **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**



## 8.4 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
```

### 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

- > -> 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	

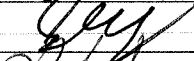


Table 8.6-1: Procedure Variation Sheet

**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	23/05/08	
Test Conductor	23/05/08	
PA Responsible	23/05/08	
ESA Representative		

END OF DOCUMENT

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	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		<b>Instruments:</b>	
	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		<b>Subcontractors:</b>	
	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



**6.8 TRR, PTS**

A copy of the "MOM" follow.

## Attachment 1 to Section 6.8:

# TRR Minutes H-P-TASF-MN-10347



**Spacecraft Reconfiguration TRR**

REF.: H-P-TASF-MN-10347

HERSCHEL FM

DATE : 18/04/08

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**MINUTES OF MEETING**

PLACE : FU Meeting Room, ESTEC

PURPOSE :

**Spacecraft Reconfiguration TRR**

CLASSIFICATION :


ATTENDEES	FIRM	SIGNATURE	ATTENDEES	FIRM	SIGNATURE
J. Hall	TASF		F. Sauvage (Tele)	TASF	
S. Mooney	TASF		F. Chatte	TASF	
P. Modesto	ASED		J. Huesler	ESA	
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	J. Huesler	S. Mooney	
SIGNATURE				

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	ACTION
<p><b><u>Agenda</u></b></p> <ol style="list-style-type: none"> <li>1. Introduction</li> <li>2. Identification of Test Item</li> <li>3. Test procedure/Timeline</li> <li>4. NCR/RFD status</li> <li>5. Safety Hazards and Hazardous operations</li> <li>6. Test equipment/Facility and Calibration Status</li> <li>7. Cleanliness</li> <li>8. Test Personnel and Responsibilities</li> <li>9. Problem Areas</li> <li>10. AOB</li> <li>11. Conclusion</li> </ol>	
<p style="text-align: center;"><b>Introduction</b></p> <p>This Meeting is the TRR for the Spacecraft Reconfiguration test performed within the scope of the IST 1 part 2 testing for the Herschel satellite.</p>	
<p style="text-align: center;"><b>Identification of Test Item</b></p> <p><b>As Designed</b></p> <ul style="list-style-type: none"> <li>• S/C CIDL Herschel S/C CI#100000 CIDL: H-P-2-ASP-LI-1054 iss.1</li> </ul> <p><b>As Built</b></p> <p><b>H-EPLM Integration Status List</b></p> <p>ASED PLM ISL: HP-2-ASED-LI-0032 iss 13 Status 17.04.2008 See Annex 1</p> <p><b>SVM Integration Status List</b></p> <p>ASED SVM ISL: HP-2-ASED-LI-0033 iss 12 Status 12.04.2008 See Annex 2</p> <p><b>SW Configuration</b></p> <ul style="list-style-type: none"> <li>• CDMS V 3.4.0.9</li> <li>• ACMS</li> </ul>	

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<p style="text-align: center;"><b>V 3.7</b></p> <ul style="list-style-type: none"> <li>• <b>HPSDB</b> <b>HP-2-ASP-LI-1441 v 10 (11/4/2008)</b></li> </ul> <p>A full software configuration is detailed in Annex 4</p> <p><b>Instruments:</b> PACS: Prime (HKTM)</p> <p>HIFI: Standby (ICU only ON generating housekeeping)</p> <p>SPIRE: Standby (HKTM)</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 TRR states that the proposed configuration is acceptable for the execution of the test.</p>	
<b>Test procedure/Timeline</b>	
<p><b>Procedures</b></p> <p>The Leading Procedure HP-2-ASED-TP-0134 iss 3 shall be used to control the test.</p> <p>The dedicated test procedure HP-2-ASED-TP-0190 iss 1 is used to perform the spacecraft reconfiguration testing.</p> <p>The Leading procedure is currently in the signature loop.</p> <p>The spacecraft reconfiguration procedure is still in the process of being updated.</p> <p>Signed procedures will presented for the test execution</p> <p><b>Open work</b></p> <p><b>Timeline:</b></p> <p>The test is planned to be performed 21/4/2008 starting at approximately 06:00.</p> <p>The test is foreseen to run for a duration of approximately 15 hours broken</p>	

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<p>down as follows:</p> <ul style="list-style-type: none"> <li>• IST START 3 hours</li> <li>• Configuration of spacecraft 0 hours</li> <li>• Test 10 hours</li> <li>• IST End 2 hours</li> </ul>	
<p><b>NCR/SPR Status</b></p> <p><b>SPRs</b></p> <p>403 CBH are switch on for RCS A, however RCS B is configured Missing commands in script. This was raised in Nominal mode robustness be will also affect Spacecraft reconfiguration.</p> <p><b>ASED (PM) to update the script to include the missing commands for correct RCS A enabling.</b></p> <p>Script to be updated to have the missing commands missing <b>Open Work</b></p> <p>Torino:</p> <p>36 IST_STATUS conflict in procedure table Still under investigation. The configuration table on p215 is in conflict with the table in p151. The table on 215 is taken as the correct specification to be followed. <b>Close wrt SPR 410</b></p> <p>45 IST_STATUS table to be updated Still under investigation: (4k instead of 125k) <b>SPR Open but non blocking (To investigate with system engineering)</b></p> <p><b>409: Error in IST_FD_B ACMS config file</b> <b>Can be closed.</b></p> <p><b>410: Reoccurrence of AVM SPRs I-036, I-042, I-043</b> <b>Open: Minor, no impact</b></p> <p><b>NCRs</b></p> <p>4078 : BS Safety loop Occurred Cause still not understood. Initial investigations shows it is triggered by an</p>	<p><b>AI #1</b> <b>ASED (PM)</b> <b>20/4/2008</b></p>

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over voltage indication from the power supply in the BS-SCOE.

Note EGSE team (ICL) state that the issue does not seem to be related to the SAS channel 7 and it is recommended that the channel be configured into the nominal channel.

This is agreed.

TASF (ICL) or TASI(LA) to reconfigure the SAS channel 7 to be operational for the test

Verify SAS channel 7 is operational for the test

**Open Work**

3472 : Unexpected S/C switch-off during IST debugging, due to Safety Loop (transition): Due to the spec requiring the use of only Bat SCOE which could not provide sufficient power. Bat SCOE limit raised.

Battery SCOE limits have been raised

**To be tested during this run.**

**Remains Open**

3613: Unknown TM(5,2) event after CDMS 3A alarm.

TM warning. Still under investigation

**To be verified during this test execution and closed if the error does not occur.**

**Other:**

None

Actions from PTS:

**AI 1 ASED (PM) to ensure document is updated and re-issued for future testing.**

Open.


**AI 2 ASED (PM) to update the procedure to monitor the alarm status before the enabling of RM to determine if there are any pending alarms.**

Updated.

Closed.


**AI 3 For the instruments activation for SPIRE and PACS the instruments shall be operated in the accordance with HP-2-ASED-TP-206 iss 1.1 draft.**

**AI # 2  
TASF (ICL)/  
TASI (LA)  
21/4/2008**


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<p><b>This will be formalised prior to the TRR. Instrument activation is incorporated into procedure. Closed</b></p> <p>AI 4 For HIFI a script will be incorporated by ASED (PM) into the operational scripts. <b>Instrument activation is incorporated into procedure. Closed</b></p>	
<b>Test equipment/Facility and Calibration Status</b>	
<p><b>Calibration status of equipment</b></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>	
<b>Safety</b>	
<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"> <li>• None</li> </ul>	
<p><b><u>Cleanliness</u></b></p> <p>Test will be performed in the class 100000 Hydra area at ESTEC.</p>	
<b>Test Personnel and responsibilities</b>	
<p>Test Director: S. Mooney  Test Conductor: P. Modesto  PA : J. Hall  Engineering Support: Y. Roche/F. Sauvage (on call +33 677 175930)  Cryo Engineering Support: N/A  Functional Support: S. Hamer (instrument)/ A. Di Capua (ACMS)  ESA: F. De Bruin/ J. Huesler</p> <p>Test operator, as per shift</p>	




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EGSE support as per shift QA support as per shift	
<b>Problem Areas</b>	
None	
<b>AOB</b>	
The red mark to IST specification 6: Changes red marked in the specification are agreed in principal with system engineering (FS)	
<b>Conclusion of TRR meeting</b>	
The TRR board states formally that, given the closure of the Open work items, the Spacecraft reconfiguration 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 procedures will presented for the test execution.
3. Verify SAS channel 7 is operational for the test

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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 Fitcheck 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

**THALES**

**MINUTES OF MEETING**

PLACE : *FU Meeting Room, ESTEC*

Equipment / CI-No.	Integr. Date	Model, Serial No	ABCL Ref. (or EIDP)	Qualified	Remarks / Open Work / NCR's
					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

**MINUTES OF MEETING**

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Equipment / CI-No.	Integr. Date	Model, Serial No	ABCL Ref. (or EIDP)	Qualified	Remarks / Open Work / NCR's
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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Equipment / CI-No.	Integr. Date	Model, Serial No	ABCL Ref. (or EIDP)	Qualified	Remarks / Open Work / NCR's
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 ASESD-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 ASESD 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 LO 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 ASESD-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 <b>Thermal links</b>					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 <b>Cryo Components</b>					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 Vacuumpump 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 ASE-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 ASE-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"> <li>Flushing system</li> <li>Manometer</li> <li>Tooling bracket / support, pressure sensor line</li> <li>Tooling cap pressure sensor line</li> </ul>
121241-02 <b>Line 1</b>	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 <b>Line 2</b>	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 <b>Line 3</b>	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 <b>Line 4</b>	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 <b>Line 5</b>	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. 24.10.2007 SN1=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.

**THALES**

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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 Al 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. 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 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

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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 <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



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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	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. 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, 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
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
<b>121431-01 HOT CCH Bundles</b>			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 <b>CCH</b>			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-0078 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 modify 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 <u>Lower SFW Harness CBs</u>					
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 <b>Harness CBs</b>					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	2547-121432-161-01-0A	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. ASESD-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 ASESD-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 ASESD-SD-0101: Rail wrapped with gore-tex ASESD-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.	ASESD-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	28.03.2008	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 ASEF with support of ASEF
<b>Temporary Installed Items : MGSE, OGSE, CVSE</b>		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 Alignment 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

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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
<b>SVM Connector Brackets</b>				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	
<b>SVM HIFI</b>					
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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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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Equipment / CI-No.	Integr. Date	Model, Serial No	ABCL Ref. (or EIDP)	Qualified	Remarks / Open Work / NCR's
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
<b>SVM PACS</b>					
<b>Panel *Y-Z (PACS)</b>	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
<b>PACS WIH Harness</b>					
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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Equipment / CI-No.	Integr. Date	Model, Serial No	ABCL Ref. (or EIDP)	Qualified	Remarks / Open Work / NCR's
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
<b>PACS SIH Harness</b>					
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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Equipment / CI-No.	Integr. Date	Model, Serial No	ABCL Ref. (or EIDP)	Qualified	Remarks / Open Work / NCR's
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 121432-03-33E SIH-SP-15	22.02.2007	FM	HP-2-CASA- DP-0015	Y	Integrated acc. HP-2-ASED-PR-0077
<b>SVM SPIRE 125200</b>					
<b>Panel -Z (SPIRE/CCU)</b>	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
<b>SPIRE WIH Harness</b>					
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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Equipment / CI-No.	Integr. Date	Model, Serial No	ABCL Ref. (or EIDP)	Qualified	Remarks / Open Work / NCR's
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
<b>CCU Harness</b>					
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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Equipment / CI-No.	Integr. Date	Model, Serial No	ABCL Ref. (or EIDP)	Qualified	Remarks / Open Work / NCR's
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
<b>Panel +Y+Z (TT&amp;C)</b>	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.
<b>Panel +Z (VMC)</b>	04.04.2008	STM			Final closure acc.H-P-PR-AI 0058



**MINUTES OF MEETING**

PLACE : *FU Meeting Room, ESTEC*

Equipment / CI-No.	Integr. Date	Model, Serial No	ABCL Ref. (or EIDP)	Qualified	Remarks / Open Work / NCR's
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				
<b>Harness</b>					
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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Equipment / CI-No.	Integr. Date	Model, Serial No	ABCL Ref. (or EIDP)	Qualified	Remarks / Open Work / NCR's
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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Equipment / CI-No.	Integr. Date	Model, Serial No	ABCL Ref. (or EIDP)	Qualified	Remarks / Open Work / NCR's
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
<b>Accelerometers</b>				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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Equipment / CI-No.	Integr. Date	Model, Serial No	ABCL Ref. (or EIDP)	Qualified	Remarks / Open Work / NCR's
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
<b>Thermistors</b>					
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
<b>Star Tracker</b>					
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			
<b>SVM MLI 321000</b>					
		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
<b>Test instrumentation</b>					
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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SVM TCP Instrumentation Harness Panel external					
<b>Temporary Installed Items</b>					
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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<b>SVM</b>	CDMU	<b>3.4</b>
	ACMS/ACC	3.7
<b>HIFI</b>	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
<b>SPIRE</b>	DPU Main - partition 1	2.2.H
	DPU Main - partition 2	<b>2.2.H</b>
	DPU Redundant - partition 1	2.2.H
	DPU Redundant - partition 2	<b>2.2.H</b>
<b>PACS</b>	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

<b>HPSDB</b>	HPSDB Central Site	3.3.1.30
	HPSDB delivery to ASED	<b>R_TM_HERSCH_FM9_C_804111950</b>


<b>CCS - Set 2</b>	hpcss	2.0-1219
<b>MOIS</b>		5.03.15
<b>ACMS SCOE</b>	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 - hpcss	2.0-637
	atsup - hpcss-demo	0.0-748
	atsup - hpcss-plotter	0.0-471
<b>TM/TC DFE - Set 3</b>	Herschel-Planck TM/TC FE	2.11.07
	System Controller	2.11.5.453

**THALES**

**MINUTES OF MEETING**

PLACE : *FU Meeting Room, ESTEC*


	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
<b>CDMU SCOE - Set 3</b>	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
<b>BUS MONITOR</b>	SSBV SW version	1.11.1.87
	REMOTE INTERFACE - PIPE I/F	1.2.1.0
<b>TT&amp;C SCOE</b>	Siemens SW Version	1.21 r 0
	Tcl/Tk	8.4/8.4
<b>SAS SCOE - Set 3</b>	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
<b>BS SCOE - Set 3</b>	Siemens SW Version	1v9 r 3
	CDMIF	1.4
	Tcl/Tk	8.4/8.4
	HPIB	2.5
	TclUtil	1.05
	DAQ	1.26
<b>BCE - Set 3</b>	Siemens SW Version	1v6 r2
	CDMIF	1.1
	Tcl/Tk	8.4/8.4
	HPIB	2.5
	TclUtil	1.05
	DAQ	1.32
<b>CRYO PFM SCOE</b>	TAS-A H/W version	ABSp-HW-1801-AAAA-0001
	TAS-A SW Version of CRYO PFM	1.1.2

	<u>Spacecraft Reconfiguration TRR</u>	REF.: <b>H-P-TASF-MN-10347</b>	
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	TAS-A SW Version of CRYO RPFM	1.0.4
	NI Version LabVIEW	7.0

## Attachment 2 to Section 6.8:

# PTS Minutes H-P-TASF-MN-10366

	<b>IST1 Part2 PTS : S/C Reconfiguration Formal Run</b>	REF.: <b>H-P-TASF-MN-10366</b>	
		HERSCHEL FM	
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<b>MINUTES OF MEETING</b>		PLACE : System Meeting Room	

**PURPOSE :**  
**IST1 Part1 PTS : Spacecraft Reconfiguration Formal Run**


**CLASSIFICATION :**

ATTENDEES	FIRM	SIGNATURE	ATTENDEES	FIRM	SIGNATURE
S Mooney	TASF		A. Gatti	ESA	
J. Hall	TASF		F. Sauvage	TASF	
P. Modesto	ASED		G. Beaufils	TASF	
			F. Wechsler	ESA	
			R. Jones	TASF	
<b>WRITTEN BY :</b> J. Hall			<b>Chair:</b>	J. Hall	


**CONCLUSION :**

<b>DISTRIBUTION :</b>  <b>ATTENDEES</b>	<b>FOR FURTHER ACTION :</b>	See MoM and action item table at end of minutes
	<b>FOR INFORMATION :</b>	ASED : TAS-F : ESA:

<b>APPROVED BY</b>				
<b>NAME</b>	J. Hall	S. Mooney		
<b>SIGNATURE</b>				

	<b>IST1 Part2 PTS : S/C Reconfiguration Formal Run</b>	REF.: <b>H-P-TASF-MN-10366</b>	
		HERSCHEL FM	
		DATE : 22/04/08	PAGE : 2 of 7
<b>MINUTES OF MEETING</b>		PLACE : <i>System Meeting Room</i>	

	<b>ACTION</b>
<p><b><u>Introduction</u></b></p> <p>This Meeting Covers the IST1 part 1 Spacecraft Commissioning formal testing performed on 22<sup>nd</sup> April 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"> <li>1. <b>Identification of Test Item</b></li> <li>2. <b>Status of the Procedure</b></li> <li>3. <b>Raised Anomalies</b></li> <li>4. <b>Deviations from the test</b></li> <li>5. <b>Test evaluation</b></li> <li>6. <b>AOB</b></li> <li>7. <b>Conclusion</b></li> </ol>	
<p style="text-align: center;"><b>Identification of the test item</b></p> <p>Session ID : 2008_04_22_04_23_hercdmu_hpws22_REALTIME_SC_RECONF</p> <p>Baseline As Built configuration including deviations to the nominal configuration are listed in: H-P-TASF-MN-10347 (TRR MOM)</p>	
<p style="text-align: center;"><b>Status of the Procedure</b></p> <p>HP-2-ASED-TP-0134 Leading Procedure iss 3 was executed followed by HP-2-ASED-TP-0190 iss 1.1</p> <p><b>Leading Procedure:</b> Additional red marks were added to the test.</p> <p>2 PVS was raised #1: Time synchronisation did not work. Work around performed. <b>Objective of the test is fulfilled even with this anomaly</b></p> <p>#2: Recovery after the safety loop trip. <b>Objective of the test is fulfilled even with this anomaly</b></p> <p>The dump of the MM (00, 01, 02, 03 + CELA + CELB ) was performed prior to the transition causing the safety loop trip.</p>	

	<b>IST1 Part2 PTS : S/C Reconfiguration Formal Run</b>	REF.: <b>H-P-TASF-MN-10366</b>	
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<b>MINUTES OF MEETING</b>		PLACE : <i>System Meeting Room</i>	

System engineering confirms that this is sufficient for the post test evaluation of data.

**Objective of the test is fulfilled even with this anomaly**

**NCR to be raised**

**Spacecraft Reconfiguration:**

Additional red marks were added to the test.

1 PVS sheets were raised covering changes to the procedure.

**PVS #2: PACS switch off and recovery**

The error is detailed in NCR 4129. This PVS provides the recovery action after the occurrence of the NCR.

**Objective of the test is fulfilled even with this anomaly**

**PVS #3 Dump of MM before the occurrence of safety loop.**

**Objective of the test is fulfilled even with this anomaly**

**PVS #4: Additional step added to procedure (was in script)**

**Objective of the test is fulfilled even with this anomaly**

**PVS #5 Additional user input required by script**

**Objective of the test is fulfilled even with this anomaly**

PVS #6 Additional steps in procedure to be removed (no longer in script)

**Objective of the test is fulfilled even with this anomaly**

PVS #7 Additional steps in procedure to be removed (no longer in script)


**Objective of the test is fulfilled even with this anomaly**

### **Raised Anomalies**

- SPRs raised**

452: Max current trip of BSCOE set too low  
Closed

456: Incorrect check of TM in script in startracker  
Script error  
To be updated

	<b>IST1 Part2 PTS : S/C Reconfiguration Formal Run</b>	REF.: <b>H-P-TASF-MN-10366</b>	
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**SPR Open**

**Objective of the test is fulfilled even with this anomaly**

457: Error in script unable to identify PARAM RF CMD

Script error

Updated

To be validated

**Objective of the test is fulfilled even with this anomaly**

**New:**

**NCRs**

3958: Re-occurred on OBCP actions to switch off PACS (Reported as HIFI off). Not a spacecraft related issue. Potentially a SCOS issue.

**Minor NCR with no impact**

3212: Safety loop triggered.

Nominal-> survival transition.

Current limit in Battery SCOE increased to 20A to resolve issue. On AVM this test worked (non representative power consumption).

Reason for safety loop appears to be reported as a temperature problem with the SCOE. The threshold for temperature is 40 degree. Actual temperature is 30 degree.

The SCOE was changed to have a limit of 20A. The safety loop occurred.

It was found a TC was in the script to reduce the limit to 16A.

On this last run, the MM was dumped prior to the predicted safety loop occurrence. This took 10 mins. After transition to survival (which seems to occur correctly as the Events show the transition was OK. After 2.5 minutes, the safety loop occurred again.

The supplied power was:

- 210 Watts on Batt Scoe
- SAS 5 Amps


Same problem on Planck. Conclusion was that the power draw was marginal at 16A due to thruster firing. The 20A should resolve this issue.

This is not the case for Herschel and has not been reverified on Planck.


To investigate:

- Profile of the spacecraft consumption after a cold power on to be supplied without disabling the TCS.
- Spikes were seen on the supply (BS or SAS) during ramp down of power. This shall be monitored by the use of analogue test equipment (to monitor the current profile)




	<b>IST1 Part2 PTS : S/C Reconfiguration Formal Run</b>	REF.: <b>H-P-TASF-MN-10366</b>	
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<p>- The temperature and reported temperature of the BS shall be evaluated and measured to ensure the temperature monitoring is correct.</p> <p><b>To complete the execution of the test, an ACS shall be written to perform the testing with the SAS in full power mode and SAS SCOE TM rate set to 1 second.</b> To be confirmed with LA.</p> <p><b>TASF (SM) to schedule the NCR investigation test at the earliest convenient moment.</b></p> <p><b>QA to update the NCR with this information</b></p> <ul style="list-style-type: none"> <li><b>Additional SPRs to be raised</b></li> </ul> <p>SPR to be raised for the ACMS recovery action (11:38) in log book. Info from P.M (include the STR switch-on) <b>Objective of the test is fulfilled even with this anomaly</b></p> <p>SPR to be raised to restart the SREM after the 3b but before the level 4 event.</p> <p><b>Objective of the test is fulfilled even with this anomaly</b></p> <ul style="list-style-type: none"> <li><b>Additional NCR to be raised</b></li> </ul> <p>NCR to be raised to state that the TLM is overflowing the buffer (DEMMF160 = 57 should be 0). Info from P.M <b>This may affect the objective of the test.</b></p>	
<p style="text-align: center;"><b>Deviations from the test</b></p> <p>Payloads were in debug mode (simulated mode)</p> <ul style="list-style-type: none"> <li>PACS: Simulated Spectrometer mode (HKTM + simulate science )</li> <li>HIFI: Standby ICU on (HKTM).</li> <li>SPIRE: Simulated Photometer (HKTM + Science)</li> </ul> <p>Current SPIRE SW does not monitor the FDIR.</p> <p>In recovery action for ACMS the STR was not turned on.</p> <p>First attempt to go into RF failed (step 740 ). Re-performed with success.</p>	

	<b>IST1 Part2 PTS : S/C Reconfiguration Formal Run</b>	REF.: <b>H-P-TASF-MN-10366</b>	
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ASED (PM) PVS to be written	
<p style="text-align: center;"><b>Test Evaluation</b></p> <p>During the test (step 1280) the TLM is over filling the buffer. TLM para DEMMF160=57 should be 0. NCR to be raised</p> <p>The SREM accumulation was NO instead of the expected yes.</p> <p>SPR to be raised to restart the SREM after the 3b but before the level 4 event.</p> <p>Further evaluation of the test execution is required before determining whether the test can be deemed successful for a formal run.</p>	
<p style="text-align: center;"><b>AOB</b></p> <p>None</p>	
<p style="text-align: center;"><b>Conclusion</b></p> <p>The safety loop must be re-executed for further evaluation.</p> <p>A delta PTS shall be held following the evaluation and retest of the safety loop triggering and clarification of the open issues detailed in the test evaluation section.</p>	

	<b>IST1 Part2 PTS : S/C Reconfiguration Formal Run</b>	REF.: <b>H-P-TASF-MN-10366</b>	
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<b>MINUTES OF MEETING</b>		PLACE : <i>System Meeting Room</i>	



## Attachment 3 to Section 6.8:

# Delta TRR Minutes H-P-TASF-MN-10434

**Liberatore, Danilo (external)**

**From:** pietro modesto [pieromodesto@gmail.com]  
**Sent:** Mittwoch, 21. Mai 2008 17:39  
**To:** Brian Hogg; Liberatore, Danilo (external); jeffreyhendrikse@yahoo.com; sih\_by@blueyonder.co.uk; Koelle, Markus; luigi.allegretti-softeng@supportoesterno.aleniaspazio.it  
**Subject:** Re: Updated Functional Team plan for CW20 & CW 2  
**Attachments:** HP-2-ASED-TP-0190\_Herschel\_IST\_Test\_Case\_SC\_Reconfiguration REDS.doc; H-P-TASF-MN-10434\_IST 1\_Part2\_Spacecraft\_Config\_minutes.doc

Hi to all,

Sorry Danilo, Jeff, Brian, I have to delegate to some action for the preparation of the test of SVC reconfiguration of Friday.

SVC configuration for the test:

- CDMU must switched on with the PM B image 1, to do this (instead to change the config file of the IST start) in the chapter 7.2.4 of the leading procedure at the step 1 page 79, we change by hand in the configuration panel the PM box from A1 to B1). ✓ BBL.

- ACMS must be switched on with the PM B to do this we have to use the config file for the Scoe FD\_B\_PMB (important in this file must be update with the last data of the gyro calibration). ✓ BBL.

- INSTRUMENTS: for this Simon is the focal Point ask him if the instruments can be switched on and if the script are still valid.

- HIFI should be in standby (using script Z102999SCVT014\_ASDGEN\_HIFIPOWERON\_P) if it is allowed. ✓

- SPIRE should be in standby (using script Z102999SCVT004\_ASDGEN\_SPIREPOWERON\_P) if it is allowed. ✓

- PACS should be in Prime (using script Z102999SCVT010\_ASDGEN\_PACSPOWERON\_P for the standby and after P102999SCVT019\_ASDGEN\_PACS\_NOMSPECT that simulate the science data) if it is allowed. ✓ 04


- PROCEDURE,

I have prepared a procedure for the test of last Friday with the step that should be skipped we can use it like reference.

Or if you prefer I have attached the procedure with the step that should be skipped in red.

I have attached the MOM of the TRR for this test if you need.

That's All

	<b>IST 1 Part 2 Spacecraft Reconfiguration delta TRR</b>	REF.: <b>H-P-TASF-MN-10434</b>	
		HERSCHEL FM	
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<b>MINUTES OF MEETING</b>		PLACE : <i>FU Meeting Room</i>	

**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. Monitoring of the power shall be updated to 1 TM packet per 5 seconds rather than 1 per 10 seconds. This is not considered blocking for the rerun of the test.
3. After test execution perform the following
  - Change the IST START configuration file to start on PM A
  - Change the configuration file of ACMS SCOE to start on PM A
  - Change script to take SAS OFFLINE for the test

Tomorrow I will fly but if you have any question or point to solve before Friday morning send me a mail I will answer one time that I will arrive at home.Or if you prefer you can Ask to Alessio or Luigi

Thanks for your help

Ciao

Pietro

*AS-RLM 23.05.08*

**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	✓

*M. Müller FLM  
22.5.08 18:40*



				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				
	<b>Connector/Function</b>	<b>Skin/Connector</b>	<b>S/C unit</b>	<b>SCOE/CABLE</b>	<b>Flight/Connector</b>
SKIN-03	Test point TC + protection jumper EPC1	SK03J01	XPND1/EPC1		Plastic cap <i>Comp</i> (See note1) <i>type</i> ✓
SKIN-03	Test point TC + protection jumper EPC2	SK03J02	XPND2/EPC2		Plastic cap <i>Comp</i> (See note1) <i>type</i> ✓
	RF LINK				
	<b>Connector/Function</b>	<b>Skin/Connector</b>	<b>S/C unit</b>	<b>SCOE/CABLE</b>	<b>Flight/Connector</b>
	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)				
	<b>Connector/Function</b>	<b>Skin/Connector</b>	<b>S/C unit</b>	<b>SCOE/CABLE</b>	<b>Flight/Connector</b>
SKIN-04	RWL1 Sgn	J01	ACC/RWL-1		ACMS Flight Cap SK04P01 Plugged ✓
SKIN-04	RWL2 Sgn	J02	ACC/RWL-2		ACMS Flight Cap ✓

17.12.16 F.M.D.  
22.5.02 18:45

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				
	<b>Connector Function</b>	<b>Skin Connector</b>	<b>S/C unit</b>	<b>SCOE/CABLE</b>	<b>Flight Connector</b>
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				
	<b>Connector Function</b>	<b>Skin Connector</b>	<b>S/C unit</b>	<b>SCOE/CABLE</b>	<b>Flight Connector</b>
SKIN-06	STR1 Stimuli	J01	STR1	ACMS SCOE Cable Plugged	✓
SKIN-06	STR2 Stimuli	J02	STR2	ACMS SCOE Cable Plugged	✓
	<b>UMBILICAL</b>				
	<b>Connector Function</b>	<b>Connector</b>	<b>S/C unit</b>	<b>SCOE/CABLE</b>	<b>Flight Connector</b>
	Power/Data	HU1 J01	SYSTEM	SCOE's cable Plugged	✓
	Power/Data	HU2 J01	SYSTEM	SCOE's cable Plugged	✓

17.12.16 Fr. Mgr  
22.1.18 18.05

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	N/A	✓ no flight
		321100-J02	LL702, H702	Cryo SCOE J03	N/A	✓ no flight
	321100-J03	H502, H503	Cryo SCOE J06	N/A	✓ no flight	

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22.5.08 18:05 J

	321100-J04	P501	Cryo SCOE J01	MAY	no flight	
	321100-J05	H103, H701, L102, VT102, VT103, VT105, VT701, VH102, VH103, VH105, VH701, VS102, VS105, VS701	Cryo SCOE J11	MAY	no flight	
	321100-J06	H104, H702, L101, VT104, VT106, VT702, VH104, VH106, VH702, VS104, VS702	Cryo SCOE J03	MAY	no flight	
	321100-J07	H501	Cryo SCOE J06	MAY	no flight	
	321100-J08	T502	Cryo SCOE J01	MAY	no flight	
321 200	on top of					
	Connector Function	Connector	S/C unit	SCOE	Cryo SCOE 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 ✓ X
		321200-J02	T102, T105, T106, T111, PR_P701, T421, T442, T461, H101	Cryo SCOE J04		X ✓ X
		321200-J03	T321, T323, T501, T505, T651, T901, T903, T907, T911	Cryo SCOE J09		X ✓ X
		321200-J04	T312, T314, T316, T905, T909, T931, T933, T935	Cryo SCOE J09		X ✓ X
		321200-J05	VS103, H102	Cryo SCOE J04		X ✓ X

17.12.12 F.M. 22  
27.5.08 18:05  
JST

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
				<del>MA</del>		
to be approved & released before start of ACS/PR/TP by Floor-Manager		Date: 22.5.08 18:05		Sign:  P. Müller F.Mgr		


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: 22.5.08 18:05		Sign: M. Mühlh. F. B. 		

	Op	Comments	Non Op
<b>CDMS</b>			
CDMU	X		
1553 MIL-BUS A	X		
1553 MIL-BUS B	X		
<b>PCS</b>			
PCDU	X		
BAT		BS SCOE connected	X
Solar Array		Not connected	X
<b>TCS</b>	X		
<b>TT&amp;C</b>	X		
MGA	X	RF-SCOE connected to Test-Caps on Antenna	
LGA1	X	RF-SCOE connected to Test-Caps on Antenna	
LGA2	X	RF-SCOE connected to Test-Caps on Antenna	
<b>ACMS</b>			
1553 MIL-BUS A	X		
1553 MIL-BUS B	X		
ACC	X		
RWL1,2,3,4	X		
SAS1	X		
SAS2	X		
AAD	X		
GYR	X		
STR1	X		
STR2	X		
CRS1	X		
CRS2	X		
<b>RCS</b>		Simulated	X
<b>CCU</b>	X	Cryo SCOE partially connected	
<b>SPIRE</b>	X		
WUs			
FPU			
<b>PACS</b>	X	PACS Safe Mode with simulated science data, NO higher level mode commanding allowed	
WUs			
FPU			
<b>HIFI</b>	X	!WARNING! If HIFI is switched ON higher than StBy, the cooler in the CleanRoom has to be switch ON too.	
WUs			
FPU			
<b>VMC</b>	X		
<b>SREM</b>	X		
<b>CryoCover</b>		Not connected	X


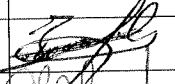


## Attachment 4 to Section 6.8:

# PTS Minutes H-P-TASF-MN-10498



	IST1 Post Test Summary:	REF.: H-P-TASF-MN-10498	
	S/C Reconfiguration- (CDMS Level 4) 2 <sup>nd</sup> Run	HERSCHEL FM	
		DATE : 29/05/08	PAGE : 1 of 5
<b>MINUTES OF MEETING</b>		PLACE : System Meeting Room	

PURPOSE : **IST1 Post Test Summary: S/C Reconfiguration- (CDMS Level 4) 2<sup>nd</sup> Run** CLASSIFICATION :

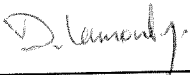
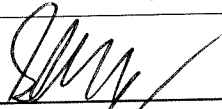

ATTENDEES	FIRM	SIGNATURE	ATTENDEES	FIRM	SIGNATURE
S Mooney	TASF		G. Beaufiles	TASF	
D Lamonby	TASF		P Modesto	ASED	
	ESA				
WRITTEN BY : S Mooney			Chair:	D Lamonby	

CONCLUSION :


The board agree that test was completed successfully. No further tests are required. Full evaluation of test data is to be performed by Engineering  
 Replay and Mass memory data is to be supplied to engineering, as soon as possible

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 ESA: T. PASSVOGEL, L. DI NAPOLI, F. PEDERSEN, A. GATTI, U. GAGEUR


APPROVED BY

NAME	D. LAMONBY	S. MOONEY	P. Modesto	
SIGNATURE				

THALES

	<b>IST1 Post Test Summary:</b>	<b>REF.: H-P-TASF-MN-10498</b>	
	<b>S/C Reconfiguration- (CDMS Level 4) 2<sup>nd</sup> Run</b>	<b>HERSCHEL FM</b>	
		<b>DATE : 29/05/08</b>	<b>PAGE : 2 of 5</b>
<b>MINUTES OF MEETING</b>		<b>PLACE : System Meeting Room</b>	

<b>Agenda:</b>	<b>ACTION</b>
<ol style="list-style-type: none"> <li>1. Introduction</li> <li>2. Identification of Test Item</li> <li>3. Status of the Procedure</li> <li>4. Raised Anomalies</li> <li>5. Deviations from the test</li> <li>6. Test evaluation</li> <li>7. AOB</li> <li>8. Conclusion</li> </ol>	
<p><b><u>Introduction</u></b></p> <p>This Meeting Covers the Post Test Review of IST1 S/C Reconfiguration (part test) CDMS Level 4. Section 5.8.6.7 of the IST spec. Test was performed on 23<sup>rd</sup> May 2008.</p> <p>This test was re-execution due to Safety loop triggering at the start of the CDMS level 4 section when last runt. Test method was modified and rerun. Ref TRR MoM <b>H-P-TASF-MN-10434</b></p> <p>No Safety loop triggering was seen during this rerun</p>	
<p style="text-align: center;"><b>Identification of the test item</b></p> <p><b>S/C Reconfiguration</b></p> <p><b>Session ID:</b></p> <p>2008_05_23_04_37_hercdmu_hpws22_REALTIME_SC_RECONF</p> <p><b>Session Tag</b></p> <p>SESS2008_05_23_04_30_hercdmu_hpws22_REALTIME</p>	
<p style="text-align: center;"><b>Status of the Procedure</b></p> <p>Start-up was performed i.a.w:</p> <p>AS RUN- HP-2-ASED-TP-0134 Leading Procedure iss 4 Dated 23<sup>rd</sup> May 2008</p> <p>Modifications are covered by PVSs see list.</p>	

	IST1 Post Test Summary:	REF.: H-P-TASF-MN-10498	
	S/C Reconfiguration- (CDMS Level 4) 2 <sup>nd</sup> Run	HERSCHEL FM	
		DATE : 29/05/08	PAGE : 3 of 5
<b>MINUTES OF MEETING</b>		PLACE : System Meeting Room	

CDMS Level 4 only part was run i.a.w

AS RUN Herschel IST Test Case Satellite reconfiguration test procedure  
HP-2-ASED-TP-0190 iss 1.1 Dated 23<sup>rd</sup> May 2008

Modifications are covered by PVSs see list

**Leading Procedure:** HP-2-ASED-TP-0134

- Modifications made to Leading procedure before start of test
  - Change the IST START configuration file to start on PM B
  - Change the configuration file of ACMS SCOE to start on PM B
  - Change script to leave SAS ONLINE for the test

Modification made during test

PVS's Raised None

**Satellite Reconfiguration test procedure:** HP-2-ASED-TP-0190 iss 1.1


PVS's Raised

**PVS #1** TP-0190 “parts to be skipped from first part of formal run” Since a partial formal run has been performed these parts are skipped; This PVS covers the necessary steps. → **no procedure update req'd**


**PVS #2** TP-0190 “refer to procedure HP-2-ASED TP-206 for instruments switch-on” Instead of switching on instruments per TP-0190, this shall be done to relevant sections of TP-206 → **procedure update req'd**

**PVS #3** TP-0190 “Additional test-step”  
Needed in order to arrive at the required configuration for continuation of the test (relation to PVS #1) → **no procedure update req'd**

**PVS #4** TP-0190 “Additional step” Needed to disconnect HIFI EGSE and turn off HIFI cooling → **no procedure update req'd**

	<b>IST1 Post Test Summary:</b>	<b>REF.: H-P-TASF-MN-10498</b>	
	<b>S/C Reconfiguration- (CDMS Level 4) 2<sup>nd</sup> Run</b>	<b>HERSCHEL FM</b>	
		<b>DATE : 29/05/08</b>	<b>PAGE : 4 of 5</b>
<b>MINUTES OF MEETING</b>		<b>PLACE : System Meeting Room</b>	

<p><b>PVS #5</b> TP-0190 “TTC SCOE file appears to be not loaded SCOE config file for the TTC SCOE not loaded during IST start. Uploaded file and rerun script ...TTC_DL_PORT_SET → <b>no procedure update req'd</b></p> <p><b>PVS #6</b> TP-0190 “Recovery required” During transition from 500 bps to 5kb error on script occurred and TM was lost. Changed back to umbilical to obtain s/c status and continue test. SPR#542raised → <b>no procedure update req'd</b></p> <p><b>Action; Satellite Reconfiguration test procedure:</b> HP-2-ASED-TP-0190 to be updated with changes referenced in PVS# 2</p>	<p><b>AI#2 P M 15/5/2008</b></p>
<p style="text-align: center;"><b>Raised Anomalies</b></p> <p>The following SPRs were raised during the debug activity</p> <ul style="list-style-type: none"> <li><b>SPRs raised</b></li> </ul> <p><b>SPR #542</b> “Unable to switch from 500bps to 5kbps whilst using RF link” Wrong parameter was set. <b>SPR Open</b> Script up dated need to verified</p> <p>open No NCR’s are raised or to be raised</p> <p><b>SPRs to be reviewed an</b></p> <p><b>Old SPR seen</b></p> <p><u><b>NCR’s raised during Test</b></u></p> <p>None</p>	<p><b>AI#3 P M 15/5/2008</b></p>

	<b>IST1 Post Test Summary:</b>	<b>REF.: H-P-TASF-MN-10498</b>	
	<b>S/C Reconfiguration- (CDMS Level 4) 2<sup>nd</sup> Run</b>	<b>HERSCHEL FM</b>	
		<b>DATE : 29/05/08</b>	<b>PAGE : 5 of 5</b>
<b>MINUTES OF MEETING</b>		<b>PLACE : System Meeting Room</b>	

<p><b><u>NCR's previously raised that impact test</u></b></p> <p>Previously see NCR 3212: Safety loop. Script worked correctly this time no safety loop see. The completion of this test can close this NCR</p> <p><b>Open work from last debug run</b></p> <p>Monitoring of the power shall be updated to 1 TM packet per 5 seconds rather than 1 per 10 seconds. This is not considered blocking for the rerun of the test.</p> <p><b>Open Work This was performed during this test. Engineer accepted test as is no further action. Action Closed</b></p>	
<p style="text-align: center;"><b>Deviations from the test</b></p> <p>Star Tracker 1 was not on, as required.</p> <p><b>Engineer accepted test as is. But will require both Star trackers on during IST2</b></p>	
<p style="text-align: center;"><b>Test Evaluation</b></p> <p>The test was performed with minimal anomalies. The test of the CDMS Level 4 was completed successfully.</p>	
<p style="text-align: center;"><b>AOB</b></p> <p>None</p>	
<p style="text-align: center;"><b>Conclusion</b></p> <p>The board agree that test was completed successfully. No further tests are required. Full evaluation of test data is to be performed by Engineering Replay and Mass memory data is to be supplied to engineering, as soon as possible</p>	<p style="text-align: center;"><b>AI#3 I L 3/5/2008</b></p>

**6.9 Script file configuration**

TBC

**6.10 Engineering (pre-evaluation)**

N/A

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		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			
	Hözle 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	X	Thales Alenia Space Cannes	TAS-F
X	Koelle Markus	ASA43		Thales Alenia Space Torino	TAS-I
X	Koppe Axel	AED312	X	ESA/ESTEC	ESA
X	Kroeker Jürgen	AED65			
X	La Gioia Valentina	Terma		<b>Instruments:</b>	
	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		<b>Subcontractors:</b>	
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